

Code and the Commons

Lawrence Lessig[†]
Draft 2

Keynote, given at a conference on
Media Convergence
Fordham Law School
New York, NY
February 9, 1999

[†] Jack N. and Lillian R. Berkman Professor for Entrepreneurial Legal Studies, Harvard Law School.

I want to take an idea from the north, and an idea from the south, and see how well they might hang together. An idea from the north — from here, at Fordham — and an idea from the south — all they way down at NYU — and ask, can we make them converge?

First from the south: We live in a property obsessed era — a time when we've come to believe that all progress, at root, comes from its alignment with property. This is not a southern idea — this is a distinctly mid-western (call it a Chicago) idea — but it is an idea that has overwhelmed our time. We ride high on a post-cold war triumph, convinced that the ills of communism would be remedied if only they would privatize everything; never pausing to notice that when they did, the problems were not.

But there's a competing tradition, even within our own tradition, not against property, but for a certain balance in property. There must be private property no doubt; and in some cases there should also be state property. But the strong balance to private property is not state property; the strong balance is the *commons*. This is the idea we are being reminded of from the south, by NYU Law Professor Yochai Benkler in particular, but of course by others as well. We are being reminded of the place the commons has had in our past, and of the urgency that we preserve its place in our future.

The commons: There's a part of our world, here and now, that we all get to enjoy without the permission of any:

Central park is a commons: an extraordinary resource of peacefulness in the center of a city that is anything but; an escape, and refuge, that anyone can take (take, or use) without the permission of anyone else.

The public streets are a commons: on no one's schedule but your own, you can enter the public streets, and go in any direction you wish. There is no schedule for access between Broadway and 52d street; at anytime, without anyone's permission, you can simply turn.

Fermat's last theorem is a commons: a challenge that anyone could pick up; a challenge that Andrew Wiles picked up, and which in the early 1990s, he thought he had solved; till he posted it on the net, and people on the net themselves picked it up; and

played with it, and showed Wiles that he was wrong; and then they played with it some more, and then suggested how it could be made right, and he then made it right, and after 350 years, the proof was complete.

The internet is a commons: the space that anyone can enter, and take what she finds without the permission of a librarian, or a promise to pay. The net is built on a commons — the code of the world wide web, html, is a computer language that lays itself open for anyone to see — to see, and to steal, and to use as one wants. If you like a web page, then all major browsers permit you to reveal its source, download it, and change it as you wish. It's out there for the taking; and what you take leaves as much for me as there was before.

Open source software is a commons: the source code of at least part of Linux, for example, lies open for the taking on any number of servers. Anyone can download the code; anyone can try her hand at improving it. No permission is necessary; no authorization may be required.

These examples of the commons that we all know give a sense of what in essence the commons is. The point is not that there is no regulation of access or use; the park can be closed, and sometimes a street is blocked. Ordinary low level, content and viewpoint neutral regulations are allowed. But what is not allowed is that access to this property, that access to the commons, be conditioned upon the will of anyone else. If a commons is not open for others to take without the permission of someone, it has lost the essence of being a commons.

Now I list in tedious detail these examples of the commons, because our most likely association with the notion of the commons is the idea of tragedy. The tragedy of the commons — another idea that comes to us from the south — is the lesson we most likely to remember about the commons. The problem with the commons is that there is no incentive for individuals to use it properly. Create a commons, and people will overgraze it. The commons cannot sustain itself; it, like a tragedy, is destined to die some horrible death. And hence rather than surrounding ourselves with these horrible deaths, why not simply move quickly to the world where tragedy is not so common. What would it be — if not the tragedy of the commons then the comedy of private property?

But careless thought here is likely to carry this notion of tragedy too far. For again, if commons face such an inevitable tragedy, how is it that we have so many around us? If tragedy is its destiny, how is it that Linux can flourish?

I don't want to answer that question. Alas, it is too hard for me. But I do want to raise a question that Benkler types are increasingly pushing. Can we imagine a world where these commons were taken away?

Just think about the details of this world for a minute. Benkler asks, what if the city decided that sidewalks are a public resource that it could auction to raise cash. Everyone would have the right to the sidewalk just at the entrance to their house, but every other access right to sidewalks would be auctioned to the highest bidder. It's hard to imagine, I know, but leap a bit with me here: You might buy the right to sidewalks on 5th Avenue, or Bleeker; but you wouldn't have the right to Wall Street. Or you might have the right to Wall Street in the morning, but not in the evening. Or Bleeker on weekends, but not during the week.

Whatever rights you have, however, are rights you have secured. For the key idea here is that you have access only when you have secured permission for access. An auction is one way to get permission. You buy permissions like you used to buy E tickets at Disney World. Or we could imagine permission licensed by the state — allocated according to some view of the public interest, or to some idea about how the public might best be served. In either case, the core is the same: Access is granted, not guaranteed; one gets access only with permission of someone else.

Now this would be an odd world. Perhaps it would be a world without deficits, for one imagines the state would get lots of money from these auctions. But it would be a world wholly foreign to the world we know. So foreign, and so impossible to imagine creating, that it is easy for us simply to ignore the hypo. To fight the hypothetical. Come down Professor Benkler; you're living in the clouds.

Enter our idea from the north. At a conference at Emory (I know, it's the south, but I'll get back quite soon), a then-assistant professor Joel Reidenberg told the audience about a new kind of regulator — a new type of regulation, that was both more efficient and more pervasive than government. He called this regulator *Lex*

Informatica, but when I heard it, I couldn't quite spell informatica, so I called it code.

The idea of *Lex Informatica*, or code, is this: That what makes cyberspace so different is that it is constituted by these laws of nature that we write. What defines the experience that cyberspace is is a set of instructions written into code that we, or more precisely, code writers, have authored. This code sets the rules of this space; it regulates behavior in this space; it determines what's possible here, and what's not possible. And as we look to this code maturing, Reidenberg rightly saw that this code would become its own type of law. That we could define life in cyberspace as we wanted — with privacy, or without; with anonymity or without; with universal access, or without; with the freedom to speak and publish, or without — and then write what we wanted into the code. The code would then regulate life there. And that regulation through code Reidenberg called Lex Informatica.

It's almost four years since Reidenberg first started talking about this form of law, and we are just on the cusp of a time when others can begin to get the point he saw then. For as the code of cyberspace is maturing, we are beginning to see just how radically different the world can be. And we are beginning to see how important it will be for us to take a hand in this construction. For there is any number of worlds that this great convergence could create; and we should be certain that the world it creates is a world that we want.

In the few minutes remaining here, I want to think about this question of *Lex Informatica* in relation to the ideal of the commons. For when we put these two ideas together — the idea of the commons, and this notion of a world built through code — we will see that Benkler's impossibility — the impossibility of imagining a world without a commons — is Reidenberg's reality — the reality of a law that could define the commons away as easily as it could define the commons into existence. We will see that the future of cyberspace could be either a world with a commons, or a world without it. And that it is important that we choose which world cyberspace will become.

Let me put my cards on the table here. I am wildly in Benkler's camp. I think that the commons is critical to a well functioning liberal society. And I am wildly under Reidenberg's influence. I think the threat to the commons in a world constituted by code is fundamental. So I want to sketch here just two arguments, and

one hint, about how taking the commons seriously might interact with the culture that is emerging on the net.

There are two places where the convergence of media in cyberspace presents problems for this intersection of the commons and code. One is the context of intellectual property (IP) ; the second is the context of broadcasting, or spectrum allocation. In real space, these two worlds have different conceptions of the commons.

IP, in real space, embraces the commons fundamentally. Copyright terms are limited, fair use is rich, ideas can't be copyrighted — all these combine to create a world where intellectual property becomes a part of a cultural commons. The frictions of real space law make it very hard to perfectly control the development and use of this real space commons. I might have to buy the book, but once I buy it, in large measure, my use of it, and its ideas (with proper attribution of course), is my own.

Broadcasting, in real space, rejects the idea of the commons. Except for weird public access channels, individuals in real space have no real access to television broadcasting resources. Even if you buy the equipment, you can't start televising the activities in your living room unless you have the permission of a governmental agency — the FCC. Or increasingly, unless you have purchased the right at an auction.

A certain necessity in real space seems to make this so. It would be too hard to perfectly control IP in real space — the frictions of real space guarantee this. And it would be too difficult (the Supreme Court said impossible) to imagine a commons in broadcasting. Signals would conflict; the medium would be destroyed. And so the mix of commons in each seems determined — determined by factors beyond our control.

But this mix is not fixed in cyberspace. Indeed, we are increasingly seeing the development of code that will make it possible to perfectly control the use of IP in cyberspace. Researchers, such as Mark Stefik of Xerox PARC, are developing technologies that will make it possible for an owner of IP to sell any right that owner wants to sell, and control perfectly the use of that IP to ensure its use is consistent with that sale. Want to buy the right to read a book once, that's one price. Twice, a different price. Want the right to cut sections from the book, a third price. The right to make a copy, a fourth price. And these technologies

— what Stefik calls “trusted systems” x — are being supplemented with an absurdly naïve race in contract law to find ways to allow owners of IP to add further rights to their collection through the use of shrinkwrap licenses. The code, and the law, then, is moving to a place where the owner gets to control the use of IP perfectly.

Now this change, taken to an extreme, would destroy a commons in IP. Copyright would not expire; IP would not fall into the public domain; fair use would not be guaranteed because the code could essentially eliminate it. The world of IP would move to a world of perfect property. *Lex Informatica* would construct IP without the commons.

Meanwhile, a very different change is happening in the context of broadcasting.

Broadcasting rights in the United States are, in essence, controlled just as they were controlled in 1927. In 1927, Congress passed the Radio Act. The Radio Act gave the government the right to allocate spectrum to broadcasters. This initial allocation was by a system of licensing — licensing both equipment and its use, so in effect licensing spectrum. This licensing was to be under a public interest standard, and it was this public interest standard that attracted the most vicious criticism. There was no need to allocate spectrum using licenses, economists such as Coase argued. It would be much more efficient simply to auction licenses. By propertizing the radio waves, we could assure that this property was devoted to its highest and best use. And no governmental agency would be hanging around waiting to revoke someone’s license because they had angered some bureaucrat.

But the technology of broadcasting has not stood still since 1927. Instead there has been an extraordinary change — of degree no doubt, but at some point of kind — in the available technologies of broadcasting. This is the emergence of technologies such as spread spectrum. With spread spectrum technologies, spectrum would not need to be allocated, in the sense of giving one person an exclusive right to the detriment of all others. With spread spectrum, broad swaths of the radio spectrum could be available for any to use, so long as they were using an approved broadcasting device. Spectrum would become a commons, and its use would be limited to those who had the proper, or licensed, equipment.

The details of this technology are complicated, and I fortunately don't have time to sketch them here and thereby, reveal that they are too complicated for me. But the important thing is to see how they enable this commons.

Compare transportation: When you have railroads it makes sense that someone allocate the right to use a bit of railroad track at a given time. The centralized coordinating system is in a sense necessary. And no doubt one might improve on that coordination, by selling or auctioning the right to certain track at certain times. But in a world of highways, or sidewalks, or parks, it makes no sense at all to construct a governmental agency to allocate the right to use the roads. The government might well inspect cars, to make sure they are safe and don't pose risks to others. But beyond inspecting the equipment, the government has no business controlling access. Once the roads are open, anyone should be allowed to use them to go wherever they want to go today.

Spectrum could be the same. Just as with the internet today, anyone in essence could become a broadcaster, because the system would coordinate this broadcasting. Allocation decisions would get coded into the lex of transmitters. Smart transmitters would then replace the FCC's allocation.

Thus in the one case — IP — the emerging code is undermining the commons in IP; in the other case — broadcasting — the emerging code is making a commons possible. Code then seems neutral between the commons and private property; code could enable either.

But the lesson we need to see is that our tradition is not neutral. We may not have had the opportunity before to architect away the commons fully; we might now for the first time have that chance. But it is not the case that our tradition supported the commons merely because it was necessary. Indeed, I suggest that the first amendment expresses a very strong bias on this question: Between an architecture of speech that allocates the right to speak to those who hold licenses, and an architecture of speech that allocates the right to speak to anyone, our tradition favors anyone. And between an architecture of IP that gives holders of IP a perpetual right to control their expression, and an architecture of IP that gives holders an exclusive right "for a limited time," our tradition favors a limited time. In the context of speech, in a world where we can select among the architectures of speech, the values of universality and equality demand the preservation of a

commons. In the context of IP, we give property rights to create sufficient incentives so people will produce; but once those incentives are created, what they produce becomes part of the commons. And in the context of broadcasting, we give licenses only where necessity demands. When that necessity abates, we should return the right to speak to the world the framers knew — where just about anyone could become a publisher, and express whatever views they wished. In neither context is it our tradition to give over complete control to another. In both contexts, it is our tradition to leave as much as possible within the commons.

Those are the ideas in the context of free speech. I promised a hint about antitrust.

For it seems to me that the same question gets raised in the context of antitrust in cyberspace. Again, the point is not that private property is theft. The point is not an extreme. The point instead is a point about balance — a balance between the open and the closed, between the parks and back yards, between the streets and driveways. The balance is between one part in the commons, and one part held privately. And the challenge for antitrust is to imagine the analog to those parts in real space that we insist must remain the public. When the OS defines our world, as Reidenberg reminds us, what are the constraints of the commons that should operate with that OS?

These questions demand an answer.

These choices about a balance between the private and the commons require a choice. The invisible hand will not take us there. Indeed, the invisible hand is more likely to take us in precisely the opposite direction. To a world where the commons is erased either through code with IP, or through law, with broadcasting.

But though collective judgment is needed, we are peculiarly disabled from making collective choice. We shun the idea of government doing anything. We embrace the idea of privatizing everything away from government.

At a conference in Georgia — former Soviet Georgia, that is — sponsored by some western agency of Democracy, an Irish lawyer was trying to explain to the Georgians just what was so great about a system of judicial review. “Judicial review,” this lawyer explained, “is wonderful. Whenever the court strikes down an act

of parliament, the people naturally align themselves with the court, against the parliament. The parliament, people believe, is just political; the Supreme Court, they think, represents principle.” A Georgian friend was puzzled by this response, puppy-democrat that he is. “So why,” he asked, “is it that in a Democracy, the people are loyal to the court, a non-democratic institution, and repulsed by parliament, a democratic institution?” Said the lawyer: “You just don’t understand democracy.”

We are like the Irish — though maybe worse, because I don’t think we have the same faith in our court. But we are like the Irish in that we, too, indulge this self-indulgent anti-governmentalism. We have lost the ideal that there is a role for government here. We — especially we who spend too much of our life using electrons to interact. We are the children of David Lynch, who can’t help but believe that, just beneath the surface of the sensible, there is always decay. We listen to the promises of our governors no differently than Soviet citizens listened to the promises of their governors. We, like Soviet citizens, have heard it before. “Hope” is not a place; “Hope” was a television commercial.

This is pathology. When government steps aside, it is not as if nothing takes its place. When government disappears, it is not as if paradise prevails. It’s not as if private interests have no interests; as if private interests don’t have ends they will then pursue. To push the anti-government button is not to teleport us to Eden. When the interests of government are gone, other interests take their place. Do we know what those interests are? And are we so certain they are better?

As we cower, ostrich-like, to avoid making choices, this convergence is making the choices for us. For the problems of convergence are not technical. The technicians will give us anything we want. The problems of convergence are political — that we live in era when even to say there is a role for government, or a role for collective choice, is to open yourself to ridicule.

And so the ridiculous will learn to be silent. And the technicians will learn to supply what the invisible hand wants. And we will watch, or at least some of us will watch, as this tradition of our liberal past — this ideal of a commons where we need not live *Oliver Twist*-like, ever begging the powerful for permission to speak — will pass into the past.

That, I fear, is our future.