TEN

intellectual property

HAROLD REEVES IS AMONG THE BEST RESEARCH ASSISTANTS I HAVE HAD. (BUT ALAS, the law has now lost him—he's become a priest!). Early into his second year at the University of Chicago Law School, he came to me with an idea he had for a student "comment"—an article that would be published in the law review.[1] The topic was trespass law in cyberspace—whether and how the law should protect owners of space in cyberspace from the kinds of intrusions that trespass law protects against in real space. His initial idea was simple: There should be no trespass law in cyberspace.[2] The law should grant "owners" of space in cyberspace no legal protection against invasion; they should be forced to fend for themselves.

Reeves's idea was a bit nutty, and in the end, I think, wrong.[3] But it contained an insight that was quite brilliant, and that should be central to thinking about law in cyberspace.

The idea—much more briefly and much less elegantly than Reeves has put it—is this: The question that law should ask is, What means would bring about the most efficient set of protections for property interests in cyberspace? Two sorts of protections are possible. One is the traditional protection of law—the law defines a space where others should not enter and punishes people who enter nonetheless. The other protection is a fence, a technological device (a bit of code) that (among other things) blocks the unwanted from entering. In real space, of course, we have both—law, in the form of trespass law, and fences that supplement that law. Both cost money, and the return from each is not necessarily the same. From a social perspective, we would want the mix that provides optimal protection at the lowest cost. (In economics-speak, we would want a mix such that the marginal cost of an additional unit of protection is equivalent to the marginal benefit.)

The implication of this idea in real space is that it sometimes makes sense to shift the burden of protection to citizens rather than to the state. If, for example, a farmer wants to store some valuable seed on a remote part of his farm, it is better for him to bear the cost of fencing in the seed than to require the police to patrol the area more consistently or to increase the punishment for those they catch. The question is always one of balance between the costs and benefits of private protection and state protection.

Reeves's insight about cyberspace follows the same line. The optimal protection for spaces in cyberspace is a mix between public law and private fences. The question to ask in determining the mix is which protection, on the margin, costs less. Reeves argues that the costs of law in this context are extremely high—in part because of the costs of enforcement, but also because it is hard for the law to distinguish between legitimate and illegitimate uses of cyberspaces. There are many "agents" that might "use" the space of cyberspace. Web spiders, which gather data for web search engines; browsers, who are searching across the Net for stuff to see; hackers (of the good sort) who are testing the locks of spaces to see that they are locked; and hackers (of the bad sort) who are breaking and entering to steal. It is hard, ex ante, for the law to know which agent is using the space legitimately and which is not. Legitimacy depends on the intention of the person granting access.

So that led Reeves to his idea: Since the intent of the "owner" is so crucial here, and since the fences of cyberspace can be made to reflect that intent cheaply, it is best to put all the incentive on the owner to define access as he wishes. The right to browse should be the norm, and the burden to lock doors should be placed on the owner.[4]

Now put Reeves's argument aside, and think for a second about something that will seem completely different but is very much the same idea. Think about "theft" and the protections that we have against it.

- I have a stack of firewood behind my house. No one steals it. If I left my bike out overnight, it would be gone.
- A friend told me that, in a favorite beach town, the city used to find it impossible to plant flowers—they would immediately be picked. But now, he proudly reports, after a long "community spirit" campaign, the flowers are no longer picked.
- There are special laws about the theft of automobiles, planes, and boats. There are no special laws about the theft of skyscrapers. Cars, planes, and boats need protection. Skyscrapers pretty much take care of themselves.

Many things protect property against theft—differently. The market protects my firewood (it is cheaper to buy your own than it is to haul mine away); the market is a special threat to my bike (which if taken is easily sold). Norms sometimes protect flowers in a park; sometimes they do not. Nature sometimes conspires with thieves (cars, planes, and boats) and sometimes against them (skyscrapers).

These protections are not fixed. I could lock my bike and thereby use real-space code to make it harder to steal. There could be a shortage of firewood; demand would increase, making it harder to protect. Public campaigns about civic beauty might stop flower theft; selecting a distinctive flower might do the same. Sophisticated locks might make stolen cars useless; sophisticated bank fraud might make skyscrapers vulnerable. The point is not that protections are given, or unchangeable, but that they are multiplied and their modalities different.

Property is protected by the sum of the different protections that law, norms, the market, and real-space code yield. This is the implication of the argument made in Chapter 7. From the point of view of the state, we need law only when the other three modalities leave property vulnerable. From the point of view of the citizen, real-space code (such as locks) is needed when laws and norms alone do not protect enough. Understanding how property is protected means understanding how these different protections work together.

Reeves's idea and these reflections on firewood and skyscrapers point to the different ways that law might protect "property" and suggest the range of kinds of property that law might try to protect. They also invite a question that has been asked by Justice Stephen Breyer and many others: Should law protect some kinds of property—in particular, intellectual property—at all?[5]

Among the kinds of property law might protect, my focus in this chapter will be on the property protected by copyright.[6] Of all the different types of property, this type is said to be the most vulnerable to the changes that cyberspace will bring. Many believe that intellectual property cannot be protected in cyberspace. And in the terms that I've sketched, we can begin to see why one might think this, but we will soon see that this thought must be wrong.

ON THE REPORTS OF COPYRIGHT'S DEMISE

Roughly put, copyright gives a copyright holder certain exclusive rights over the work, including, most famously, the exclusive right to copy the work. I have a copyright in this book. That means, among other rights, and subject to some important exceptions, you cannot copy this book without my permission. The right is protected to the extent that laws (and norms) support it, and

it is threatened to the extent that technology makes it easy to copy. Strengthen the law while holding technology constant, and the right is stronger. Proliferate copying technology while holding the law constant, and the right is weaker.

In this sense, copyright has always been at war with technology. Before the printing press, there was not much need to protect an author's interest in his creative work. Copying was so expensive that nature itself protected that interest. But as the cost of copying decreased, and the spread of technologies for copying increased, the threat to the author's control increased. As each generation has delivered a technology better than the last, the ability of the copyright holder to protect her intellectual property has been weakened.

Until recently, the law's response to these changes has been measured and gradual. When technologies to record and reproduce sound emerged at the turn of the last century, composers were threatened by them. The law responded by giving composers a new, but limited, right to profit from recordings. When radio began broadcasting music, the composers were held to be entitled to compensation for the public performance of their work, but performers were not compensated for the "performance" of their recordings. Congress decided not to remedy that problem. When cable television started rebroadcasting television broadcasts, the copyright holders in the original broadcasts complained their work was being exploited without compensation. Congress responded by granting the copyright holders a new, but limited, right to profit from the rebroadcasts. When the VCR made it simple to record copyrighted content from off the air, copyright holders cried "piracy." Congress decided not to respond to that complaint. Sometimes the change in technology inspired Congress to create new rights, and sometimes not. But throughout this history, new technologies have been embraced as they have enabled the spread of culture.

During the same period, norms about copyrighted content also evolved. But the single, defining feature of these norms can perhaps be summarized like this: that a consumer could do with the copyrighted content that he legally owned anything he wanted to do, without ever triggering the law of copyright. This norm was true almost by definition until 1909, since before then, the law didn't regulate "copies." Any use the consumer made of copyrighted content was therefore highly unlikely to trigger any of the exclusive rights of copyright. After 1909, though the law technically regulated "copies," the technologies to make copies were broadly available. There was a struggle about Xerox machines, which forced a bit of reform,[7] but the first real conflict that copyright law had with consumers happened when cassette tapes made it easy to copy recorded music. Some of that copying was for the purpose of making a

"mixed tape," and some was simply for the purpose of avoiding the need to buy the original recording. After many years of debate, Congress decided not to legislate a ban on home taping. Instead, in the Audio Home Recording Act, Congress signaled fairly clear exemptions from copyright for such consumer activity. These changes reinforced the norm among consumers that they were legally free to do whatever they wanted with copyrighted work. Given the technologies most consumers had access to, the stuff they wanted to do either did not trigger copyright (e.g., resell their books to a used bookstore), or if it did, the law was modified to protect it (e.g., cassette tapes).

Against the background of these gradual changes in the law, along with the practical norm that, in the main, the law didn't reach consumers, the changes of digital technology were a considerable shock. First, from the perspective of technology, digital technologies, unlike their analog sister, enabled perfect copies of an original work. The return from copying was therefore greater. Second, also from the perspective of technology, the digital technology of the Internet enabled content to be freely (and effectively anonymously) distributed across the Internet. The availability of copies was therefore greater. Third, from the perspective of norms, consumers who had internalized the norm that they could do with "their content" whatever they wanted used these new digital tools to make "their content" available widely on the Internet. Companies such as Napster helped fuel this behavior, but the practice existed both before and after Napster. And fourth, from the perspective of law, because the base technology of the Internet didn't reveal anything about the nature of the content being shared on the Internet, or about who was doing the sharing, there was little the law could do to stop this massive "sharing" of content. Thus fifth, and from the perspective of copyright holders, digital technologies and the Internet were the perfect storm for their business model: If they made money by controlling the distribution of "copies" of copyrighted content, you could well understand why they viewed the Internet as a grave threat.

Very quickly, and quite early on, the content industry responded to this threat. Their first line of defense was a more aggressive regime of regulation. Because, the predictions of cyberspace mavens notwithstanding, not everyone was willing to concede that copyright law was dead. Intellectual property lawyers and interest groups pushed early on to have law shore up the protections of intellectual property that cyberspace seemed certain to erase.

LAW TO THE RESCUE

The initial response to this push was a White Paper produced by the Commerce Department in 1995. The paper outlined a series of modifications

aimed, it said, at restoring "balance" in intellectual property law. Entitled "Intellectual Property and the National Information Infrastructure," the report sought to restate existing intellectual property law in terms that anyone could understand, as well as to recommend changes in the law in response to the changes the Net would bring. But as scholars quickly pointed out, the first part was a bust.[8] The report no more "restated" existing law than Soviet historians "retold" stories of Stalin's administration. The restatement had a tilt, very definitely in the direction of increased intellectual property protection, but it pretended that its tilt was the natural lay of the land.

For our purposes, however, it is the recommendations that were most significant. The government proposed four responses to the threat presented by cyberspace. In the terms of Chapter 7, these responses should be familiar.

The first response was traditional. The government proposed changes in the law of copyright to "clarify" the rights that it was to protect.[9] These changes were intended to better define the rights granted under intellectual property law and to further support these rights with clarified (and possibly greater) legal penalties for their violation.

The second response addressed norms, specifically copying norms. The report recommended increased educational efforts, both in schools and among the general public, about the nature of intellectual property and the importance of protecting it. In the terms of Chapter 7, this is the use of law to change norms so that norms will better support the protection of intellectual property. It is an indirect regulation of behavior by direct regulation of norms.

The third and fourth responses mixed technology and the market. The report called for legal support—through financial subsidies and special legal protection—of "copyright management schemes." These "schemes" were simply technologies that would make it easier to control access to and use of copyrighted material. We will explore these "schemes" at some length later in this chapter, but I mention them now as another example of indirect regulation—using the market to subsidize the development of a certain software tool, and using law to regulate the properties of other software tools. Copyright management systems would be supported by government funding and by the threat of criminal sanctions for anyone deploying software to crack them.[10]

Congress followed the recommendations of the 1995 White Paper in some respects. The most important was the enactment of the Digital Millennium Copyright Act in 1998. That statute implemented directly the recommendation that "technological protection measures" be protected by law. Code that someone implements to control either access to or use of a copyrighted work got

special legal protection under the DMCA: Circumvention of that code, subject to a few important exceptions, constituted a violation of the law.

We will return to the DMCA later. The point just now, however, is to recognize something important about the presumption underlying the White Paper. The 1995 package of proposals was a scattershot of techniques—some changes in law, some support for changing norms, and lots of support for changing the code of cyberspace to make it better able to protect intellectual property. Perhaps nothing better than this could have been expected in 1995—the law promised a balance of responses to deal with the shifting balance brought on by cyberspace.

Balance is attractive, and moderation seems right. But something is missing from this approach. The White Paper proceeds as if the problem of protecting intellectual property in cyberspace was just like the problem of protecting intellectual property in real space. It proceeds as if the four constraints would operate in the same proportions as in real space, as if nothing fundamental had changed.

But something fundamental has changed: the role that code plays in the protection of intellectual property. Code can, and increasingly will, displace law as the primary defense of intellectual property in cyberspace. Private fences, not public law.

The White Paper did not see this. Built into its scattershot of ideas is one that is crucial to its approach but fundamentally incorrect—the idea that the nature of cyberspace is anarchy. The White Paper promises to strengthen law in every area it can. But it approaches the question like a ship battening down for a storm: Whatever happens, the threat to copyright is real, damage will be done, and the best we can do is ride it out.

This is fundamentally wrong. We are not entering a time when copyright is more threatened than it is in real space. We are instead entering a time when copyright is more effectively protected than at any time since Gutenberg. The power to regulate access to and use of copyrighted material is about to be perfected. Whatever the mavens of the mid-1990s may have thought, cyberspace is about to give holders of copyrighted property the biggest gift of protection they have ever known.

In such an age, the real question for law is not, how can law aid in that protection? but rather, is the protection too great? The mavens were right when they predicted that cyberspace will teach us that everything we thought about copyright was wrong.[11] But the lesson in the future will be that copyright is protected far too well. The problem will center not on copy-right but on copy-duty—the duty of owners of protected property to make that property accessible.

That's a big claim. To see it, however, and to see the consequences it entails, we need consider three examples. The first is a vision of a researcher from Xerox PARC (appropriately enough), Mark Stefik, and his idea of "trusted systems."[12] The second is an implication of a world dominated by trusted systems. The third is an unreckoned cost to the path we are now on to "protect intellectual property." The examples will throw into relief the threat that these changes present for values that our tradition considers fundamental. They should force us to make a choice about those values, and about their place in our future.

THE PROMISE FOR INTELLECTUAL PROPERTY IN CYBERSPACE

> *It all depends on whether you really understand the idea of trusted systems. If you don't understand them, then this whole approach to commerce and digital publishing is utterly unthinkable. If you do understand them, then it all follows easily.*
>
> Ralph Merkle, quoted in Stefik, "Letting Loose the Light" (1996)

In what we can call the first generation of digital technologies, content owners were unable to control who copied what. If you have a copy of a copyrighted photo rendered in a graphics file, you could make unlimited copies of that file with no effect on the original. When you make the one-hundredth copy, nothing would indicate that it was the one-hundredth copy rather than the first. And as we've described again and again, in the original code of the Internet, there was nothing to regulate how or to whom copyrighted content was distributed. The function of "copying" as it was developed by the coders who built it, either in computers or networks, aimed at "copying"—not at "copying" with specified permissions.

This character to the function "copy" was not unique to cyberspace. We have seen a technology that presented the same problem, and I've already described how a solution was subsequently built into the technology.[13] Digital Audio Tape (DAT) technology was thought to be a threat to copyright owners. A number of solutions to this threat were proposed. Some people argued for higher penalties for illegal copying of tapes (direct regulation by law). Some, such as Richard Stallman, argued for a tax on blank tapes, with the proceeds compensating copyright holders (indirect regulation of the market by law). Some argued for better education to stop illegal copies of tapes (indirect regulation of norms by law). But some argued for a change in the code of DAT machines that would block unlimited perfect copying.

The tax and code regulators won. In late 1992, as a compromise between the technology and content industries, Congress passed the Audio Home Recording Act. The act first imposed a tax on both recorders and blank DAT media, with the revenues to be used to compensate copyright holders for the expected copyright infringement enabled by the technology. But more interestingly, the Act required manufacturers of DAT technology to include a Serial Copy Management System, which would limit the ability of DAT technology to copy. That limit was effected through a code inserted in copies made using DAT technology. From an original, the technology would always permit a copy. But from a copy made on a DAT recorder, no further digital copy could be made. (An analog copy could be made, thus degrading the quality of the copy, but not a perfect digital copy.) The technology was thus designed to break the "copy" function under certain conditions, so as to indirectly protect copyright owners. The net effect of these two changes was to minimize any harm from the technology, as well as to limit the functionality of the technology where it would be expected that functionality would encourage the violation of copyright. (Many think the net effect of this regulation also killed DAT technology.)

Something like the same idea animated Stefik's vision.[14] He was not keen to make the quality of copies decrease. Rather, his objective was to make it possible to track and control the copies of digital content that are made.[15]

Think of the proposal like this. Today, when you buy a book, you may do any number of things with it. You can read it once or one hundred times. You can lend it to a friend. You can photocopy pages in it or scan it into your computer. You can burn it, use it as a paperweight, or sell it. You can store it on your shelf and never once open it.

Some of these things you can do because the law gives you the right to do them—you can sell the book, for example, because the copyright law explicitly limits the copyright owner's right to control your use of the physical book after the "first sale." Other things you can do because there is no effective way to stop you. A book seller might sell you the book at one price if you promise to read it once, and at a different price if you want to read it one hundred times, but there is no way for the seller to know whether you have obeyed the contract. In principle, the seller could sell a police officer with each book to follow you around and make sure you use the book as you promised, but the costs of this control would plainly exceed any benefit.

But what if each of these rights could be controlled, and each unbundled and sold separately? What if, that is, the software itself could regulate whether you read the book once or one hundred times; whether you could cut and paste from it or simply read it without copying; whether you could send it as

an attached document to a friend or simply keep it on your machine; whether you could delete it or not; whether you could use it in another work, for another purpose, or not; or whether you could simply have it on your shelf or have it and use it as well?

Stefik describes a network that makes such unbundling of rights possible. He describes an architecture that would allow owners of copyrighted materials to sell access to those materials on the terms they want and would enforce those contracts.

The details of the system are not important here (it builds on the encryption architecture I described in Chapter 4),[16] but its general idea is easy enough to describe. As the Net is now, basic functions like copying and access are crudely regulated in an all-or-nothing fashion. You generally have the right to copy or not, to gain access or not.

But a more sophisticated system of rights could be built into the Net—not into a different Net, but on top of the existing Net. This system would function by discriminating in the intercourse it has with other systems. A system that controlled access in this more fine-grained way would grant access to its resources only to another system that controlled access in the same way. A hierarchy of systems would develop, and copyrighted material would be traded only among systems that properly controlled access.

In such a world, then, you could get access, say, to the *New York Times* and pay a different price depending on how much of it you read. The *Times* could determine how much you read, whether you could copy portions of the newspaper, whether you could save it on your hard disk, and so on. But if the code you used to access the *Times* site did not enable the control the *Times* demanded, then the *Times* would not let you onto its site at all. In short, systems would exchange information only with others that could be trusted, and the protocols of trust would be built into the architectures of the systems.

Stefik calls this "trusted systems," and the name evokes a helpful analog. Think of bonded couriers. Sometimes you want to mail a letter with something particularly valuable in it. You could simply give it to the post office, but the post office is not a terribly reliable system; it has relatively little control over its employees, and theft and loss are not uncommon. So instead of going to the post office, you could give your letter to a bonded courier. Bonded couriers are insured, and the insurance is a cost that constrains them to be reliable. This reputation then makes it possible for senders of valuable material to be assured about using their services. As Stefik writes:

> with trusted systems, a substantial part of the enforcement of a digital contract is carried out by the trusted system. [T]he consumer does not have the option of

> disregarding a digital contract by, for example, making unauthorized copies of a work. A trusted system refuses to exercise a right that is not sanctioned by the digital contract.[17]

This is what a structure of trusted systems does for owners of intellectual property. It is a bonded courier that takes the thing of value and controls access to and use of it according to the orders given by the principal.

Imagine for a moment that such a structure emerged generally in cyberspace. How would we then think about copyright law?

An important point about copyright law is that, though designed in part to protect authors, the control it was designed to create was never to be perfect. As the Supreme Court noted, copyright "protection has never accorded the copyright owner complete control over all possible uses of his work."[18] Thus, the law grants only particular exclusive rights, and those rights are subject to important limitations, such as "fair use," limited terms, and the first sale doctrine. The law threatened to punish violators of copyright laws—and it was this threat that induced a fairly high proportion of people to comply—but the law was never designed to simply do the author's bidding. It had public purposes as well as the author's interest in mind.

Trusted systems provide authors with the same sort of protection. Because authors can restrict unauthorized use of their material, they can extract money in exchange for access. Trusted systems thus achieve what copyright law aims to, but they can achieve this protection without the law doing the restricting. It permits a much more fine-grained control over access to and use of protected material than the law permits, and it can do so without the aid of the law.

What copyright seeks to do using the threat of law and the push of norms, trusted systems do through the code. Copyright orders others to respect the rights of the copyright holder before using his property; trusted systems give access only if rights are respected in the first place. The controls needed to regulate this access are built into the systems, and no users (except hackers) have a choice about whether to obey them. The code complements the law by codifying the rules, making them more efficient.

Trusted systems in this sense are a privatized alternative to copyright law. They need not be exclusive; there is no reason not to use both law and trusted systems. Nevertheless, the code is effectively doing the work that the law was designed to do. It implements the law's protection, through code, far more effectively than the law did.

What could be wrong with this? We do not worry when people put double bolts on their doors to supplement the work of the neighborhood cop. We

do not worry when they lock their cars and take their keys. It is not an offense to protect yourself rather than rely on the state. Indeed, in some contexts it is a virtue. Andrew Jackson's mother, for example, told him, "Never tell a lie, nor take what is not your own, nor sue anybody for slander, assault and battery. Always settle them cases yourself."[19] Self-sufficiency is strength and going to the law a sign of weakness.

There are two steps to answering this question. The first rehearses a familiar but forgotten point about the nature of "property"; the second makes a less familiar, but central, point about the nature of intellectual property. Together they suggest why perfect control is not the control that law has given owners of intellectual property. And together they suggest the potential problem that copyright law in cyberspace will create.

THE LIMITS ON THE PROTECTION OF PROPERTY

The realists in American legal history (circa 1890–1930) were scholars who (in part) emphasized the role of the state in what was called "private law."[20] At the time they wrote, it was the "private" in private law that got all the emphasis. Forgotten was the "law," as if "property" and "contract" existed independent of the state.

The realists' aim was to undermine this view. Contract and property law, they argued, gave private parties power.[21] If you breach a contract with me, I can have the court order the sheriff to force you to pay; the contract gives me access to the state power of the sheriff. If your contract with your employer says that it may dismiss you for being late, then the police can be called in to eject you if you refuse to leave. If your lease forbids you to have cats, then the landlord can use the power of the courts to evict you if you do not get rid of the cats. These are all instances where contract and property, however grounded in private action, give a private person an entitlement to the state.

No doubt this power is justified in many cases; to call it "law" is not to call it unjust. The greatest prosperity in history has been created by a system in which private parties can order their lives freely through contract and property. But whether justified in the main or not, the realists argued that the contours of this "law" should be architected to benefit society.[22]

This is not communism. It is not an attack on private property, and it is not to say that the state creates wealth (put your Ayn Rand away). These are claims about the relationship between private law and public law, and they should be uncontroversial.

Private law creates private rights to the extent that these private rights serve some collective good. If a private right is harmful to a collective good,

then the state has no reason to create it. The state's interests are general, not particular. It has a reason to create rights when those rights serve a common, rather than particular, end.

The institution of private property is an application of this point. The state has an interest in defining rights to private property because private property helps produce a general, and powerful, prosperity. It is a system for ordering economic relations that greatly benefits all members of society. No other system that we have yet devised better orders economic relations. No other system, some believe, could.[23]

But even with ordinary property—your car, or your house—property rights are never absolute. There is no property that does not have to yield at some point to the interests of the state. Your land may be taken to build a highway, your car seized to carry an accident victim to the hospital, your driveway crossed by the postman, your house inspected by health inspectors. In countless ways, the system of property we call "private property" is a system that balances exclusive control by the individual against certain common state ends. When the latter conflict with the former, it is the former that yields.

This balance, the realists argued, is a feature of all property. But it is an especially important feature of intellectual property. The balance of rights with intellectual property differs from the balance with ordinary real or personal property. "Information," as Boyle puts it, "is different."[24] And a very obvious feature of intellectual property shows why.

When property law gives me the exclusive right to use my house, there's a very good reason for it. If you used my house while I did, I would have less to use. When the law gives me an exclusive right to my apple, that too makes sense. If you eat my apple, then I cannot. Your use of my property ordinarily interferes with my use of my property. Your consumption reduces mine.

The law has a good reason, then, to give me an exclusive right over my personal and real property. If it did not, I would have little reason to work to produce it. Or if I did work to produce it, I would then spend a great deal of my time trying to keep you away. It is better for everyone, the argument goes, if I have an exclusive right to my (rightly acquired) property, because then I have an incentive to produce it and not waste all my time trying to defend it.[25]

Things are different with intellectual property. If you "take" my idea, I still have it. If I tell you an idea, you have not deprived me of it.[26] An unavoidable feature of intellectual property is that its consumption, as the economists like to put it, is "nonrivalrous." Your consumption does not lessen mine. If I write a song, you can sing it without making it impossible for me to sing it. If I write a book, you can read a copy of it (please do) without disabling me from reading another copy of it. Ideas, at their core, can be shared with no reduction in

the amount the "owner" can consume. This difference is fundamental, and it has been understood since the founding.

Jefferson put it better than I:

> If nature has made any one thing less susceptible than all others of exclusive property, it is the action of the thinking power called an idea, which an individual may exclusively possess as long as he keeps it to himself; but the moment it is divulged, it forces itself into the possession of every one, and the receiver cannot dispossess himself of it. Its peculiar character, too, is that no one possesses the less, because every other possess the whole of it. He who receives an idea from me, receives instruction himself without lessening mine; as he who lites his taper at mine, receives light without darkening me. That ideas should freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition, seems to have been peculiarly and benevolently designed by nature, when she made them, like fire, expansible over all space, without lessening their density at any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement or exclusive appropriation. Inventions then cannot, in nature, be a subject of property.[27]

Technically, Jefferson presents two concepts: One is the possibility of excluding others from using or getting access to an idea, which he defines as "action of the thinking power . . . which an individual may exclusively possess as long as he keeps it to himself." This is the question whether ideas are "excludable"; Jefferson affirms that an idea is "excludable" until "the moment it is divulged."

The other concept is whether my use of a divulged idea lessens your use of the same idea. This is the question of whether divulged ideas are "rivalrous."[28] Again, Jefferson suggests that, once they are divulged, ideas are not "rivalrous." Jefferson believes that the act of divulging/sharing has made ideas both nonexcludable and nonrivalrous, and that there is little that man can do to change this fact.[29]

In fact, shared ideas are both nonexcludable and nonrivalrous. I can exclude people from my secret ideas or writings—I can keep them secret, or build fences to keep people out. How easily, or how effectively, I can do so is a technical question. It depends on the architecture of protection that a given context provides. But given the proper technology, there is no doubt that I can keep people out. What I cannot do is to exclude people from my shared ideas or writings simply because they are not my secrets anymore.

My shared ideas are "nonrivalrous" goods, too. No technology (that we know of) will erase an idea from your head as it passes into my head. My

knowing what you know does not lessen your knowing the same thing. That fact is a given in the world, and it makes intellectual property different. Unlike apples, and unlike houses, once shared, ideas are something I can take from you without diminishing what you have.

It does not follow, however, that there is no need for property rights over expressions or inventions.[30] Just because you can have what I have without lessening what I have does not mean that the state has no reason to create rights over ideas, or over the expression of ideas.

If a novelist cannot stop you from copying (rather than buying) her book, then she may have very little incentive to produce more books. She may have as much as she had before you took the work she produced, but if you take it without paying, she has no monetary incentive to produce more.

Now, of course, the incentives an author faces are quite complex, and it is not possible to make simple generalizations.[31] But generalizations do not have to be perfect to make a point: Even if some authors write for free, it is still the case that the law needs some intellectual property rights. If the law did not protect authorship at all, there would be fewer authors. The law has a reason to protect the rights of authors, at least insofar as doing so gives them an incentive to produce. With ordinary property, the law must both create an incentive to produce and protect the right of possession; with intellectual property, the law need only create the incentive to produce.

This is the difference between these two very different kinds of property, and this difference fundamentally affects the nature of intellectual property law. While we protect real and personal property to protect the owner from harm and give the owner an incentive, we protect intellectual property to ensure that we create a sufficient incentive to produce it. "Sufficient incentive," however, is something less than "perfect control." And in turn we can say that the ideal protections of intellectual property law are something less than the ideal protections for ordinary or real property.

This difference between the nature of intellectual property and ordinary property was recognized by our Constitution, which in article I, section 8, clause 8, gives Congress the power "to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."

Note the special structure of this clause. First, it sets forth the precise reason for the power—to promote the progress of science and useful arts. It is for those reasons, and those reasons only, that Congress may grant an exclusive right. And second, note the special temporality of this right: "for limited Times." The Constitution does not allow Congress to grant authors and inventors permanent exclusive rights to their writings and discoveries, only

limited rights. (Though apparently those limited times can be extended.[32]) It does not give Congress the power to give them a perpetual "property" in their writings and discoveries, only an exclusive right over them for a limited time.

The Constitution's protection for intellectual property then is fundamentally different from its protection of ordinary property. I've said that all property is granted subject to the limit of the public good. But even so, if the government decided to nationalize all property after a fifteen-year term of ownership, the Constitution would require it to compensate the owners. By contrast, if Congress set the copyright term at fifteen years, there would be no claim that the government pay compensation after the fifteen years were up. Intellectual property rights are a monopoly that the state gives to producers of intellectual property in exchange for their production of it. After a limited time, the product of their work becomes the public's to use as it wants. This is Communism at the core of our Constitution's protection of intellectual property. This "property" is not property in the ordinary sense of that term.

And this is true for reasons better than tradition as well. Economists have long understood that granting property rights over information is dangerous (to say the least).[33] This is not because of leftist leanings among economists; it is because economists are consequentialists, and their objective in granting any property right is simply to facilitate production. But there is no way to know, in principle, whether increasing or decreasing the rights granted under intellectual property law will lead to an increase in the production of intellectual property. The reasons are complex, but the point is not: Increasing intellectual property's protection is not guaranteed to "promote the progress of science and useful arts"—indeed, often doing so will stifle it.

The balance that intellectual property law traditionally strikes is between the protections granted the author and the public use or access granted everyone else. The aim is to give the author sufficient incentive to produce. Built into the law of intellectual property are limits on the power of the author to control use of the ideas she has created.[34]

A classic example of these limits and of this public use dimension is the right of "fair use." Fair use is the right to use copyrighted material, regardless of the wishes of the owner of that material. A copyright gives the owner certain rights; fair use is a limitation on those rights. It gives you the right to criticize this book, cut sections from it, and reproduce them in an article attacking me. In these ways and in others, you have the right to use this book independent of how I say it should be used.

Fair use does not necessarily work against the author's interest—or more accurately, fair use does not necessarily work against the interests of authors as a class. When fair use protects the right of reviewers to criticize books without

the permission of authors, then more critics criticize. And the more criticism there is, the better the information is about what books people should buy. The better the information is about what to buy, the more people will buy it. Authors as a whole benefit from the system of fair use, even if particular authors do not.

The law of copyright is filled with such rules. Another is the "first sale" doctrine. If you buy this book, you can sell it to someone else free of any constraint I might impose on you.[35] This doctrine differs from the tradition in, for example, Europe, where there are "moral rights" that give the creator power over subsequent use.[36] I've already mentioned another example—limited term. The creator cannot extend the term for which the law will provide protection (even if Congress can); that is fixed by the statute and runs out when the statute runs out.

Taken together, these rules give the creator significant—but not perfect—control over the use of what he produces. They give the public some access, but not complete access. They are balanced differently from the balance the law strikes for ordinary property—by design. They are constitutionally structured to help build an intellectual and cultural commons.

The law strikes this balance. It is not a balance that would exist in nature. Without the law, and before cyberspace, authors would have very little protection; with the law, they have significant, but not perfect, protection. The law gives authors something they otherwise would not have in exchange for limits on their rights, secured to benefit the intellectual commons as a whole.

PRIVATE SUBSTITUTES FOR PUBLIC LAW

So copyright law strikes a balance between control and access. What about that balance when code is the law? Should we expect that any of the limits will remain? Should we expect code to mirror the limits that the law imposes? Fair use? Limited term? Would private code build these "bugs" into its protections?

The point should be obvious: When intellectual property is protected by code, nothing requires that the same balance be struck. Nothing requires the owner to grant the right of fair use. She might allow individuals to browse for free, as a bookstore does, but she might not. Whether she grants this right depends on whether it profits her. Fair use becomes contingent upon private gain. More importantly, it becomes contingent upon the private gain of authors individually rather than authors as a class.

Thus, as privatized law, trusted systems regulate in the same domain that copyright law regulates. But unlike copyright law, they do not guarantee the

same limits on copyright's protection. Trusted systems give the producer maximum control over the uses of copyrighted work—admittedly at a cheaper cost, thus perhaps permitting many more authors to publish. But they give authors almost perfect control in an area in which the law did not. Code thus displaces the balance that copyright law strikes by displacing the limits the law imposes. As Daniel Benloliel puts it,

> [D]ecentralized content providers are . . . privatizing the enforcement authority with strict technological standards, under which individuals would be banned from access and use of particular digital content in a way that might override legitimate fair use.[37]

So far my description simply sets law against code: the law of copyright either complemented by, or in conflict with, private code. You may not yet be convinced that we should consider this a conflict, because it has always been the case that one can exercise more control over a copyrighted work than the law gives you the right to exercise over the copyright. For example, if you own a painting that is in the public domain, there's no requirement for you to let anyone see it. You could lock it in your bedroom and never let anyone see it ever. In a sense, you've thus deprived the world of the value of this painting being in the "public domain." But no one has ever thought that this interaction between the law of trespass and copyright has created any important conflict. So why should anyone be troubled if copyright owners use code to lock up their content beyond the balance the law of copyright strikes?

If this is where you're stuck, then let me add one more part to the story. As I mentioned above, the DMCA contains an anti-circumvention provision. That part of the law forbids the circumvention of some technical protection measures; it forbids the development of tools to circumvent technical protection as well. Most important, it forbids these circumventions regardless of the purpose of the circumvention. Thus, if the underlying use you would make of a copyrighted work—if you could get access to it—is a "fair use," the DMCA still makes it an offense to circumvent technical protections to get access to it. Thus one part of the law of copyright grants "fair use," while another part of copyright removes at least some fair use liberty where the fair use has been removed by technical means.[38]

But so what, the skeptic will ask. What the law gives, the law can take away, can't it?

No it can't, and that's the point. As the Supreme Court has indicated, copyright law is consistent with the First Amendment only because of certain

important limitations built into the law. Removing those limitations would then raise important First Amendment questions. Thus, when the law acts with code to remove the law's protection for fair use, this should raise an important question—at least for those concerned about maintaining the balance that copyright law strikes.

But maybe this conflict is just temporary. Couldn't the code be changed to protect fair use?

The answer to that hopeful (and again, hopeful because my main point is about whether incentives to protect fair use exist) question is no, not directly. Fair use inherently requires a judgment about purpose, or intent. That judgment is beyond the ken of even the best computers. Indirectly, however, fair use could be protected. A system that allowed an individual to unlock the trusted system if he claimed the use was fair (perhaps marking the used work with a tag to make it possible to trace the use back to the user) could protect fair use. Or as Stefik describes, a system that granted users a "fair use license," allowing them to unlock the content and use insurance backing the license to pay for any misuse, might also protect fair use.[39] But these alternatives again rely on structures beyond code. With the code itself, there is no way adequately to police fair use.

Some will respond that I am late to the party: Copyright law is already being displaced, if not by code then by the private law of contract. Through the use of click-wrap, or shrink-wrap, licenses, authors are increasingly demanding that purchasers, or licensees, waive rights that copyright law gave them. If copyright law gives the right to reverse-engineer, then these contracts might extract a promise not to reverse-engineer. If copyright law gives the right to dispose of the book however the purchaser wants after the first sale, then a contract might require that the user waive that right. And if these terms in the contract attached to every copyright work are enforceable merely by being "attached" and "knowable," then already we have the ability through contract law to rewrite the balance that copyright law creates.

I agree that this race to privatize copyright law through contract is already far along, fueled in particular by decisions such as Judge Frank Easterbrook's in *ProCD v. Zeidenberg*. But contracts are not as bad as code. Contracts are a form of law. If a term of a contract is inconsistent with a value of copyright law, you can refuse to obey it and let the other side get a court to enforce it. In some cases, courts have expressly refused to follow a contract term precisely because it is inconsistent with a copyright law value.[40] The ultimate power of a contract depends upon the decision by a court to enforce the contract or not. Although courts today are relatively eager to find ways to enforce these contracts, there is at least hope that if the other side makes its case very clear,

courts could shift direction again.[41] As Stefik writes, trusted systems "differ from an ordinary contract in critical ways."

> [I]n an ordinary contract, compliance is not automatic; it is the responsibility of the agreeing parties. There may be provisions for monitoring and checking on compliance, but the actual responsibility for acting in accordance with the terms falls on the parties. In addition, enforcement of the contract is ultimately the province of the courts.[42]

The same is not true of code. Whatever problems there are when contracts replace copyright law, the problems are worse when code displaces copyright law. Again—where do we challenge the code? When the software protects without relying in the end on the state, where can we challenge the nature of the protection? Where can we demand balance when the code takes it away?

I don't mean to enter the extremely contentious debate about whether this change in control is good or appropriate. I've said too much about that elsewhere.[43] For our purposes here, the point is simply to recognize a significant change. Code now makes possible increasingly perfect control over how culture is spread. Regulations have "been fairly consistent . . . on the side of expanding the power of the owners to control the use of their products."[44] And these regulations invite a demand for perfect control over how culture is spread.

The rise of contracts qualifying copyright law and the rise of code qualifying copyright law raise a question that the law of copyright has not had to answer before. We have never had to choose whether authors should be permitted perfectly to control the use of their intellectual property independent of the law, for such control was not possible. The balance struck by the law was the best that authors could get. But now, code gives authors a better deal. The question for legal policy is whether this better deal makes public sense.

Here we confront the first latent ambiguity within the law of copyright. There are those who would say that copyright law already decides this question—whether against code-based control, or for it. But in my view, this is a choice the law has yet to make. I have my own views about how the law should decide the question. But what technology has done is force us to see a choice that was not made before. See the choice, and then make it.

Put most directly: There has always been a set of uses of copyrighted work that was unregulated by the law of copyright. Even within the boundary of uses that were regulated by the law of copyright, "fair use" kept some uses free. The core question is why? Were these transactions left free because it

was too costly to meter them? Or were these transactions left free because keeping them free was an important public value tied to copyright?

This is a question the law never had to resolve, though there is support for both views.[45] Now the technology forces us to resolve it. The question, then, is how.

A nice parallel to this problem exists in one part of constitutional law. The framers gave Congress the power to regulate interstate commerce and commerce that affects interstate commerce.[46] At the founding, that was a lot of commerce, but because of the inefficiencies of the market, not all of it. Thus, the states had a domain of commerce that they alone could regulate.[47]

Over time, however, the scope of interstate commerce has changed so that much less commerce is now within the exclusive domain of the states. This change has produced two sorts of responses. One is to find other ways to give states domains of exclusive regulatory authority. The justification for this response is the claim that these changes in interstate commerce are destroying the framers' vision about state power.

The other response is to concede the increasing scope of federal authority, but to deny that it is inconsistent with the framing balance.[48] Certainly, at the founding, some commerce was not interstate and did not affect interstate commerce. But that does not mean that the framers intended that there must always be such a space. They tied the scope of federal power to a moving target; if the target moves completely to the side of federal power, then that is what we should embrace.[49]

In both contexts, the change is the same. We start in a place where balance is given to us by the mix of frictions within a particular regulatory domain: Fair use is a balance given to us because it is too expensive to meter all use; state power over commerce is given to us because not all commerce affects interstate commerce. When new technology disturbs the balance, we must decide whether the original intent was that there be a balance, or that the scope of one side of each balance should faithfully track the index to which it was originally tied. Both contexts, in short, present ambiguity.

Many observers (myself included) have strong feelings one way or the other. We believe this latent ambiguity is not an ambiguity at all. In the context of federal power, we believe either that the states were meant to keep a domain of exclusive authority[50] or that the federal government was to have whatever power affected interstate commerce.[51] In the context of fair use, we believe that either fair use is to be a minimum of public use, guaranteed regardless of the technology,[52] or that it is just an efficient compromise in response to an inefficient technology, to be removed as soon as efficiency can be achieved.

But in both cases, this may make the problem too easy. The best answer in both contexts may be that the question was unresolved at the framing: Perhaps no one thought of the matter, and hence there is no answer to the question of what they would have intended if some central presupposition had changed. And if there was no original answer, we must decide the question by our own lights. As Stefik says of trusted systems—and, we might expect, of the implications of trusted systems—"It is a tool never imagined by the creators of copyright law, or by those who believe laws governing intellectual property cannot be enforced."[53]

The loss of fair use is a consequence of the perfection of trusted systems. Whether you consider it a problem or not depends on your view of the value of fair use. If you consider it a public value that should exist regardless of the technological regime, then the emergence of this perfection should trouble you. From your perspective, there was a value latent in the imperfection of the old system that has now been erased.

But even if you do not think that the loss of fair use is a problem, trusted systems threaten other values latent in the imperfection of the real world. Consider a second.

THE ANONYMITY THAT IMPERFECTION ALLOWS

I was a student at an English university for a number of years. In the college I attended, there was a "buttery"—a shop inside the college that basically sold alcohol. During the first week I was there I had to buy a large amount of Scotch (a series of unimaginative gifts, as I remember). About a week after I made these purchases, I received a summons from my tutor to come talk with him in his office. When I arrived, the tutor asked me about my purchases. This was, to his mind, an excessive amount of alcohol, and he wanted to know whether I had a good reason for buying it.

Needless to say, I was shocked at the question. Of course, technically, I had made a purchase at the college, and I had not hidden my name when I did so (indeed, I had charged it on my college account), so, formally, I had revealed my alcohol purchases to the college and its agents. Still, it shocked me that this information would be monitored by college authorities and then checked up on. I could see why they did it, and I could see the good that might come from it. It just never would have occurred to me that these data would be used in this way.

If this was an invasion, of course, it was a small one. Later it was easy for me to hide my binges simply by buying from a local store rather than the college buttery. (Though I later learned that the local store rented its space from the college, so who knows what deal they had struck?) And in any case,

I was not being punished. The college was just concerned. But the example suggests a more general point: We reveal to the world a certain class of data about ourselves that we ordinarily expect the world not to use. What happens when they use it?

Trusted systems depend on such data—they depend on the ability to know how people use the property that is being protected. To set prices most efficiently, the system ideally should know as much about individuals and their reading habits as possible. It needs to know this data because it needs an efficient way to track use and so to charge for it.[54]

But this tracking involves a certain invasion. We live now in a world where we think about what we read in just the way that I thought about what I bought as a student in England—we do not expect that anyone is keeping track. We would be shocked if we learned that the library was keeping tabs on the books that people checked out and then using this data in some monitoring way.

Such tracking, however, is just what trusted systems require. And so the question becomes: Should there be a right against this kind of monitoring? The question is parallel to the question of fair use. In a world where this monitoring could not effectively occur, there was, of course, no such right against it. But now that monitoring can occur, we must ask whether the latent right to read anonymously, given to us before by imperfections in technologies, should be a legally protected right.

Julie Cohen argues that it should, and we can see quite directly how her argument proceeds.[55] Whatever its source, it is a value in this world that we can explore intellectually on our own. It is a value that we can read anonymously, without fear that others will know or watch or change their behavior based on what we read. This is an element of intellectual freedom; it is a part of what makes us as we are.[56]

But this element is potentially erased by trusted systems. These systems need to monitor, and this monitoring destroys anonymity. We need to decide whether, and how, to preserve values from today in a context of trusted systems.

This could first be a question of translation: namely, how should changes in technology be accommodated to preserve values from an earlier context in a new context? It is the same question that Brandeis asked about wiretapping.[57] It is the question the Court answers in scores of contexts all the time. It is fundamentally a question about preserving values when contexts change.

In the context of both fair use and reading, Cohen has a consistent answer to this question of translation. She argues that there is a right to resist, or "hack," trusted systems to the extent that they infringe on traditional fair use. (Others have called this the "Cohen Theorem.") As for reading, she argues that

copyright management schemes must protect a right to read anonymously—that if they monitor, they must be constructed so that they preserve anonymity. The strategy is the same: Cohen identifies a value yielded by an old architecture but now threatened by a new architecture, and then argues in favor of an affirmative right to protect the original value.

But here again we might view the question more ambiguously. I share Cohen's view, but the argument on the other side is not silly. If it's permissible to use technology to make copyrighted works available, why isn't it permissible to gather data about who uses what works? That data gathering is not part of the copyright itself; it is a byproduct of the technology. And as our tradition has never had this technical capacity before, it is hard to say a choice was made about it in the past.

PERMISSION CULTURE VS. FREE

I've already described the limits copyright law places on itself. These limits, as I argued, reflect important values. They express the balance that copyright law aims to be.

But what is too often missed in this discussion of balance is any sense of perspective. We focus on the gradual shifts in the law but miss the profound sense in which the significance of the law has changed.

This change is produced by the unintended interaction between the architecture of digital technologies and the architecture of the law.

Copyright law at its core regulates "copies." In the analog world, there were very few contexts in which one produced "copies." As Jessica Litman described more than a decade ago,

> At the turn of the century, U.S. copyright law was technical, inconsistent, and difficult to understand, but it didn't apply to very many people or very many things. If one were an author or publisher of books, maps, charts, paintings, sculpture, photographs or sheet music, a playwright or producer of plays, or a printer, the copyright law bore on one's business. Booksellers, piano-roll and phonograph record publishers, motion picture producers, musicians, scholars, members of Congress, and ordinary consumers could go about their business without ever encountering a copyright problem.[58]

Thus there were many ways in which you could use creative work in the analog world without producing a copy.

Digital technology, at its core, makes copies. Copies are to digital life as breathing is to our physical life. There is no way to use any content in a digital

context without that use producing a copy. When you read a book stored on your computer, you make a copy (at least in the RAM memory to page through the book). When you do anything with digital content, you technically produce a copy.

This technical fact about digital technologies, tied to the technical architecture of the law, produces a profound shift in the scope or reach of the law of copyright that too many simply miss: While in the analog world, life was sans copyright law; in the digital world, life is subject to copyright law. Every single act triggers the law of copyright. Every single use is either subject to a license or illegal, unless deemed to be "fair use." The emergence of digital technologies has thus radically increased the domain of copyright law—from regulating a tiny portion of human life, to regulating absolutely every bit of life on a computer.

Now if all you think about is protecting the distribution of professionally created culture, this might not concern you much. If you're trying to stop "piracy," then a regime that says every use requires permission is a regime that gives you a fairly broad range of tools for stamping out piracy.

But though you wouldn't notice this listening to the debates surrounding copyright law just now, in fact, protecting the distribution of professionally created culture is not the only, or even, I suggest, the most important part of culture. And indeed, from a historical perspective, top-down, professionally produced culture is but a tiny part of what makes any culture sing. The 20th century may have been an exception to this rule, but no Congress voted to make professional culture the only legal culture within our society.

Standing alongside professional culture is amateur culture—where amateur doesn't mean inferior or without talent, but instead culture created by people who produce not for the money, but for the love of what they do. From this perspective, there is amateur culture everywhere—from your dinner table, where your father or sister tell jokes that take off from the latest political scandal or the latest *Daily Show;* from your basement, where your brother and his three best friends are causing permanent damage to their eardrums as they try to become the next Rolling Stones; from your neighbors who gather each Thursday and Sunday to sing in a church choir; from your neighborhood schools, where kids and teachers create art or music in the course of learning about our culture; from the kids at your neighborhood school, who tear their pants or wear their shirts in some odd way, all as a way to express and make culture.

This amateur culture has always been with us, even if it is to us today, as Dan Hunter and Greg Lastowska put it, "hidden."[59] It is precisely how the

imagination of kids develops;[60] it is how culture has always developed. As Siva Vaidhyanathan writes,

> widespread democratic cultural production (peer-to-peer production, one might say) . . . merely echoes how cultural texts have flowed through and been revised by discursive communities everywhere for centuries. Texts often undergo a process similar to a game of "telephone," through which a text is substantially—sometimes almost unintentionally—distorted through many small revisions. . . . Such radical textual revisions have occurred in other contexts and have helped build political critiques, if not movements. For instance, historian Lawrence Levine (1988) has documented how working-class players and audiences in nineteenth-century America adapted and revised the works of William Shakespeare to their local contexts, concerns and ideologies. And historian Eric Lott (1993) has shown how *Uncle Tom's Cabin* was reworked by working-class white communities to aid the cause of racial dominance instead of the Christian liberationist message the book was intended to serve.[61]

Importantly, too, this kind of cultural remix has historically been free of regulation. No one would think that as you tell a joke around your dinner table, or sing songs with your friends, or practice to become the next Rolling Stones, you need a lawyer standing next to you, clearing the rights to "use" the culture as you make your creative remix. The law of copyright, historically, has been focused on commercial life. It has left the noncommercial, or beyond commercial, creativity free of legal regulation.

All this has now changed, and digital technologies are responsible. First, and most important, digital technologies have radically expanded the scope of this amateur culture. Now the clever remix of some political event or the latest song by your favorite band are not just something you can share with your friends. Digital technologies have made it simple to capture and share this creativity with the world. The single most important difference between the Internet circa 1999 and the Internet circa today is the explosion of user-generated creativity—from blogs, to podcasts, to videocasts, to mashups, the Internet today is a space of extraordinary creativity.

Second, digital technologies have democratized creativity. Technology has given a wide range of potential creators the capacity to become real. "People are waking from their consumerist coma," one commentator describes.[62] As DJ Danger Mouse put it at the Web 2.0 conference in 2004,

> Mashing is so easy. It takes years to learn how to play the guitar and write your own songs. It takes a few weeks of practice with a turntable to make people

> dance and smile. It takes a few hours to crank out something good with some software. So with such a low barrier to entry, everyone jumps in and starts immediately being creative.[63]

But third, and directly relevant to the story of this chapter, to the extent this creativity finds its expression on the Net, it is now subject to the regulation of copyright law. To the extent it uses others' creativity, it needs the permission of others. To the extent it builds upon the creativity of others, it needs to be sure that that creativity can be built upon legally. A whole system of regulation has now been grafted upon an economy of creativity that until now has never known regulation. Amateur culture, or bottom up culture, or the culture that lives outside of commercial transactions—all of this is subject to regulation in a way that 30 years ago it was not.

A recent example of this conflict makes the point very concisely. There's a genre of digital creativity called Anime Music Videos (AMVs). AMVs are remixes of anime cartoons and music. Kids spend hundreds, sometimes thousands of hours reediting the anime cartoons to match them perfectly to music. The result is, in a word, extraordinary. It is among the most creative uses of digital technology that I have seen.

While this genre of creativity is not small, it's also not huge. Basically one site dominates activity around AMVs. That site has more than 500,000 members, and some 30,000 creators upload AMV content to the site.

In November 2005, one prominent record label, Wind-Up Records, informed this website that it wanted all Wind-Up Records artists removed from the site. That was some 3,000 videos, representing at least 250,000 hours of volunteer work by creators across the world—work that would have just one real effect: to promote the underlying artists' work.

From the perspective of the law as it is, this is an easy case. What the kids are doing is making a derivative work of the anime; they are distributing full copies of the underlying music; and they are synchronizing the music to video—all without the permission of the copyright owners.

But from the perspective of culture, this should be a very hard case. The creativity demonstrated by this work is extraordinary. I can't show you that creativity in a book, but the notes point you to an example that you can see.[64] It is noncommercial, amateur creative work—precisely the sort that has never been subject to the regulation of the law, but which now, because it is living in digital context, is monitored, and regulated, by the law.

Here again, I have strong feelings about what the right answer should be. But we should recognize the latent ambiguity this conflict presents:

Because of the changes in digital technology, it is now possible for the law to regulate every single use of creative work in a digital environment. As life increasingly moves into a digital environment, this means that the law will regulate more and more of the use of culture.

Is this consistent with our values?

The answer again could be found first by trying to translate framing values into the current context. From that perspective, it would be extraordinarily difficult to imagine that the framing vision would have included the level of legal regulation that the current regime entails.

Again, that conclusion could be questioned by recognizing that the possibility of such extensive regulation didn't exist, and so the choice about whether such extensive regulation should be allowed wasn't made. That choice, when made, should recognize that while there is extensive and new regulation of amateur culture, that regulation creates new wealth for professional culture. There's a choice to be made about which form of culture we should protect. That choice has not yet been made directly. It is one more choice we have yet to make.

THE PROBLEMS THAT PERFECTION MAKES

These three examples reveal a common pattern—one that will reach far beyond copyright. At one time we enjoyed a certain kind of liberty. But that liberty was not directly chosen; it was a liberty resulting from the high costs of control.[65] That was the conclusion we drew about fair use—that when the cost of control was high, the space for fair use was great. So too with anonymous reading: We read anonymously in real space not so much because laws protect that right as because the cost of tracking what we read is so great. And it was the same with amateur culture: That flourished free of regulation because regulation could not easily reach it.

When costs of control fall, however, liberty is threatened. That threat requires a choice—do we allow the erosion of an earlier liberty, or do we erect other limits to re-create that original liberty?

The law of intellectual property is the first example of this general point. As the architecture of the Internet changes, it will allow for a greater protection of intellectual property than real-space architectures allowed; this greater protection will force a choice on us that we do not need to make in real space. Should the architecture allow perfect control over intellectual property, or should we build into the architecture an incompleteness that guarantees a certain aspect of public use or a certain space for individual freedom?

Ignoring these questions will not make them go away. Pretending that the framers answered them is no solution either. In this context (and this is just the first) we will need to make a judgment about which values the architecture will protect.

CHOICES

I've argued that cyberspace will open up three important choices in the context of intellectual property: whether to allow intellectual property in effect to become completely propertized (for that is what a perfect code regime for protecting intellectual property would do); and whether to allow this regime to erase the anonymity latent in less efficient architectures of control; and whether to allow the expansion of intellectual property to drive out amateur culture. These choices were not made by our framers. They are for us to make now.

I have a view, in this context as in the following three, about how we should exercise that choice. But I am a lawyer. Lawyers are taught to point elsewhere—to the framers, to the United Nations charter, to an act of Congress—when arguing about how things ought to be. Having said that there is no such authority here, I feel as if I ought to be silent.

Cowardly, not silent, however, is how others might see it. They say that I should say what I think. So in each of these three applications (intellectual property, privacy, and free speech), I will offer my view about how these choices should be made. But I do this under some duress and encourage you to simply ignore what I believe. It will be short, and summary, and easy to discard. It is the balance of the book—and, most importantly, the claim that we have a choice to make—that I really want to stick.

Anonymity

Cohen, it seems to me, is plainly right about anonymity, and the Cohen Theorem is inspirational. However efficient the alternative may be, we should certainly architect cyberspaces to ensure anonymity—or more precisely, pseudonymity—first. If the code is going to monitor what I do, then at least it should not know that it is "I" that it is monitoring. I am less troubled if it knows that "14AH342BD7" read such and such; I am deeply troubled if that number is tied back to my name.

Cohen is right for a second reason as well: All of the good that comes from monitoring could be achieved while protecting privacy. It may take a bit more coding to build in routines for breaking traceability; it may take more planning to ensure that privacy is protected. But if those rules are embedded

up front, the cost would not be terribly high. It is far cheaper to architect privacy protections now rather than retrofit for them later.

The Commons

By "the Commons" I mean a resource that anyone within a relevant community can use without seeking the permission of anyone else. Such permission may not be required because the resource is not subject to any legal control (it is, in other words, in the public domain). Or it may not be required because permission to use the resource has already been granted. In either case, to use or to build upon this resource requires nothing more than access to the resource itself.[66]

In this sense, the questions about the scope and reach of copyright law ask whether our future will protect the intellectual commons that it did in the past. Again, it did so in the past because the friction of control was too great. But now that that friction is gone, will we preserve or destroy the commons that used to exist?

My view is that it ought to be preserved.

We can architect cyberspace to preserve a commons or not. (Jefferson thought that nature had already done the architecting, but Jefferson wrote before there was code.) We should choose to architect it with a commons. Our past had a commons that could not be designed away; that commons gave our culture great value. What value the commons of the future could bring us is something we are just beginning to see. Intellectual property scholars saw it—long before cyberspace came along—and laid the groundwork for much of the argument we need to have now.[67] The greatest work in the law of cyberspace has been written in the field of intellectual property. In a wide range of contexts, these scholars have made a powerful case for the substantive value of an intellectual commons.[68]

James Boyle puts the case most dramatically in his extraordinary book *Shamans, Software, and Spleens*.[69] Drawing together both cyberspace and noncyberspace questions, he spells out the challenge we face in an information society—particularly the political challenge.[70] Elsewhere he identifies our need for an "environmental movement" in information policy—a rhetoric that gets people to see the broad range of values put at risk by this movement to propertize all information. Boyle's work has inspired many others to push a similar agenda of freedom.[71]

That freedom would limit the law's regulation over the use and reuse of culture. It would resist perfect control over use; it would free a wide range of reuse. It would build through affirmative protections for freedom the liberty

that friction gave us before. It would do so because it believes in the values this freedom stands for, and it would demonstrate the value in that freedom by enabling the communities that freedom would itself enable.

But this freedom could be constructed either through changes in the law or voluntarily. That is, the law could be rebalanced to encourage the freedom thought important, or this property could be redeployed to effect the freedom thought important.

The second strategy was the technique of the Free Software Movement, described in Chapter 8. Using copyright law, Stallman deployed a software license that both preserved the four freedoms of free software, and also required that those modifying and distributing free software distribute the modifications freely. This license thus effects a software commons, since the software is available to all to use, and this software commons has become a critical raw material fueling the digital age.

More recently, Stallman's idea has been copied by others seeking to rebuild a commons in cyberspace. The Wikipedia project, for example, has built—to the astonishment of most—an extraordinary online encyclopedia solely through the volunteer efforts of thousands, contributing essays and edits in a public wiki. The product of that work is now protected perpetually (yes, I know, only for a "limited time," but don't correct *me* about that little detail) through a copyright license that, like the GPL, requires any modification to be distributed freely as well. (More on Wikipedia in Chapter 12.)

And so too has Creative Commons used private law to build an effective public commons. Again, following Stallman, Creative Commons offers copyright holders a simple way to mark their creative work with the freedoms they intend it to carry. That mark is a license which reserves to the author some rights, while dedicating to the public rights that otherwise would have been held privately. As these licenses are nonexclusive and public, they too effectively build a commons of creative resources that anyone can build upon.

Though I have spent a great deal of my time helping to build the Creative Commons, I still believe private action alone is not enough. Yet there is value in learning something from what this private action produces, as its lesson may help policy makers recraft copyright law in the future.