The Law of the Horse: What Cyberlaw Might Teach

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Two years ago, in a conference on the "Law of Cyberspace," at the University of Chicago, in a room packed with "cyberlaw" devotees (and worse), Judge Frank Easterbrook told the assembled listeners that there was no more a "law of cyberspace" than there was a "law of the horse."[1] That the effort to speak as if there were such a law would just muddy thought rather than clarify problems. And that legal academics ("dilettantes") should stand aside as judges and lawyers and technologists worked through the quotidian problems that this souped up telephone would present. "Go home," essentially, was Easterbrook's welcome.

As is often the case when my then colleague spoke, the intervention produced an awkward silence, then some polite applause, and then quick passage to the next speaker. It was an interesting thought — the thought that this conference was as significant as a conference on the law of the horse (an anxious student sitting behind me whispered that he had never heard of the "law of the horse"). But it didn't seem a helpful thought, 2 hours into this day long conference. And so not helpful, it was put away. Talk quickly shifted in the balance of the day, and in the balance of the contributions, to the idea that, either the law of the horse was significant after all, or that the law of cyberspace was something more.

Some of us, however, could not so easily leave the question behind. And I confess that I've spent too much time thinking just what it is that a law of cyberspace could teach. This essay is an introduction. My aim is to sketch something general about how we might think of regulation here — in real space, that is — as a way to say something particular about how we should think of regulation there — in cyberspace. My suggestion is both that there is something new to think about there, and that what we learn there will teach us something about what we know from here.

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*Thanks to Larry Kramer and Tracey Meares for helpful discussions on an earlier draft of this essay.

[1] See Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. Chi. L. Forum 207 (1996).

My essay moves in two parts. The first describes regulation in real space. It is not meant to do much more than draw together a range of related thoughts about the structure of regulation here — to suggest a model, or heuristic, to make it possible to speak consistently about regulation there.

The second part applies this model to the regulation of cyberspace. The comparison will reveal what regulation there will look like. It will also reveal a hole in how we think of regulation, and its limits, generally. Its effect should be to turn us back to real space regulation — to see something missing in our understand of regulation here, by seeing what's unavoidable about regulation there.

THE REGULATION OF REAL SPACE

It gets born out of a familiar idea. Behavior, this idea suggests, is regulated by four sorts of constraints. Law is just one of those constraints. Law (in the naive positivist's view) orders people to be behave in certain ways. (Obviously it does more than this, but put aside this argument with positivism; my point here is not to describe the essence of law; it is only to describe one part of law). Law tells me not to deduct more than 50% of business meals from my income taxes; it tells me not to drive faster than 55 mph on a highway. It tells me not to buy drugs; not to sell unlicensed cigarettes; not to trade across international borders without first filing a customs form. Law directs behavior in these ways, by threatening a punishment if behavior is different from how law directs. In this way, we all agree, law regulates.

Social norms regulate as well. They are a second sort of constraint. Norms say that I can buy a newspaper, but cannot buy a friend. They frown on the racist's jokes; they are unsure about whether a man should hold a door for a woman. Norms too, like law, regulate by threatening punishment ex post. But unlike law, this punishment is not centralized. It is enforced if at all by a community, not a government. In this way, norms constrain. In this way, they too regulate.

So too do markets regulate. Markets regulate by price — for those goods at least that are included within the market. The market constrains my ability to trade hours of teaching for potatoes; or my kids glasses of lemonade for tickets to the movies. Of course, the market only so constrains because of other constraints of law, and social norms — markets are constituted by property and contract law; they operate within the domain allowed by social norms.

But given these norms, and given this law, the market presents another set of constraints on individual and collective behavior. Or alternatively, it establishes another band of regulation on individual and collective behavior.

And finally too with the constraints of architecture, or "nature,"[2] or for reasons that will become plain quite soon, "real space code." These, in a sense, we simply find ourselves with. In this sense, these constraints regulate. That I can't see through walls is a constraint on my ability to snoop. That I can't read your mind is a constraint on my ability to know whether you are telling me the truth. That I can't lift large objects is a constraint on my ability to steal. That it takes 12 hours to drive the closest abortion clinic is a constraint on a woman's ability to have an abortion. That there is a highway and train tracks separating this neighborhood from that is a constraint on citizens to integrate. These constraints bind in a way that regulates behavior. In this way, they regulate.

The New Chicago School emphasizes these different kinds of constraint. It sees the value in understanding how they together regulate behavior. The point might be represented in a simple picture. (*fig.* 1) Each of the four ellipses represents one kind of constraint; the circle in the middle represents the entity being regulated.

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[2] I use the word "nature" here not unaware of all the post-m problems with the term. I mean it in quite an innocent sense, of just how we find the world at any one time, even though, or even if, how we find it is always made.

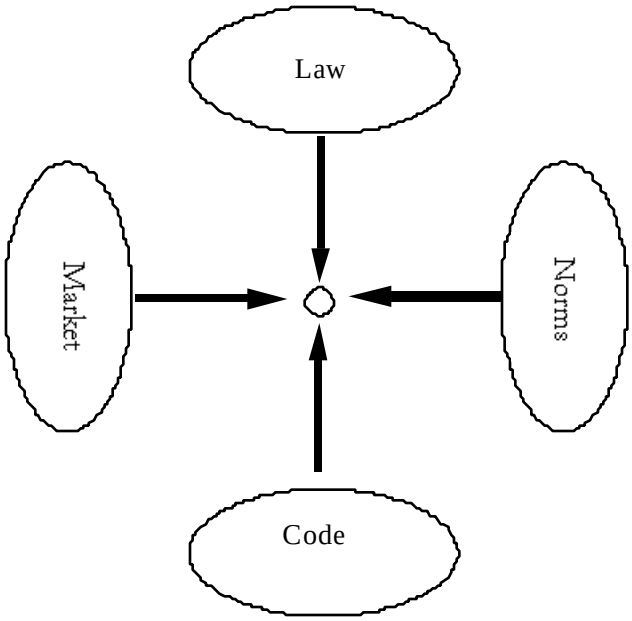

Figure 1

The lines represent the regulation of each of these four constraints. The four are parallel to this extent. But from the point that for constraints regulate, one should not conclude that law is an equal among those for constraints. For law is not equal. As the New Chicago School emphasizes these constraints themselves are the subject of regulation. That while law may regulate individuals *directly*, it also regulates these other constraints directly, as a means to regulating individuals *indirectly*. The point is represented in the modification of figure 1 represented below:

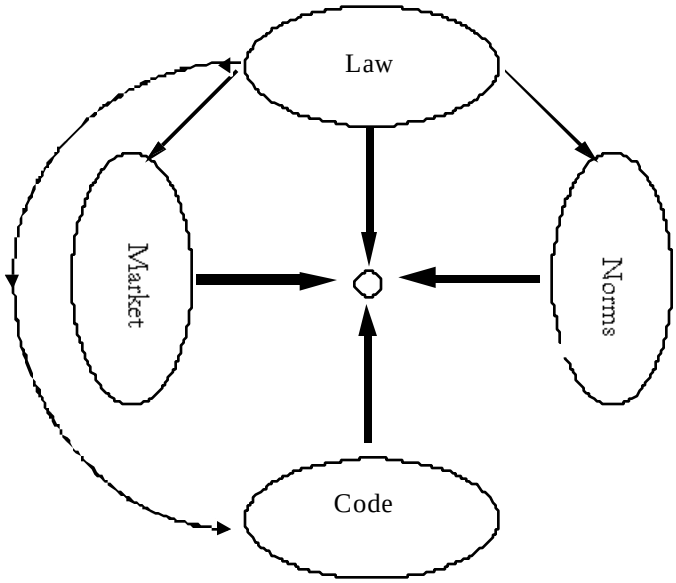

Figure 2

As I described with figure 1, law regulates directly by threatening ex post sanctions (the arrow directed to the circle in the center). But law can regulate indirectly as well, by regulating these other structures of constraint (the arrows directed to the ellipses).[3] When it regulates these other structures of constraint, the law changes their constraints, so as to change the effect that they might have on the behavior being regulated. The law *uses* these other structures of constraint to effect its own ends. This use is plainly regulation. And its effectiveness, as I argue below, is in many contexts much greater than its effectiveness when regulating directly.

Some examples will help make the point:

Smoking: Say the government's objective is to reduce the consumption of cigarettes. There are a number of means that the government could select to this single end. A law could, for example,

[3] My point in this drawing is not to represent all the forces that might influence each constraint. No doubt changes in code influence law as well as law influencing code; and the same with the other constraints as well. A complete account of how these constraints evolve would have to include an account of these interwoven influences. But for the moment, I am focusing just on the intentional intervention by government.

ban smoking. (That would be law regulating the behavior it wants to change directly.) Or the law could tax cigarettes. (That would be the law regulating the market for the supply of cigarettes, to decrease the consumption of cigarettes.) Or the law could fund a public ad campaign against smoking. (That would be the law regulating social norms, as a means to regulating smoking behavior.) Or the law could regulate the nicotine in cigarettes, requiring manufacturers to reduce or eliminate the nicotine. (That would be the law regulating the "code" of cigarettes, as a way to reduce their addictiveness, as a way to reduce the consumption of cigarettes.) Each of these actions by the government can be expected to have some effect (call that its benefit) on the consumption of cigarettes; each action has a cost; the question with each means is whether the costs outweigh the benefits.

Seatbelts: The government might want to increase the wearing of seatbelts. It could therefore pass a law to require the wearing of seatbelts. (That would be the law regulating behavior directly.) Or it could fund public education campaigns to create a stigma against those who do not wear seatbelts. (That would be the law regulating social norms, as a means to regulating belting behavior.) Or the law could subsidize insurance companies to offer reduced rates to seat belt wearers. (That would be law regulating the market, as a way to regulating belting behavior.) Or the law could mandate automatic seatbelts, or ignition locking systems. (That would be to change the "code" of the automobile, as a means to regulating belting behavior.) Each action might be said to have some effect on belting behavior; each has some cost. The question for the government is how to get the most belting behavior given the costs.

Discrimination against the disabled: The disabled bear the burden of significant social and physical barriers in day to day life. The government might decide to do something about those barriers. The traditional answer is law regulating behavior directly: A law barring discrimination on the basis of physical disability. But the law could do more, as I have sketched in the previous two examples: It could, for example, educate children so as to change social norms (Regulating norms to regulate behavior.) It could as well subsidize companies to hire the disabled (Regulating the market to regulate behavior). It could regulate building codes to make buildings more accessible to the disabled (Regulating "nature" or (and here we begin to see the meaning intended) real space code(s) to regulate behavior). Each of these regulations might be expected to have some effect on discriminating behavior. Each has a cost. The

government must weigh the costs against the benefits, and select the mode that regulates most effectively.

Drugs: The government is obsessed with reducing the consumption of illicit drugs. Its main strategy has been the direct regulation of behavior, through the threat of barbaric prison terms for violations of the drug laws. This policy has obvious costs, and nonobvious benefits. But most interesting for our purposes are the nonobvious costs. Tracey Meares has pointed to some of these.[4] As she argues, one effective structure of constraint for regulating the consumption of illegal drugs is the social structure of the community within which an individual lives. In the terms I've offered, these are social norm constraints: They refer to the constraints of what is appropriate, enforced within a community by the sanctions of a community, whether shame, or exclusion, or force.

So far I've suggested ways in which the government might act to strengthen social norm constraints. But it should be obvious that the government can act to weaken social norm constraints as well. It can weaken social norm constraints by weakening the communities within which they have their effect. Eric Posner has pointed quite effectively to contexts within which government action has had this effect.[5] Tracey Meares makes the same point about the extreme sanctions of the criminal law do. In their extremity and effect, these sanctions undermine the social structures that themselves would support this social policy. This is an indirect effect of the direct regulation of law; and at some point, this effect might overwhelm the effect of the law.

Of course the net effect of these different constraints cannot be deduced a priori. The governments acts in other ways to regulate the consumption of drugs as well. It acts, through extensive public education campaigns, to stigmatize the consumption of drugs (Regulating social norms to regulate behavior.) It seizes drugs at the border, thereby reducing the supply, increasing the price, and reducing demand (Regulating the market to regulate behavior). And at times it has even (and grotesquely) regulated the

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[4] Tracey L. Meares, *Social Organization and Drug Law Enforcement*, (Draft, 1.3.97).

[5] See Eric A. Posner, *The Regulation of Groups: The Influence of Legal and Nonlegal Sanctions on Collective Action*, 63 U. Chi. L. Rev. 133 (1996).

"code" of drugs, making them more dangerous, and thereby increasing the constraint on their consumption (By, for example, spraying them with paraquat.) All of these together influence the consumption of drugs. But as advocates of legalization argue, they also influence the quantity of other criminal behavior as well. The question for the policy maker is the net effect — whether as a whole, the policy reduces or increases social costs.

Abortion: One final example will complete the account. This is the regulation of abortion. Since *Roe*, the Court has recognized a constitutional right of a woman to an abortion. This right, however, has not disabled governments when they desire to eliminate, or reduce the number of abortions. For again, the government need not rely on direct regulation of abortion alone to ban abortion (which, under *Roe* would be unconstitutional). It can instead use indirect means to the same end. In *Rust* v. *Sullivan*,[6] the Court upheld the right of the government to alter social norms relating to abortion, by biasing the provision of family planning advice by forbidding doctors in (government funded) family planning clinics from mentioning abortion as a method of family planning. This is a regulation of social norms (here, within the social structure of medical care) to regulate behavior. In *Maher v. Roe*,[7] the Court upheld the right of the government selectively to disable medical funding for abortion. This is the use of the market to regulate abortion. And in *Ohio v. Akron Center for Reproductive Health*,[8] the Court upheld the right of the state to force minor women to wait 24 hours before getting an abortion. This is the use of real space code (here, the constraints of time) to regulate access to abortion. In all these ways, *Roe* notwithstanding, the government can regulation the behavior of women wanting an abortion.

In all of these examples, law is functioning in two very different ways. In one way, its operation is direct; in the other, indirect.[9] When it is direct, it tells individuals how they out to behave.

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[6] 500 U.S. 173 (1991).

[7] 432 U.S. 464 (1977).

[8] 457 U.S. 502 (1990).

[9] I am also aware that this distinction between "direct" and "indirect" has a long and troubled history in philosophy, as well as law. But the trouble there

It threatens a punishment if they deviate from that directed behavior. And it delivers that punishment in a certain proportion of cases tied to that behavior. Law could say, You may not smoke, or you must wear seatbelts, or you may not discriminate against the disabled; or you may not take drugs; or abortion is prohibited. These are examples of law regulating directly. They are a paradigm of legal action; they are the model of legal action against which most of our rights are checks.

But in all of these examples, law also has a way of regulating that is more indirect. When law regulates indirectly, it aims at changing the constraints of one of these other structures of constraint. Law can tax cigarettes, directly regulating the market so as to indirectly change consumption of cigarettes. Law can put ads on TV showing the consequences of not wearing seatbelts, directly working on a norm against seatbelts so as to indirectly effect the use of seatbelts. Law can order that buildings be built differently, directly regulating building codes so as to indirectly regulate discriminating behavior with respect to the disabled. And obviously, law can regulate all three of these constraints simultaneously, when, for example, it cuts the supply of drugs, and runs "just say no" campaigns, and sprays fields of marijuana with paraquat. Law can select among these various techniques, in selecting the end it wants to achieve. Which it selects depends upon the return from each.

These techniques of direct and indirect regulation are the tools that governments use to regulate behavior. The objective of the New Chicago School is to speak comprehensively about these of tools. For the implicit critique of the old Chicago school (and its cousins) was that law — relative to these other constraints — is an inferior regulator. But this more complete account shows why this old critique is just misleading. These other constraints don't exist independent of the law; they themselves are in part the product of the law.[10] Thus the question is never "law *or*" something else. The question is instead to what extent is a particular constraint a function of the law, and to what extent can it be changed by the law.

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comes when a line between them must be drawn, and here I don't need to draw any line separating one from the other.

[10] See, e.g., Cass R. Sunstein, *Lochner's Legacy*, 87 Colum. L. Rev. 873 (1987),

When we think of regulation in this more general way, we see things that a less complete account might miss. One thing that we might see is how one kind of constraint can be substituted for another. At one time, law regulating directly might have been the most efficient means to effect some behavior; at another time, norms might come to trump law. The question then is how to substitute the norms for the law, or how to change norms so that they could replace law. Or again: at one time, norms might be the most effective means for effecting some behavior; at another time, real space code might trump norms. The question is how to substitute the code for the norms, or how to change code so that it supplants the norms. The efficient regulator thinks about these trade-offs, as the critical analyst explores the extent to which a particular constraint is the expression of a regulatory policy.

Something else we might notice when we think about regulation in this comprehensive way is a feature about constitutional law. In the main, rights protections are limits on direct regulation; rarely are they constraints on indirect regulations. Our tradition is highly sensitive to the propriety and impropriety of direct regulation; it is largely blind to the equivalent effects of indirect regulation. If Congress were to pass a law banning doctors from speaking about abortion (direct regulation), Courts would not hesitate to strike it down. But when Congress conditions spending achieving the very same constraint (e.g., *Rust*), the question doesn't appear on the constitution's screen.

There may be good reasons for this difference. My point is not to criticize it generally. My aim instead is to provide a way of speaking of this difference, as a means of questioning why these differences exist, and to suggest something about the conditions under which they make sense. When, or where, does it make sense that constitutional law is so direct regulation focused? When, or where, does it make sense for it to extend its review?

As others have noted, this is an inquiry that is becoming more pressing. In the sense that I have described, regulation is becoming more indirect. Zoning, spending, taxing, building codes, education, advertising, subsidies — these are all indirect regulations, and increasingly, they are the regulatory technique of choice. But plainly, they are as much "regulations" as "Thou shall not consume cocaine" is a regulation. Yet it would be silly, however, to conclude (as the anti-law skeptics might) that these regulations (since "regulation") have little effect. It might be true that if 1/2 of direct regulation were dropped from the books tomorrow, there would be

little change in behavior. But change just 10% of these indirect regulations, and you've remade much of the modern world.

My sense is that constitutional law has yet to catch up to this shift. It has yet to develop a way to express constitutional value in the context of indirect regulation. Its original way of speaking has lost its salience. No doubt, it originally had force. The traditional focus on direct regulation, and blindness to the effects of indirect regulation, was a balance that made sense when most regulation was direct. But when that balance changes — when indirect regulation becomes the dominant mode of regulation — then we need a way to translate the values implicit in those limits on law's direct regulation, into limits on law's indirect regulations. We must, that is, find a way to translate the values of the original regime in the context of this new regime.

That translation is a big project. It is not my project here. My focus here is on a particular domain of regulation, that may make the more general point more salient, and I suggest, more pressing.[11]

This domain is the regulation of cyberspace. In cyberspace, we can't avoid a shift that I suggest is becoming increasingly common in real space as well. Whatever doubts one has about the significance of indirect regulation in real space, there can't be any doubt about the significance of indirect regulation in cyberspace. And likewise, whatever confidence one has about the ability of constitutional law to regulate governments in real space, one can't help but be skeptical about how constitutional law will regulate governments in cyberspace. Something new will be needed there. And if I am successful, then that need there will suggest the same need here.

One final disclaimer: I've organized this way of talking about regulation not because I believe that the insights that it yields are insights others haven't seen. My purpose instead is more plainly rhetorical. It is simply to present the structure in a way that makes compelling conclusions that, in other contexts, are more easily ig-

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[11] Other examples of this analysis focused quite precisely are well known: Richard Ford and Jerry Frug's work on the politics of space, for example, are in the sense I am suggesting, studies and critiques of indirect regulation by government. Richard Ford, *The Boundaries of Race: Political Geography in Legal Analysis*, 107 Harv. L. Rev. 1841 (1994); Jerry Frug, *The Geography of Community*, 48 Stan. L. Rev. 1047 (1996).

nored. I want to *persuade you to see* in a different way, and then to develop intuitions that this different way of seeing might yield.

THE REGULATIONS OF CYBERSPACE

I said that we could understand regulation in real space as a function of four sorts of constraints — law, norms, markets, and what I called real space code. We can understand regulation in cyberspace in the very same way. It too is a function of the constraints of law, of norms, of the market, and of what I will call, "code."

• Law regulates behavior in cyberspace — copyright law, defamation law, and obscenity laws all continue to threaten ex post sanction for the violation of some legal right. How well, or how efficiently, is a separate question — in some cases more efficiently, in some cases not. But whether better or not, law continues to threaten an expected return. Legislatures enact;[12] prosecutors threaten;[13] courts convict.[14]

• Norms regulate behavior in cyberspace as well: Talk about democratic politics in the alt.knitting newsgroup, and you open yourself to flaming; "spoof" someone's identity in a MUD, and you might find yourself toaded; talk too much in a discussion list, and you're likely to be placed on a common bozo filter. In each case, there is a set of understandings that constrain behavior in this space, again through a threat of ex post (though decentralized) sanctions.

• Markets also regulate behavior in cyberspace. Pricing structures constrain access, and if they don't, busy signals do. Areas of the web are beginning to charge for access, as on-line services have for some time. Advertisers reward popular sites; on-line services drop low populated forums. These behaviors are all a function of market constraints, and market opportunity. They are all, that is, regulations of the market.

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[12] The ACLU lists 11 states that passed internet regulations in 1995 and 1996. See <http://www.aclu.org/issues/cyber/censor/stbills.html#bills>.

[13] See, e.g., the policy of Minn. A.G., <http://www.state.mn.us/ebranch/ag/memo.txt>

[14] See, e.g., Playboy Enterprises v. Chuckleberry, 1996 US Dist Lexis 8435 (SD NY 1996); United States v. Thomas, 74 F3d 701 (6th Cir. 1996).

• And finally an analog to real space code —*code* — regulates behavior in cyberspace. The code, or the software that makes cyberspace as it is, constitutes a set of constraints on how one can behave. The substance of these constraints vary, but they are all experienced as conditions on one's access to cyberspace. In some places, one must enter a password before one gains access;[15] in other places, one can enter whether identified or not.[16] In some places, the transactions that one engages produce traces that link the transactions (the mouse droppings) back to the individual;[17] in other places, this link is achieved only if the individual wants.[18] In some places, one can select to speak a language that only the recipient can hear (through encryption);[19] in other places, encryption is not an option.[20] The code or software or architecture or protocols set these features; they are features selected by code writers; they constrain some behavior by making other behavior possible, or impossible. In this sense, they too are regulations, just as the architectures of real space code are regulations.[21]

It is this last kind of regulation, however, that will be most important to the analysis that follows. In section that follows, I offer an example that might make the point more plainly. My aim is to make salient the relationship between the values imbedded in a particular cyberspace place (its architecture), and the code that

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[15] For example, online services such as America Online.

[16] USENET postings can be anonymous.

[17] Web browser's make this information available, both in real time, and archived in a cookie file.

[18] Web browsers also permit users to turn this tracking feature off.

[19] PGP is a program to encrypt messages.

[20] Encryption, for example, is illegal in some international contexts. See the comments of Ambassador David Aaron, at <http://www.bxa.doc.gov/aaron.htm>.

[21] This idea of the law in code is beginning to be the focus of a number of scholars' work. See, e.g., Joel R. Reidenberg, *Governing Networks and Rule-Making in Cyberspace*, 45 Emory L.J. 911 (1996); David Johnson & David Post, *Law and Borders-The Rise of Law in Cyberspace*, 48 Stan. L. Rev. 1367 (1996); M. Ethan Katsh, *Software Worlds and the First Amendment: Virtual Doorkeepers in Cyberspace*, 1996 U. Chi. L. Forum 335 (1996).

makes those values possible. The contrast between these cyberspace places should help make the point.

One nit, however, before I describe these places. I don't mean to be mysterious or ontological about the place that cyberspace is. Indeed, I think cyberspace theorists are too quick to speak as if cyberspace is unconnected to this space, as if it were different planet that people went to and lived.[22] It's not that. Cyberspace is always a place where one is both in real space, and in cyberspace, at the same time.[23] But just because one is here, that doesn't mean there isn't utility in speaking of cyberspace as "there" just as one can be a citizen of Illinois as well as a citizen of the United States. My use of this language of places, and space, is purely pragmatic. My claim is that there will be a return from this way of speaking, but the proof of that can come only at the end.

Cyberspace Places: AOL & Counsel Connect & The Internet

Compare two places in cyberspace — places defined by different architectures of code — and think about the different values these different places manifest. The two places are two on-line services: One is America Online (AOL); the other, Counsel Connect (CC).

With more than 4 million subscribers, AOL is the world's largest online service. It offers its users a range of content, as well as email, and chat facilities. It also offers its users access to the World Wide Web.

One accesses AOL through software written by AOL. This software enables access, while also implementing restrictions on a users' behavior in AOL. We could describe these restrictions as regulations. In the description that follows, two kinds of regulations will be particularly important.

One regulation is this: The code of AOL allows users up to 5 different "screen names" on AOL. Depending upon what names are available, these names, and the profiles that one can write to describe the name, identify the user of that particular screen name

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[22] See, e.g., David R. Johnson & David Post, *Law and Borders — The Rise of Law in Cyberspace*, 48 Stan. L. Rev. 1367 (1996).

[23] Lawrence Lessig, *The Zones of Cyberspace*, 48 Stan. L. Rev. 1403, 1403 (1996).

in whatever way the user wishes to be identified. They are one's identity when one is one AOL, and this identity, in large part, is as one defines it.

One user, for example, might have one account; that account might have three screen names; those names could be Jane, and John, and Jasper (unlikely, of course, because all simple names have already been taken on AOL, but put that aside for the moment). With each screen name, the user can specify a different user profile — a file open to other users that describes, or purports to describe, the person behind the screen name. John's profile might describe "John" as a married man with kids, in his 40s, with an interest in computers and biking; Jane's profile might describe "Jane" as a single woman in her 20s, hockey player, "looking for fun"; and Jasper's profile might describe "Jasper" as "A cat." To users of AOL, these three screen names look like three people. But in my example, they all three arise from the same person — a person unlike any of the profiles described.

This person can use these screen names then in very different ways. With each screen name, for example, comes an email address, so that one user can have three different email identities. And more interestingly, using these different screen names, the one user can enter chat rooms with these very different characters. Chat rooms are places where people discuss just about anything: some are topic centered (gardening, movies, etc.); some are status centered (30 somethings, gay, married). But they all are places where people meet, and talk, about whatever they wish to talk about. With the different identities that these screen names, and profiles, produce, the user of this account can enter these chat rooms as different people. He can speak as a woman, for example; or as a man; or as a cat.

That's the freedom enhancing aspect of AOL's rules — rules implemented through the code of AOL's system. There's a second aspect, however, that has a more ambiguous relationship to freedom. This is the parental control feature of AOL's code. AOL gives the primary screen name holder the ability to control what subsidiary screen names can get access to. The software allows the user to block, that is, the access that another screen name holder gets. So if our imagined user had a son named Jonnie, and John created a screen name for Jonnie, John could decide what parts of AOL Jonnie got access to. He could bar Jonnie, for example, from chat rooms, or from access to USENET postings.

In light of those two rules, we might describe the normative universe of AOL (or at least the small part I have described) like this: AOL is a place that permits maximal individual plasticity, and opportunity to experiment with that plasticity; it is also a place where parents are given power (through the code) to control the access of others. Parents always had the power to control their kids through threats (like law) or through norms (educating them to stay away from improper places); but AOL gives them the power of code to achieve the same ends. And no doubt it is easier to disobey the order of one's parent than to disobey the rules of this code.

Compare Counsel Connect: Counsel Connect [CC] is an online service designed for lawyers and for journalists. Only lawyers and journalists may join. It provides legal resources to members, as well as about 1,000 discussion groups, where members can gather to discuss various legal topics. The discussion groups order discussion in threaded lists, so one can pick the subtopic one wants to discuss (i.e., within the First Amendment Forum, one might pick a discussion of hate speech); and then one's contributions are added to the thread of the conversation, to be reviewed and added to later by others.

The conversations in these groups are highly varied. Some are extremely informative and substantively quite strong; others are more playful, and less serious. Some are plainly work related; others are clearly escapes from work relationships. This variety has however attracted a sufficiently large group of people who consider the company they find there sufficiently interesting or valuable to continue to pay to get access. Membership is now reported to be users.

The code of CC however is very different from AOL. In CC, one can have only one identity, and that identity must be your real identity. One is tied to one's real life character; one's real life professional reputation is implicated by what one's CC persona says. There isn't even a way to submit questions, or comments, anonymously. Everything in CC happens with one's real name.

In this way, CC offers individuals less freedom than AOL, though one can well imagine that the quality of online discussion is thereby improved. But in another way, CC builds in more freedom than AOL. There is no way to block access on these accounts. One might imagine, for example, a law firm specializing in intellectual property who would want to get CC for their attor-

neys, but limit their access just to intellectual property sections. The code doesn't allow this. The code gives every member equal access, regardless of the wishes of the person who pays.

And so as I described the normative universe of AOL, we might also describe the normative universe of CC: CC is a place where individuals are tied to their real space reputation; where that reputation is used, in a sense, to moderate or control the conversation of that space. Users can't hide their ignorance (so they are less likely to say stupid things perhaps). They can't avoid responsibility for irresponsible speech (so they are less likely to say irresponsible things perhaps.) In this sense the space is less free than AOL, but the benefits from this lack of freedom aren't difficult to imagine.

CC, however, expresses a value of openness and access, by not enabling blocking technologies like AOL. This expresses a value of equality, and equality in access. It says one is a member of the whole community, if a member of any part; that we want members open to everything if open to any part.

These are the two worlds of AOL and CC. They express two different normative ideals. They are designed, no doubt, to two different ends, but the ideals, and the ends, are achieved through the architecture of the space.

For here's the key: The differences between these spaces are largely the product of the differences in code. It is just software that says that I get 5 screen names in AOL, but only one in CC. It is just software that says I get to set my names in AOL, but not in CC. Software defines the constraints that one lives life subject to in these two spaces; these constraints are the expression of differences in value; but the constraints, and the values they express then, are the product of different code writing. There is a code here that expresses given values; these values are the product of this code. And this code, important, is made, and can change.

This point about the values expressed in these two different (and private) on line services can be made as well about the internet itself. But to see the point about the internet, we must come to think of the internet not as something natural, or given us by nature, but as a collection of software that has changed quite dramatically over the last few years, and that will continue to change. We should think of it, that is, as if it had version numbers attached to it. So that just as Microsoft Word has moved through versions

from 1 through 7, so too the internet moves through versions just as plentiful, and just as diverse.

If rather than speaking of cyberspace generally, we spoke of Cyberspace v.93 compared with Cyberspace v.97, we would notice important differences. C.93 was a place where anonymity was the norm; where people could be as they wished; where there was little to track them as they acted; where it was possible to do lots without fear of detection. C.97 is less such a place: More and more, software tracks where you go; tracks what you see; requires you verify who you are when you enter different places. C.97 is becoming more like CC; C.93 was more like AOL. And as with the differences between AOL and CC, so to are there normative differences between C.93 and C.97. In part those differences have to do with the differences in the people who populate the net no doubt. But in the main, I suggest, these differences in values are due to the differences in the code that give these values voice.

My claim that different code architectures express different values should not be controversial. But it should suggest something quite significant about the possibilities for regulation in cyberspace, and about its pedigree. To the extent that code can be made to regulate directly, because code is plastic, code can regulate more. Code in cyberspace can more easily substitute for law, or norms. Code can more subtly control and discipline behavior. Code is a richer alternative to these other forms of constraint, and hence it makes more real the sense in which the four constraints that I described can be traded off, one against the other. And it makes more pressing the need to understand the implicit values in different trades.

What will these trade-offs be? In the sections that follows I sketch two examples of code replacing law. There are many more, and as the previous section suggested, the trade-offs are not just from law to code, but among constraints generally. But the focus on the problem that I want to push here is the trade-off between code and law, and two examples should be enough to present this problem.

Once it is plain that code can replace law, the pedigree of the codewriters becomes central. Code in essence becomes an alternative sovereign — since it is in essence an alternative structure of regulation. But who authors this sovereign authority? And with what legitimacy?

Code replacing Law: Intellectual Property

We have special laws to protect against the theft of autos, or planes. We don't have special laws to protect against the theft of skyscrapers. Skyscrapers pretty much take care of themselves. For the purpose of preventing theft, real space code is an ally of skyscrapers (making them impossible to move); it is an enemy of cars, and planes (making them quite easy to move).

Intellectual property is more like cars and planes than skyscrapers. Indeed, as the world is just now, it fares far worse than cars and planes. At least if someone takes my car, I know it; it can call the police, and they can try to find it. But if someone takes an illegal copy of my article (copying it without paying for it) then I don't necessarily know. Sales might go down, my fame might go up, but there is no way to trace the drop in sales to this individual theft, and no way to link the rise (or fall) in fame to this subsidized distribution.

When theorists of the net first thought about intellectual property, they argued that things were about to get much worse. "Everything [we know] about intellectual property," we were told, "is wrong." Property could not be controlled on the net; copyright made no sense. We would have to find new ways to make money in cyberspace, because the technology has destroyed the ability to make money by controlling copies.

The reasons were plain: The net is a digital medium. Digital copies can be perfect and free. One can scan a copyrighted photo into a digital file, and then post it on USENET to millions of people. Marginal cost to the poster — $0. The nature of the net, we were told, would make copyright controls impossible. Copyright was dead, and long live copyright.

There was something odd about this argument, even at the start. It betrayed a certain is-ism about cyberspace. Cyberspace was a place where "infinite copies could be made for free." But why exactly? Infinite copies could be made, because the code permits such copying. So why, some asked, couldn't the code be changed? What reason was there that we couldn't imagine a different code that better protected intellectual property?

I don't have an explanation for this lack of imagination. The Barlows and Dysons of the world don't lack imagination, so I am unsure just why they were so trapped by old ways of thinking. But

we're far enough into this debate to be liberated from this old way of thinking. And best among the work of the liberators are the writings of an important technologist — Mark Stefik, of Xerox PARC (appropriately enough).

In a series of articles, most recently appearing in Scientific American,[24] Stefik describes what he calls "Trusted Systems" for copyright management. Trusted systems enable owners of intellectual property perfectly to control access to that property, and perfectly to meter usage of the property that they control. Stefik has described a way to turn airplanes into skyscrapers — he had described a change in the code of cyberspace to make it possible to protect intellectual property in a far more efficient way than real space can.

Once one sees the model, the path to such systems seems unavoidable. The architecture of cyberspace can easily be modified to support these perfect systems of property control. And to the extent that the systems work, they are a superior protection for intellectual property from the protections that exist in real space. Code structures will better protect copyright in cyberspace than law protects copyright in real space.

This, I want to argue, is a real problem. For when I have said "better protect" I have meant "better" from the perspective of the copyright holder. But in real space, the rights of copyright are compromised rights. The owner has a set of rights, subject to a public use exception. The public may use the owner's property for limited and specific purposes, his rights notwithstanding. But in this Stefik world of perfect property protection, *there need be no such exception to the owner's control*. What the law reserves as an limitation on the property holder's rights the code could ignore. The code could, that is, implement a set of protections for material now copyrighted that would protect that property more extensively than it is protected by "copyright."

I'm not saying it necessarily would, though I'm not sure I see the incentives to suggest that it wouldn't. My point is not a prediction. It is just to sketch how it is that a code substitute for law would leave out of the bargain something thought essential to law.

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[24] Mark Stefik, *Trusted Systems*, Scientific American 78 (March 1997).

Stefik's system could. My claim is that the law should decide whether it should.[25]

Code replacing Law: "Contract"

A second example of code replacing law is in the law of contracts. There has been lots of talk in cyberspace literature about how in essence, cyberspace is a place where "contract" rather than "law" will govern people's behavior. AOL, for example, will bind you to enter your name as you enter its system. This is "like" a contract, these theorists say, since one is bound by a set of constraints agreed to when one signed up for service with AOL. It is as if one simply promised to identify oneself as one entered AOL, and when one didn't, AOL would then have a claim for breach of contract. It is "as if" but better: since the obligation is imposed and enforced more efficiently than the same obligation imposed and enforced by contract law.

As a contracts professor, I find these claims odd. Because, in fact, these code constraints are *not* "contracts." Sure, they are "like" contracts, (they are both self-imposed constraints) but "like" is not "is." A "lion" is like a "cat", but one would be quite foolish to let one's kid play with a lion. And so too with "contracts in code": however similar their structure is, they are dissimilar in a way that is crucial.

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[25] I have of course simplified the debate here quite substantially. There are those who believe that the fair use exceptions to copyright protection are not affirmative rights against the copyright holder, but instead the consequence of not being able efficiently to meter usage. Once that technical limitation is erased, then so too would the fair use rights be erased. The argument is described in Pamela Samuelson, *The Copyright Grab*, Wired 134 (Jan 1996). See also Trotter Hardy, *Property (and Copyright) in Cyberspace*, 1996 U. Chi. L. Forum 217, 233 (1996); Wendy J. Gordan, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessors*, 82 Colum. L. Rev. 1600, 1628 (1982). How they can be erased by contract is discussed in *ProCD v. Zeidenberg*, 86 F.3d 1447 (7th Cir. 1996). But on the opposite side of this debate are those who view the fair use right as an affirmative limitation on copyright protection. See generally Jessica D. Litman, *Copyright, Compromise, and Legislative History*, 72 Cornell L. Rev. 857 (1987). Julie Cohen's work here is most suggestive. See, e.g., Julie E. Cohen, *A Right to Read Anonymously: A Closer Look at Copyright Management in Cyberspace*, 28 Conn. L. Rev. 981 (1996). Her analysis suggests what we might call the Cohen Theorem: That there is a right to hack trusted systems regimes to preserve fair use rights.

The dissimilarity is this: With every contract that is enforced — with every agreement that subsequently calls upon an enforcer to carry out the terms of that agreement — there is a judgment made by the enforcer about whether this obligation should be enforced. In the main,[26] these judgments are made by a court. And when a court makes such judgments, the court considers not just the private orderings constituted in the agreement before it, but also issues of public policy, that can, in some contexts, override these private orderings. What a court does when it enforces the agreement is judge how far the power of the court can be used to carry out the agreement. Sometimes the agreement will be carried out in full; but often, the agreements cannot be carried out in full. Doctrines such as impossibility, or mistake will discharge certain obligations. Rules about remedy will limit the remedies the parties can seek. Public policy exceptions will condition the kinds of agreements that can be enforced. "Contracts" incorporate all these doctrines, and it is the mix of this set of public values, and private obligations, that together produce what we call "a contract."

When the code enforces agreements, or when the code carries out a self-imposed constraint, these public values are not necessarily weighed into the mix. Consequences that a court might resist imposing (forfeitures, for example), the code can impose without hesitation. The codewriter operates free of the implicit limitations of contract law. He or she can construct an alternative regime for enforcing voluntary constraints. And nothing requires or assures that this alternative regime will comport with the values of the regime we call "contract."[27]

This is not, of course, to criticize the self-imposed constraints of code necessarily. Most of these constraints are, no doubt, harmless; and most would most likely be enforceable if translated into real contracts.

But it *is* to resist the opposite implication — that if these obligations are "like" contract, then they are as immune from question as an equivalent real space structure constituted by contract would be immune from question. The point is to resist the implication that these structures are necessarily benign, just because an analo-

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[26] For of course there is an important exception here that I have not yet worked through — arbitration agreements, and ADR.

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gous real space structure of obligations imposed through contract would be benign.

For again, in real space, one might well believe that a set of obligations imposed through contract was untroubling. Conditioned by antitrust law, limited by principles of equity, cabined by doctrines of mistake and excuse — whatever constraints these contracts would effect in real space would be checked, by a court, before the constraints were made effective. When intervening to enforce such obligations, a court would carry with it the collection of tools that contract law has developed to modify, or soften, the obligations that contract might enforce.

The cyberspace analog has no such equivalent toolbox. Its obligations are not conditioned by the public values that contract embraces. Its obligations instead flow automatically from the structures imposed in the code. These structures serve the private ends of the code writer; they are a private version of contract law. But as the realists spent a generation teaching, and as we seem so keen to forget: Contract law is *public* law. "Private contract public law" is oxymoronic.

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Both examples I suggest present a similar point. In both, there is a shift from a structure of constraint regulated by law, to a structure of constraint regulated by code. In this shift, something is lost: In the context of intellectual property, what is lost is a structure of public use built into the protection of that property. In the context of contract, what is lost are the public values that might check the enforcement of obligations. The code architectures that I have describe are not perfect substitutes for the law structures that they replace: No doubt in some ways they are more efficient, but plainly in others, they give something up.

What they give up in both contexts is a public value that law ordinarily imposes on private orderings. And it makes sense then that to the extent the code permits the development of these structures of private ordering, these structures won't replicate these public values. Something else must replicate these public values. Something like, for example, a public authority.

It is here that most who think about cyberspace seem to get off the boat. For most who speak about the regulatory power of code seem to believe that there is little government can, or will, or

should, do about this regulatory power of code. Code, these writers suggest, is a form of law; but government can do little to regulate this form of law. Code will develop, and its development will regulate. But this regulation is inevitable, and government's helplessness about it unavoidable.

My aim in the last two sections of this essay is to suggest first just why as a positive claim, this claim is false — why, or how, that is, government can and will regulate cyberspace. In the last section, I then push a normative claim — that when we see the law in code, we see all the more reason why law must regulate code, if public values, in particular constitutional values, are to be preserved.

Regulations of Cyberspace

There is no doubt that government has tried to regulate cyberspace. State governments in particular have launched into this new field with a wide range of regulations, both of speech, and behavior (a distinction which in this medium is not easily maintained). Most of these regulations have had a particular form: The law orders people to behave in a certain way; it threatens that if they don't behave in that way, they will be punished; and then, with some relatively small frequency, the governments punish those who disobey.

The examples are many, and growing: Harassing speech is banished is a number of states; anonymous speech in others. The list of state interventions into net behavior is long and growing, and on the whole, quite absurd.[28]

In the main, however, these are direct regulations of cyberspace behavior, in the sense that I described it above. It is government trying to affect behavior, by threatening punishment ex post. It is old style regulation moved to cyberspace. It is regulatory thinking stuck in a rut.

However common such regulation maybe at the moment, in my view, this is not the model of regulation to come. Very little of the regulation of cyberspace will be direct regulation in this sense. Instead, the model to come is indirect regulation. And already, the examples are many.

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[28] See the catalog in *The First Amendment and the Media 1997* (Media Institute, Richard T. Kaplar, ed. 1997).

In this section, I describe four. They together sketch a pattern of regulation that is general, and growing, and that raise a distinct set of questions for constitutional law. Some of these questions I consider in the last section of this essay.

(1) Digital Telephone Networks: The first example is Congress' recent Digital Telephony Act.[29] As telephone networks have moved from analog to digital, and as switching technologies have moved from central switching to distributed, this change (in the code regulating networks) has had an important consequence for law enforcement. No longer is there a predictable path through which a telephone call will pass, and hence no longer is it an easy matter to tap a phones on a digitally switched network. Whereas before this switch in telephone architecture, tapping telephones was relatively simple; after this switch in network architecture, tapping is quite difficult.

This is so, at least, with *one version* of the architecture of a digitally switched telephone network. *Other* versions of that architecture would be less difficult to tap. Other architectures of telephone networks could be designed, that is, that make them "wire-tap accessible." The difference is simply a choice of code. Of course, some codes cost more than others. And some codes protect values of privacy better than others. So the choice among codes is obviously a choice among values. The question Congress addressed was whether this choice should be solely private (made by telephone engineers) or partially public (influenced as well by Congress).

Of course Congress could always compensate for any change in telephone code, by increasing, or decreasing, the punishment threatened. That is, if a change in architecture made it more difficult to catch criminals, Congress could simply increase the threatened punishment, or increase resources to investigation, as a way to increase the expected punishment, changes in network architecture notwithstanding. This is the model of change, for example, that Richard Posner points to, when he suggests that one way to understand the increase in criminal punishments since the Warren Court is as a reaction to the increased constitutionalization of

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[29] P.L. No. 103-414, 108 Stat. 4279 (1994). See the discussion in Susan Freiwald, *Uncertain Privacy*, 69 So. Cal. L. Rev. 949 (1996).

criminal procedure.[30] The constitution, then, is like an exogenous constraint, which Congress must legislate subject to. If the protections of the constitution increase, then Congress must (the argument goes) compensate by increasing punishments.

But Congress has another tool to invoke, however, when the constraints of code increase. Congress can, that is, legislate to change the code. Congress can require, through law, that telephone companies adopt a code architecture that aids the government (by making the network wiretap accessible). And this is just what the Digital Telephony Act did.

The Digital Telephony Act required that telephone companies select a network architecture that facilitates wiretapping. It required, that is, a code that facilitated the government's objective of being able to tap when it had authority to tap. Its ultimate aim, no doubt, in adopting this architecture was to reduce crime; but it pursues this aim indirectly, by modifying the code that constrains individuals who might want to engage in crime. Digital networks are no longer efficient tools for criminal activity. And hence has the payoff from crime been reduced.

This is law regulating code. It is a regulation designed to reduce the constraints that code might create for law enforcement. Its indirect effect is therefore to improve law enforcement. But it does that by modifying possible code based constraints on law enforcement. It selects a code that distributes the burdens of code in a collectively valued way.[31]

(2) *Digital Audio Tape*: A CD recording is a digital recording. Like any digital recording, in principle , it can be copied perfectly.

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[30] See Richard A. Posner, *The Cost of Rights: Implications for Central and Eastern Europe - and for the United States*, 32 Tulsa L.J. 1 (1996).

[31] Now from an economic perspective, this kind of regulation makes sense if this is the cheapest means to some social end. Obviously, if the government simply mandated this change in architecture, it would be quite a cheap technique for the government. But what is interesting about the Act is that the government must pay for this change in architecture. The government is thus internalizing the costs of this architecture, and we might think about this as a useful technique to assure that in fact social value is increased by this type of regulatory technique. Put another way: The government is in a sense *taking* the regulatory power of the telephone network's code, and as is generally true with takings, it might make sense to require that this taking be funded by the government.

But before the advent of digital tapes, there was no medium onto which a digital CD could perfectly copied. To copy it onto an audio tape would be to make an analog recording of the digital file. Quality would be lost in the copy.

This imperfection in copying ability was a kind of protection for the CD producers. Real space code, as it were, constrained the ability of would be copyright thieves from copying the CD onto tape, and selling the tapes as substitutes. The tapes would be inferior substitutes, and this inferiority would keep a large enough public in the original CD market.

Digital Audio Technology threatened to change this balance. For DAT applied digital technology to tape, meaning that a tape could now be perfectly copied, or a digital recording on a CD could be perfectly copied on a tape. The fear was greatest for the tape, since one could buy one DAT tape, and make many copies of the tape, each with the same fidelity as the first. The code governing the copying of audio recordings changed, with the result that the implicit protections of the old code disappeared.

Congress could have responded to this change in any number of ways. It could have increased the penalty for illegal copying, using law to regulate this behavior directly, and using an increased sanction ex post as an extra support for law. Or alternatively, Congress could have funded a public ad campaign against the wrong of illegal copying, or funded programs in schools to teach the wrong in copying. Or alternatively, Congress could have taxed blank tapes, and then transferred the benefit to owners of copyrighted material.

Instead, Congress chose to regulate the code of digital reproduction. Congress required producers of digital recording devices to install in their system a chip that would monitor the copies of any particular tape made on that machine.[32] The chip would allow a limited number of personal copies. But if it detected multiple copies, then the quality of the recording would be degraded. Congress, in essence, required that the code of digital coping be modified, to

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[32]See Audio Home Recording Act, 17 U.S.C. §1002 (1994) (describing the Serial Copy Management System). See also United States Department of Commerce, Intellectual Property and the National Information Infrastructure: Report of the Working Group on Intellectual Property Rights 179 (1995).

build back into the code something of the imperfections that real space code had "naturally."

This too is Congress regulating code, as a means to regulating behavior — mandating that multiple copies not be perfect copies, as a way to minimize the behavior of illegal copying.

(3) *The V-Chip:* A third example is closer to cyberspace. This is a regulation made part of the Telecommunications Act of 1996, to require the television industry to develop and implement the "V-chip." The V-chip is to facilitate a kind of automatic blocking of television broadcasts, based upon yet to be determined criteria of content. The crudest forms imagined adopt something like the MPAA's movie rating system; the more sophisticated envision selections based upon a much richer set of factors.

The legislation was in response to the perception that violence on television had increased quite dramatically, and that this increase in violence was harmful to kids. The concern was that this violence would affect behavior. Studies had suggested as much; less reflective evidence had confirmed it. Congress sought to shut the violence down, by providing a way to filter it out.

Given the state of first amendment law, it would have been quite difficult for congress to legislate to this end directly. Though the regulation of broadcasting has been subject to special first amendment rules, the life of these doctrines seems now limited. Even if limited to children's television alone, such regulation would raise difficult constitutional questions, if Congress, say, attempted to limit, or ban, violence from television.

Thus Congress chose an indirect means. Congress directed television manufacturers and media producers to develop a technology to rate what is broadcast on television, so that individuals at home can choose to block what they don't want to see. In the most obvious sense imaginable, this is an indirect regulation through code. It says that televisions must have built in a code that facilitates discrimination on the part of consumers of television broadcasting. And it does this to advance the aim of the government — that parents be empowered to discriminate.

All three examples share a common pattern; they all occur in a similar context. They are regulations of code, through *regulation*, in a context where the subjects of regulation are relatively few, and big. The penalty provisions of these acts are not severe. But neither

need they be to achieve their end. The television industry, the audio recording industry, and the telephone industry, are heavily regulated industries that are all quite responsive to regulation.

This feature is important when considering the conditions within which the regulation of code will work. They are distinct from a fourth example, to which I will now turn.

The Law in Code: Regulations of Speech

I've argued so far that we should think about regulation as a function of four sorts of constraints; that law is just one of these constraints. We should think of these multiple modalities both in real space and in cyberspace; and that the modalities will function in similar ways in both contexts.

The examples that I've sketched suggest, however, an important difference between these two contexts. The difference may be just a difference in proportion, but it is of such a great degree as to mark a difference in kind. While in real space, most regulation is regulation by law, my claim is that in cyberspace, most regulation will be regulation by code.

As a positive claim, this is hardly controversial. Again, the examples I've sketched are just the beginning. But now I want to make a somewhat more controversial claim: Not just that this kind of regulation is inevitable, but that it should be embraced. My claim is that we should develop and encourage the regulations of code, if we are to preserve public or constitutional values in cyberspace.

I want to make this argument in the context of a particular dispute. The question is how speech will be regulated in cyberspace. This debate reveals perhaps better than any other the blindness of our inherited tradition of constitutional law. It shows us more clearly than any other just how much constitutional law must change.

We can see the point by considering again the debate about the CDA, and more importantly, by considering the alternatives to the CDA that its opponents have proposed. My claim is that from a free speech perspective, the real danger comes not from the CDA, but from these alternatives. Yet we don't see these alternatives as dangerous because we have not yet come to see code as law.

Recall the structure of the CDA: As I argued, it is a code regulation that, for a certain class of regulable speech, bids cyberspace to build into its architecture the facility to discriminate on the basis of age. CDA's mistake was to speak too broadly about the class of speech that it would regulate. But imagine it reached more narrowly: If it focused just on commercial porn, and imposed the very same regulatory structure to that end.

Plainly, of course, the architecture that Congress would impose expresses or manifests a given set of values. It embraces discrimination, for a certain end of exclusion. It is a technology for filtering on the basis of age; it requires verification of at least that one aspect of who an individual is; it requires a technology that knows (to some reasonable degree of accuracy) how old I am.

The alternatives to the CDA (trumpeted by CDT and others as speech enhancing technologies) function differently. They are, essentially, of two sorts, though the first may best be considered as transitional to the second.

The first is blocking software — systems like SurfWatch, or CyberSitter, that rely upon lists of blocked sites distributed by companies through proprietary software. The criteria for blocking is varied, though the sites blocked are essentially secret. In some cases, gay rights activists sites have been blocked; in other cases, health sites have been blocked. But again, because the blocked lists are secret, one can never know.

This system has been praised because it is said that the decision to block is made at the individual level. This, it seems to me, is small praise for this extraordinary system of control, especially given its costs: First, and again, the application of the criteria to particular sites is private, and unreviewed, so we (the public) has little way to know what the tilt will be that this privatized system will effect. Second, the costs of this system are quite significant for the individual. Each home that wants to block access must purchase a software to enable this blocking, and then pay for periodic updates of the site list. The cost of such software ranges from $25-$80; and the updates will cost something as well. So the burden of blocking is being borne by the individual users, rather than by those sites that have material legitimately blocked.

Most troubling, however, is the breadth of speech that this blocking enables. For again, nothing limits the companies in the lists of stuff they filter; not just sexually explicit speech, but say,

"controversy", could be the criteria for exclusion. Nothing, that is, assures that the blocking is targeted to this one category of speech. And hence we should expect that the effective blocking will be much broader than this.

A second architecture, also advanced as an alternative to the CDA, carries this filtering system one step further. This is the system called PICS.[33] PICS is a standard for labeling content on the Web. It works like this. Sites that are PICS compatible structure their content such that they, or others, can rate the material on their site. These ratings can be about anything; they are not limited in their reach to just porn, or indecency. They can include, for example, political judgments, or cultural judgments. They can block, in principle, for any reason at all.

But since the blocking or labeling of a site itself is quite cumbersome, the assumption behind PICS is that the rating, or filtering, will be done elsewhere. It will be done, that is, by third party rating organizations. The system would work like this: You, with your browser, would select one or a few filters from a list of rating agencies. These could be ideological rating agencies (ACLU, the Christian Right), or more neutral rating agencies (MPAA, Consumer Reports). When you tried to access a site, the browser would check with the rating agency to see whether the site complied with the agency's list. If it did, you get in; if it doesn't, you don't.

The advantage to PICS over the SurfWatch system is that lists need not be distributed; the lists are checked dynamically. And because it is a generalized standard for filtering, the system encourages a broad range of raters. If most systems become PICS enabled, then the opportunities for rating, and the return, increase. And (to be wonderfully Chicago about it) if the return increases, then the supply of filters will increase as well.

The assumption behind most who promote PICS is that the filters get selected at the individual user's level. This makes it look quite benign: So described, it is imagined to be simply a very rich filtering system, designed, and selected, by the individual to implement individual preferences. PICS enables, on this assumption, a kind of electronic butler, who checks what there is, and asks the non-compliant to move on.

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[33] See <http://www.w3.org/pub/WWW/PICS/>.

But I don't think PICS is remotely benign. Indeed, from a free speech perspective, PICS is the devil. There is nothing in the PICS architecture that requires that filtering be done only at the user's level, and this is the key to the free speech problem. There is nothing, that is, that requires that it not be done at the corporate, or server, or country level instead. Indeed, one of the main forces behind the PICS standard are corporations, which very much want the ability to filter what their employees get access to. But this urge to censor will not be limited to the corporation. In countries where there is the will, and where the constitution does not block the way, as it becomes easier to filter at the national level, we might expect that filtering at the national level will increase. To the extent then that PICS reduces the cost of national filtering, it will increase the quantity of national filtering.

This is a consequence of the architecture of PICS. And it should lead us to evaluate the free speech consequences from each of the three architectures for filtering. For they embrace three different normative visions for cyberspace. One (the CDA) very narrowly targets a kind of speech (which can constitutionally be regulated); it effects its policy by requiring that access to this speech be blocked unless one can verify one's age. The second two are not so narrow. They in principle block speech quite broadly, and block on any number of criteria. The market for blocking software suggests a relatively limited range of competition among filtering systems; PICS enables a much broader range. But both are architectures that facilitate ex ante filtering of speech based on content.

Which of these three visions best advances our constitutional values? That should be our question. And we should be asking this question, whether or not the particular architecture is given to us by government. For even if a particular architecture is not given to us by government, it is also not given to us by god. These architectures are man made; they are the product of choice. And whether private choice or collective choice, a collective judgment should be made about them: Do they advance the public value of free speech?

Now it seems plain to me that both from a national and international level, PICS is a greater threat to free speech than is the CDA. A fully PICS enabled world, that is, will be a world with more censorship of speech than a fully CDA enabled world. And yet, because our attention is so narrowly focused on governments regulating speech, and because we are blind to the sense in which code regulates speech, most of the passion about censorship on the

net has been passion directed against CDA, and in favor of PICS. CDA is government, and therefore bad; PICS is private, and therefore good.

This thinking just strikes me as bizarre — the product of mindlessly continuing battles of the old world in the new, the product of believing that there is no real difference between the old and the new, the product of treating any attempt to think systematically about how this new world might different from the old as the attempt to construct a law of the horse. In these final few pages, then, I want to sketch the argument that this old way of thinking too easily misses.

The argument that PICS is more dangerous to free speech values is quite straight forward. Consider the international perspective first: PICS lowers the cost of national filtering, by pushing the net to a protocol that enables filtering, and by not inhibiting this filtering at the national level. PICS pushes a standard for labeling all speech — as if those UPC Bar Codes on all commercial products were likewise stamped on all internet speech. Once the standard is set, however, the codes can be used to any end. And so countries that are now facing quite difficult choices about whether to open themselves to the net or not (since they fear the free speech that now exists on the net) will face much easier choices: They can select those parts of the net they want their citizens to have access to, and restrict the parts they don't. The net of this is that at the international level, this increased facility to filter will result in greater censorship of speech.

From the national level, the argument is a bit more complex. Again, in America, it is quite obvious that governments can't impose PICS filters at the national level, save perhaps to filter out plainly illegal speech (obscenity, child porn). But governmental censorship is not the only concern from a first amendment perspective. There is another tradition, muted no doubt but present nonetheless, that is concerned not with governmental censorship, but with government facilitating efficient filtering by citizens.

The argument goes like this: There is a free speech value, this view holds, to the imperfection in filtering that the existing free speech market has. The value is that individuals are exposed to ideas that they otherwise would not, ex ante, choose to see. Call it

Madisonian,[34] or Fissian,[35] or Postian[36] — this tradition is anxious when structures enable individuals perfectly to select what they will consider and what they will ignore.

This is not to say that there is something evil about the right to change channels. But changing channels is not ex ante filtering. When one changes channels, one first sees something that one then decides not to watch. One is exposed, and then moves on. But perfect systems of ex ante filtering, like the perfect butler, spare one this imposition. They spare one the cost of seeing what one most likely doesn't want to see, and so they avoid the change that tripping upon something unexpected might create. And in this, they may undermine the diversity that a free society might require.

The problem here runs deep, and I don't think we understand its implications just yet. The extreme case is represented by a technology called Firefly.[37] Firefly asks you a series of questions about books, or movies, or people, and then after you've revealed enough of your preferences, it will automatically select other items for you to see. You never articulate the standard to be applied (thus the system is less reflective than even PICS); the standard is implicit in your behavior, and the system supplies you according to this implicit standard.

The problem with systems like this is their perfection. The problem is that they permit people to tune out. And while there is nothing to say that people will of necessity tune out — my argument is not a priori — the point is to identify the possibility, and develop ways to resist it if in fact the consequence of this filtering technology is just this. We need a way, collectively, to address the

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[34] See Cass R. Sunstein, Democracy and the Problem of Free Speech (1993).

[35] Owen M. Fiss, The Irony of Free Speech (1996).

[36] See Robert Post, Constitutional Domains: Democracy, Community, Management (1995). Post is most concerned with structures of social life (social norms) that might interfere with a space for democratic thought, and in particular with the efforts by government to support, or reinforce, these constraints. But his concern strikes me as more general than just about government, and his analysis easily supports a broader view.

[37] See <www.firefly.com>.

collective consequence of a technology that changes us fundamentally. Yet our present, government focused, technology blind, rhetoric gives us no such voice.

For here is the affirmative argument for government's regulation of code: Only the government can press the values that get expressed only by or through it. As the examples of intellectual property and contract suggest, the invisible hand of codewriters (nice image, that) may well yield a structure of regulation that is inconsistent with some public values. Government can, however, intervene to induce the codewriters to build into this code structures that preserve these values. PICS, for example, could be tied to an architecture that inhibited its use for reasons inconsistent with our conception of free speech. The government's role should be to push the architecture of PICS in just this direction.

My argument therefore is not against the technology; it is against an implementation of the technology that is inconsistent with our public values. It is not an argument against the gun; it is an argument against guns without safety latches; it is not an argument against the car; it is an argument against cars without seatbelts. We can't avoid the regulatory power of code; but that doesn't mean there is no place for regulation of the code. Indeed, to the extent that code becomes a dominant sovereign power, it means that there is all the more reason to push to regulate code, if public values in law are to be preserved. We should push code to embrace our values, and resist code that does not.

CONCLUSION

There is no way to understand a new space without likening it to the old. How else do we see that it is new? How else do we understand that it is different? But in likening it to the old, we must be careful to draw lines — to contrast as well as compare; to mark differences as well as similarities.

My argument about cyberspace comes down to this: That while there are similarities between the regulations of real space and the regulations of cyberspace, these similarities hide important differences. Copyrights management systems are not the same as copyright law; code contracts are not contracts; a PICS enabled world is not this world; real space code is something less than cyberspace code. The differences here come from the regulatory power of code. Code is a kind of sovereign — in the sense that Foucault, if not Austin, would have understood. My argument has

been that we should take seriously the regulatory power of this cyberspace code, if we are to preserve the values of real space there.

Our way of thinking about regulation just now, and the scope of our thinking about the constitution, leaves little space for this point. But this is a point that we need to get quite quickly. As the net grows, as its regulatory power increases, as its power as a source of norms becomes established, real space sovereigns lose. In many cases, we might think that a good thing. But we can't think it a good thing generally. There is nothing to guarantee that the regime of code will be a liberal regime; and little reason to expect an invisible hand of codewriters to push it in that way.