

CHAPTER 7: CREATIVITY IN REAL-SPACE

There was a time before the Internet. Innovation and creativity were different then. I don't mean that creators were different then or that the process of creativity has changed. But the constraints on creativity and innovation were different then. This difference can be expressed at each layer of Benkler's system. Because the physical, and code, and content layers were differently controlled, the opportunities for innovation were different.

We all know about these differences in the constraints among these layers. They are all obvious, if a bit in the background. They flow directly from the nature of real constraints within a scarcity-based economy. They are not the product of conspiracy or the will of evil minds. They are importantly unavoidable, at least in real-space.

My aim in this chapter is to remind you of these things that we all know. I will rehearse the constraints on innovation that flow from the character of these different layers of communication in real-space, so that we can better see how they have changed.

In real-space. It is this qualification that we must become self-conscious about. Our intuitions about property, and about how best to order society, are intuitions built in a particular physical world. We have learned a great deal about how best to order that world, given the physics, as it were, of that particular world.

But the physics of cyberspace are different. The character of the constraints is different. So while there may be good reason to carry structures that define real-space into cyberspace, we should not assume those structures automatically map. The different physics of cyberspace means that the rules that govern that space may be different as well.¹

¹ As Judge Posner writes, distinguishing the rules for land from the rules for copyrighted material,

One reason [the two are different] is that it is more inefficient to have unowned land lying around (say, as the result of the expiration of a time-limited property right) than to have unowned intellectual property. Ideally, all land should be owned by someone, to prevent the congestion externalities that we discussed in connection with the natural pasture from arising. But ... there is no

A different physics. I'm not talking about science fiction or about ideas that you've never considered before. Indeed, we've already seen a careful translation of real-space constraints into the physics of a very different world — the world of ideas. Jefferson made that translation in his writing about the nature of patent. My argument is nothing more (and certainly much less) than Jefferson's. The world we must consider is partway between the world of ideas that he describes and the world of things that colors our intuitions. Cyberspace is between these two worlds. It offers not quite the freedom of the world of ideas, though it offers much more of that freedom than the world of things.

In the balance of this chapter, I want to make explicit constraints in the world of things, so that we better see how these constraints have affected our thought about the world of ideas, and hence also about cyberspace.

One final note. My argument is not that all constraints are corrupting of something called "creativity." Certain constraints obviously enable creativity. The constraints of the classical form gave us Mozart and much of Beethoven. The aim is therefore not to find the world without constraint; it is to remove the constraints that might otherwise inhibit innovation. Just because it is good that sonnet forbid rambling paragraphs, it doesn't follow that a tax on books would inspire better writing.

Creativity in the Dark Ages

Put yourself back in the dark ages, the time before the Internet took off — say, the 1970s — and ask: What was the environment for creativity then? What was required of a creator or innovator to bring his or her creativity to market? What limits were imposed? I want to consider this question in two contexts — first the arts and then commerce.

The Arts

We can understand the environment for creativity in the arts with the same three layers that Benkler describes when talking of a communications system. Like a communications system, creativity in the arts is affected by constraints at the physical, code,

parallel problem concerning information and expression.
A's use of some piece of information will not make it
more costly for B to use the same information.

Richard A. Posner, *Economic Analysis of Law* (Boston: Little, Brown, 4th ed. 1992) 41.

and content layers. To author, or to create, requires some amount of *content* to begin with, to which the author adds a *creative component*, which, for a few, is then *published* and *distributed*.

Content

The content an author must draw upon varies with the “writing.” Some part is new — this is the part we think of as “creative.” But as many have argued, we’ve come to exaggerate the new and forget that a great deal in the “creative” is actually old.² The new builds on the old, and hence depends, to a degree, on access to the old. Academics writing textbooks about poetry need to be able to criticize and hence, to some degree, use the poetry they write about. Playwrights often base their plays upon novels by others. Novelists use familiar plots to tell their story. Historians use facts about the history they retell. Filmmakers retell stories from our culture. Musicians all write within a genre that itself determines how much of the past content it needs to be within that genre. (There is no such thing as jazz that does not take from the past.) All of this creativity depends in part on access to, and use of, the already created.

In our present legal regime, some of this content is free; some is controlled. A poet has a copyright on his or her poetry. Others cannot simply take and reproduce it without the copyright holder’s permission. The same with plays and novels. A play that is close enough to the plot of a novel is a derivative work. Copyright law gives the copyright holder control over these derivative works. Musical chords cannot be controlled; the design of public buildings cannot be copyrighted. These bits of content in these traditions are free, even if the control created by copyright is strong.

But this control is still limited — indeed, it is *constitutionally* limited. While a poet or author has the right to control copies of his or her work, that right is limited by the rights of “fair use.” Regardless of the will of the owners of a copyright, others have a defense against copyright infringement if their use of the copyrighted work is within the bounds of “fair use.” Quoting a bit of a poem to demonstrate how it scans, or making a copy of a chapter in a novel for one’s own critical use — these are

² “Works are *not* crafted out of thin air.” James Boyle, *Shamans, Software, and Spleens: Law and the Construction of the Information Society* (Cambridge, Mass.: Harvard University Press, 1996) 57.

paradigmatic examples of use that is “fair” even if the copyright owner forbids it.

A similar limitation protects the historian. For content to be controlled, it must be “creative.” Facts on their own are not “creative.” As the Supreme Court has said, “[T]he sine qua non of copyright is originality. To qualify for copyright protection, a work must be original to the author....[But] facts do not owe their origin to an act of authorship. The distinction is one between creation and discovery.”³ Thus, facts remain in the commons for anyone to draw upon — even if these facts were only discovered because of the hard work of some investigator. Hard work does not entitle someone to a copyright. Only “creativity” does. Thus facts remain a resource that — constitutionally — cannot be subject to a system of legal control.

So too with all creative works — eventually. Disney, for example, did not license the right to make *The Hunchback of Notre Dame* or *Pocahontas*. These works, though originally copyrighted, are no longer subject to copyright’s control. Copyright is, in the United States, at least, constitutionally required to be for a “limited time[.]” After that limited time, the work falls into the public domain — free of restraint, so that “second comers,” as Judge Learned Hand described them, “might do a much better job than the originator” with the original idea.⁴

Or at least that’s the theory, though Congress has done its best in recent years to ignore this theory. The distinctive feature of modern American copyright law is its almost limitless bloating — its expansion both in scope and in duration. The framers of the original Copyright Act would not begin to recognize what the act has become.

Scope: The first Copyright Act gave authors of “maps, charts, and books” an exclusive right to control the publishing and vending of these works, but only if their works had been “published,” only after the works were registered with a copyright registry, and only if the authors were Americans. (Our outrage at China notwithstanding, we should remember that before 1891, the

³ Feist Publications, Inc. v. Rural Telephone Service Co., Inc., 499 U.S. 340, 345-47 (1991).

⁴ Siva Vaidhyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How It Threatens Creativity* (New York: New York University Press, 2001) 203.

copyrights of foreigners were not protected in the United States. We were born a pirate nation.)⁵

This initial protection did not restrict “derivative” works: one was free to translate an original work into a foreign language,⁶ and one was free to make a play out of a novel without the original author’s permission. And because of the burdens of registering, most works were not copyrighted. Between 1790 and 1799, 13,000 titles were published in America, but only 556 copyright registrations were filed.⁷ The vast majority of creative work was free for others to use; and the work that was protected was protected only for limited purposes.

Time, with a little help from lobbyists, works changes. After two centuries of copyright statutes, the scope of copyright has exploded, and the reach of copyright is now universal. There is no registration requirement — every creative act reduced to a tangible medium is now subject to copyright protection. Your e-mail to your child or your child’s finger painting: both are automatically protected.

This protection is not just against competing publications. The target is not simply piracy. Any act of “copying” is presumptively regulated by the statute; any derivative use is within the reach of this regulation. We have gone from a regime where a tiny part of creative content was controlled to a regime where most of the most useful and valuable creative content is controlled for every significant use.

⁵ The United States finally extended copyright protection to foreign publishers through the International Copyright Act of 1891, ch. 565, § 13, 26 Stat. 1110 (1891). Before 1891, “the United States was notorious for its singular and, in many regards, cavalier attitude toward the intellectual property of foreigners.” William P. Alford, *Making the World Safe for What? Intellectual Property Rights, Human Rights and Foreign Economic Policy in the Post-European Cold War World*, 29 *New York University Journal of International Law & Politics* 135, 146 (1997). See also Jessica Litman, *Digital Copyright* (Amherst, N.Y.: Prometheus Books, 2000) 15.

⁶ Richard A. Posner, *Law and Literature* (Cambridge, Mass.: Harvard University Press; revised and enlarged ed., 1998) 389. The first United States case to decide the question comes in 1853, when a Circuit Court held that the copyright to Uncle Tom’s Cabin did not reach a German translation of the same work. Vaidhyanathan, 92-93.

⁷ John Tebbel, *A History of Book Publishing in the United States, The Creation of an Industry 1630-1865* (R.R. Bowker, 1972) 141.

Duration. The first Congress to grant copyright gave authors an initial term of 14 years, which could be renewed for 14 years if the author was living. The current term is the life of the author plus 70 years — which, for an author like Irving Berlin would mean a protection of 140 years. More disturbingly, we have come to this expanded term through an increasingly familiar practice in Congress of extending the term of copyright both prospectively (to works not yet created) and retrospectively (to works created and still under copyright).

These extensions are relatively new. In the first hundred years, Congress retrospectively extended the term of copyright once. In the next fifty years, it extended the term once again. But in the last forty years, Congress has extended the term of copyright retrospectively eleven times. Each time, it is said with only a bit of exaggeration, that Mickey Mouse is about to fall into the public domain, the term of copyright for Mickey Mouse is extended.⁸

You might think that there is something a bit unfair about a regime where Disney can make millions off stories that have fallen into the public domain but no one else but Disney can make money off Disney's work — apparently forever. You'd be right about that, but we'll consider the fairness (and more important, the constitutionality) in greater detail later on. It is enough for now simply to recognize that even if the scope of controlled content has grown, in principle there is to be a constitutional limitation on this expansion. Some content is to remain in the commons, even if most useful content remains subject to control.

Control, as I have argued, is not necessarily bad. Copyright is a critical part of the process of creativity; a great deal of creativity would not exist without the protections of the law. Without the law, the incentives to produce creative work would be vastly reduced. Large-budget films could not be produced; many books

⁸ These laws were: Pub. L. No. 87-668, 76 Stat. 555 (1962); Pub. L. No. 89-142, 79 Stat. 581 (1965); Pub. L. No. 90-141, 81 Stat. 464 (1967); Pub. L. No. 90-416, 82 Stat. 397 (1968); Pub. L. No. 91-147, 83 Stat. 360 (1969); Pub. L. No. 91-555, 84 Stat. 1441 (1970); Pub. L. No. 92-170, 85 Stat. 490 (1971); Pub. L. No. 92-566, 86 Stat. 1181 (1972); Pub. L. No. 93-573, title I, § 104, 88 Stat. 1873 (1974).

would not get written.⁹ Copyright is therefore an integral and crucial part of the creative process. And as it has expanded, it has expanded the opportunities for creativity.

But just because some control is good it doesn't follow more is better.¹⁰ As Judge Posner has written, "[T]he absence of copyright protection is, paradoxical as this may seem, a benefit to authors as well as a cost to them."¹¹ It is a benefit because, as we've

⁹ On books, see Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 *Harvard Law Review* 281 (1970) (acknowledging the economic rationale for copyright protection of books and films, but not software). The MPAA estimates the average cost of a feature film (including studio overhead and capitalized interest) was \$51.5 million in 1999. See MPAA, MPAA Average Negative Costs, Slide 14 of 44 (visited June 21, 2001) (<http://www.mpaa.org/useconomicreview/2000Economic/slide.asp?ref=14>).

¹⁰ As Yochai Benkler writes, "[M]ainstream economics very clearly negates the superstition that if some property rights in information are good, then more rights in information are even better." Yochai Benkler, *A Political Economy of the Public Domain: Markets in Information Goods Versus the Marketplace of Ideas*, in *Expanding the Boundaries of Intellectual Property: Innovation Policy for the Knowledge Society* 267 (Oxford: Oxford University Press; Rochelle Cooper Dreyfuss & Diane Leenheer Zimmerman eds., 2001) 271. As Vaidhyanathan argues,

Through a series of case studies in different media through the 20th Century, it argues for 'thin' copyright protection: just strong enough to encourage and reward aspiring artists, writers, musicians, and entrepreneurs, yet porous enough to allow full and rich democratic speech and the free flow of information.

Vaidhyanathan, 8.

The skepticism among economists about perfect or extremely strong copyright protection is well known. For an expansive economic account, see Richard Watt, *Copyright and Economic Theory: Friends or Foes?* (Cheltenham, UK; Northampton, Mass.: E. Elgar, 2000). For a rich philosophical survey of justifications for copyright, see Peter Drahos, *A Philosophy of Intellectual Property* (Aldershot; Brookfield, Vt.: Dartmouth Pub. Co., 1996).

¹¹ Posner, *Law and Literature*, 391. A related point is made by Watt, who describes conditions under which piracy of copyrighted work is in fact favorable to the copyright owner. See Richard Watt, *Copyright and Economic Theory: Friends or Foes?* (Cheltenham, UK; Northampton, Mass.: E. Elgar, 2000) 58-67, 201 ("some copyright 'piracy' is highly likely to be socially efficient"). As Watt concludes, Economic theory then is guilty of pointing out that there exist cases in which legal copyright protection hampers rather than help society in

seen already, creative works are both an input and an output in the creative process; if you raise the cost of the input, you get less of the output.

More important, limited protection has always been the rule. Never has Congress embraced or the Supreme Court permitted a regime that guaranteed perfect control by copyright owners over the *use* of their copyrighted material. As the Supreme Court has said, “[T]he Copyright Act does not give a copyright holder control over all uses of his copyrighted work.”¹²

Instead, Congress has struck a balance between assuring that copyright owners are compensated and assuring that an adequate range of material remains in the public domain for others to draw upon and use. And this is especially true when Congress has confronted new technologies.

Consider the example of “piano rolls.” In the early 1870s, Henri Fourneaux invented the player piano, which recorded music on a punch tape as a pianist played the music.¹³ The result was a high-quality copy (relative to the poor quality of phonograph recordings at the time) of music, which could then be copied and played any number of times on other machines. By 1902, there were “about seventy-five thousand player pianos in the United States, and over one million piano rolls were sold.”¹⁴

Authors of sheet music complained, saying that their content had been stolen. In terms that echo the cries of the

general. Perhaps more surprisingly, economists can show that legal copyright protection can also hamper copyright holders and producers of originals themselves. Hence, “economic theory can perhaps best be thought of as throwing out a warning to copyright advocates, that they should take care not to lobby for policy that ends of damaging the interests of copyright holders, or those of the society in general.” See *Ibid.*, 200.

¹² *Twentieth Century Music Corp. et al. v. Aiken*, 422 U.S. 151, 154-5 (1975).

¹³ While Fourneaux is credited with inventing the first player piano, in 1902 Melville Clark was the first to create one with the full 88-key range of the standard piano. Clark was also one of the first to produce the player and the piano as a self-contained unit. See Harvey Roehl, *Player Piano Treasury: the Scrapbook History of the Mechanical Piano in America as Told in Story, Pictures, Trade Journal Articles and Advertising* (Vestal, NY: Vestal Press 1961); Arthur W.J.G. Ord-Hume, *Pianola: The History of the Self-Playing Piano* (London: George Allen & Unwin, 1984).

¹⁴ Edward Samuels, *The Illustrated Story of Copyright* (New York: St. Martins Press, 2000) 34.

recording industry today, copyright holders charged that these commercial entities were making money off their content, in violation of the copyright law.

The Supreme Court disagreed. Though the content the piano player played was taken from sheet music, it was not, the Court held, a “copy” of the music that it, well, copied.¹⁵ Piano roll manufacturers (and record companies, too) were therefore free to “steal” the content of the sheet music to make money with their new inventions.

Congress responded quickly to the Court’s decision by changing the law. But the change was an interesting compromise. The new law did not give copyright holders perfect control over their copyrighted material. In granting authors a “mechanical reproduction right,” Congress gave authors the exclusive right to decide whether and on what terms a recording of their music could be made. But once a recording had been made, others had the right (upon paying two cents per copy) to make subsequent recordings of the same music — *whether or not the original author granted permission*. This was a “compulsory licensing right,” which Congress granted copiers of copyrighted music to assure that the original owners of the copyrighted works would not get too much control over subsequent innovation with that work.¹⁶

¹⁵ *White-Smith Music Publishing Co. v. Apollo Co.*, 209 U.S. 1, 21 (1908).

¹⁶ Congress’s initial statute was Act of March 4, 1909, ch. 320(e), 35 Stat. 1075 (1909), superseded by 17 U.S.C. §115 (1988). See generally Fred H. Cate, *Cable Television and the Compulsory Copyright License*, 42 Federal Communications Law Journal 191 (1990); C.H. Dobal, *A Proposal to Amend the Cable Compulsory License Provisions of the 1976 Copyright Act*, 61 Southern California Law Review 699 (1988); Paul Glist, *Cable Copyright: The Role of the Copyright Office*, 35 Emory Law Journal 621 (1986); Stanley M. Besen, Willard G. Manning, Jr. & Bridger M. Mitchell, *Copyright Liability for Cable Television: Compulsory Licensing and the Coase Theorem*, 21 Journal of Law & Economics 67 (1978).

Robert Merges has argued that compulsory rights do create problems in contexts such as this, and that some property rights will induce the creation of independent institutions that could most cheaply negotiate the rights. See Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 California Law Review 1293 (1996); Robert P. Merges, *Institutions for Intellectual Property Transactions: The Case of Patent Pools*, in *Expanding the Boundaries of Intellectual Property* (Oxford: Oxford University Press, Rochelle Cooper Dreyfuss & Diane Leenheer Zimmerman eds., 2001) 131. Ian Ayres and Eric Talley reach a very different conclusion. See Ian Ayres and Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement To Facilitate Coasean Trade*, 104 Yale Law Journal 1027, 1092-

The effect of this compromise, though limiting the rights of original authors, is to expand the creative opportunity of others. New performers had the right to break into the market, by taking music made famous by others and rerecording it, after the payment of a small compulsory fee. Again, the amount of this fee was set by the statute, not by the market power of the author. It therefore was a far less powerful “exclusive right” than the exclusive right granted to other authors.¹⁷

This balance is the rule, not the exception, when Congress has confronted a new technology affecting creative rights. It did the same thing with the first real “Napster” in our history — cable television. Cable TV was born stealing the content of others and reselling that content to consumers. Suppliers of cable services would set up an antenna, capture the commercial broadcasts made by television stations, and then resell those broadcasts to their customers.

The copyright holders did not like this “theft.” Twice they asked the Supreme Court to shut it down. Twice the Court said no.¹⁸ So it fell to Congress to strike a balance between cable TV and copyright holders. Congress in turn followed the model set by player pianos: cable TV had to pay for the content it broadcast, but the content holders did not have an absolute right to grant or deny the right to broadcast its content. Instead, cable TV got a compulsory licensing system to guarantee that cable operators would be able to get permission to broadcast content at a relatively modest level. Thus content holders, or broadcasters, couldn’t leverage their power in the television broadcasting market into power in the cable services market. Innovation in the latter field was protected from power in the former.¹⁹

94 (1995) (arguing a liability rule will induce parties to reveal their true valuations and hence is more likely to produce a Coasean trade).

¹⁷ See Copyright Act of 1909, Ch. 320, § (e), 35 Stat. 1075 (1909), superseded by 17 U.S.C. § 115 (1982).

¹⁸ *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390 (1968) and *Teleprompter Corp. v. Columbia Broadcasting System, Inc.*, 415 U.S. 394 (1974).

¹⁹ The compulsory right was incorporated in §111 of the 1976 Act. As Paul Goldstein has written, “more explicitly than any other aspect of the [1976 Act], it commits its operation to assumptions about industry structure and regulation.” *Preempted State Doctrines, Involuntary Transfers and Compulsory Licenses: Testing*

These are not only examples of Congress striking a balance between compensation and control. For a time there was a compulsory license for jukeboxes; there is a compulsory license for music and certain pictorial works in noncommercial television and radio broadcasts; there is a compulsory licensing scheme governing satellite television systems, digital audio home recorders, and digital audio transmissions.²⁰

These “compromises” give the copyright holder a guarantee of compensation without giving the copyright holder perfect control over its use of copyrighted material. In the language of modern law and economics, these rules protect authors through a “liability rule” rather than a “property rule.”²¹ They are perfect instances of the special character of copyright’s protection, as they represent the aim to give authors not perfect control of their copyrighted work, but a balanced right that does what the Constitution requires — “promote[] progress.”

Thus while Congress has expanded the scope of rights protected by the Copyright Clause, as technologies have changed, it has balanced rights of access against these increases in

the Limits of Copyright, 24 U.C.L.A. Law Review 1107, 1127-35 (1977). See also 4 Melville B. Nimmer & David Nimmer, *Nimmer on Copyright*, §8.18[E].

²⁰ See generally Samuels, 181-82. The satellite TV retransmission right was enacted in 1988. See Satellite Home Viewer Act, Act of Nov. 16, 1988, Pub. L. No. 100-667, 102 Stat. 3935, codified at 17 U.S.C. § 119 (supp. 1993). Jukeboxes were covered by the 1976 act, 17 U.S.C. §116. That provision was in tension with the Berne Convention, which forbid compulsory licenses for public performances. In 1989, Congress added §116A which added negotiated agreements between performance rights associations. In 1993, Congress then repealed the original §116, and renamed §116A to §116. See Scott M. Martin, *The Berne Convention and the U.S. Compulsory License for Jukeboxes: Why the Song Could Not Remain the Same*, 37 *Journal of the Copyright Society U.S.A.* 262 (1990).

²¹ As Calabresi and Melamed describe, a resource is protected with a liability rule when one using the resources must pay compensation for the use. The resource is protected by a property rule when one using the resource must negotiate for before it can be taken. Guido Calabresi & Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 *Harvard Law Review* 1089, 1092 (1972). When a copyright is protected by a liability rule, those wishing to use the resource can take the resource, so long as they pay the liability price. When it is protected by a property rule, taking the resource without paying for it can make one criminally liable. Robert P. Merges, *Institutions for Intellectual Property Transactions: The Case of Patent Pools*, in *Expanding the Boundaries of Intellectual Property*, 131-32 (R. Dreyfuss ed., Oxford: Oxford Univ. Press. 2001).

protection. These balances, however, are not, on balance, even: though limits have been drawn, the net effect is increased control. The unavoidable conclusion about changes in the scope of copyright's protections is that the extent of "free content" — meaning content that is not controlled by an exclusive right — has never been as limited as it is today. More content is controlled by law today than ever in our past. In addition to limited compulsory rights, an author is free to take from work published before 1923; is free to take noncreative work (facts) whenever published; and is free to use, consistent with fair use, a limited degree of others' work. Beyond that, however, the content of our culture is controlled by an ever expanding scope of copyright.

Physical

At the content layer, I've argued, the law aims to strike a balance between access and control. Copyrights grant control, but copyrights are constitutionally and statutorily limited to assure some uncontrolled access. Some parts are controlled; some parts remain free.

No such balance exists at the physical layer, and for the most part, that's a good thing, too. Writing gets produced and published on paper; paper is a physical good; in our economy, physical goods are fully controlled by the market. Films require film stock; nondigital film stock is extremely expensive; no right to steal this physical stock exists in our society. Market control is the rule at the physical layer; access is at the pleasure of the property owner.

This control is largely benign, at least where markets are competitive. If the market is not competitive, then power at the physical layer can become harmful. Control at the physical layer can, in at least some contexts, be leveraged into another layer.²²

²² "Chicago School" analysts argued that a monopolist possesses a fixed amount of market power, and therefore can extract only a fixed amount of monopoly profit from consumers, whether from one market or several. On this basis, they concluded that leverage of monopoly power from one market into another is impossible. See, e.g., Robert H. Bork, *The Antitrust Paradox: A Policy At War With Itself* (New York: Basic Books, 1978); Richard A. Posner, *Antitrust Law: An Economic Perspective* (Chicago: University of Chicago Press, 1976). More recent economic analyses have demonstrated several mechanisms by which market power in one market can be used to harm competition in another market. As Steven Salop and Craig Romaine put it:

But for this danger, antitrust law is an adequate remedy. As long as the other layers remain relatively free, the control here is not inherently troubling.

The problem, of course, is that these other layers are not relatively free — or at least they weren't free in the dark ages. They were increasingly not free for content; they are especially not free at the layer of code.

Code

The core constraint on artistic creativity in real-space is at the code layer — the constraint on whose work gets produced and distributed where.

The writer becomes an author when his or her work is published. Publication is a process controlled by editors. Editors at *The New York Times* decide what goes on their pages. Editors at

“Post-Chicago economic analysis has suggested that there are a number of limiting assumptions required for this single monopoly profit theory to apply. When these assumptions are relaxed, the theory's strong result and the public policy implications no longer hold. There are a number of common market situations in which integration into a second market may raise anticompetitive concerns. These include markets in which the first monopoly is regulated, markets that are characterized by economies of scale and scope and in which the inputs are not used in fixed proportions, and markets with multiple types of buyers. In such markets, it is possible for a monopolist to profitably extend its power into a second market and harm consumers.” (footnote omitted)

Steven C. Salop & R. Craig Romaine, *Preserving Monopoly: Economic Analysis, Legal Standards, and Microsoft*, 7 *George Mason Law Review* 617, 625 (1999). See also Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 *American Economic Review* 837 (1990) (demonstrating multiple situations in which foreclosure of the tied market can occur, including a case where the monopolist can pre-commit to the tie through product design or production processes); Janusz A. Ordover, Garth Saloner, and Steven C. Salop, *Equilibrium Vertical Foreclosure*, 80 *American Economic Review* 127 (1990) (integration across multiple products permits competitor to exclude unintegrated rival). See also Louis Kaplow, *Extension of Monopoly Power Through Leverage*, 85 *Columbia Law Review* 515 (1985) (expressing early skepticism about the Chicago School analysis). See also Carlton & Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries* (Sept. 1998 working paper) (arguing that tying deters entry in primary tying market as well, in addition to providing leverage into tied markets).

Basic Books decide which books they will print. No one has a right to enter Basic Books and steal access to their printing presses. Nor does anyone have a right to demand that Basic Books transport their texts. The production and distribution of printed material is a wholly privatized activity.

The same is true for music. Rock bands are plenty; many write their own content; most of that content (fortunately, perhaps) never gets heard beyond a neighborhood garage. Whether the work of a musician gets distributed broadly depends upon the decisions of publishers. Record companies choose what gets floated in the market; radio stations (in effect) get paid to play what record companies choose.²³

So too with television. You are free to buy commercial time on television, and in some markets you are free to buy program time. But unless you're Ross Perot, these freedoms don't matter much. What gets played on TV is the decision of network owners; what gets broadcast on cable is the choice of cable companies.²⁴

These constraints at the code layer plainly affect the choice of creators to create or not. If the editors of a newspaper are conservative, the liberal columnist is less likely to submit a column to that paper. If newspapers generally are unwilling to be critical of U.S. policy, then authors who would criticize U.S. policy are less likely to waste their time penning the criticism. Communists don't waste their time writing Marxist screenplays much. Only the deeply ill informed waste their time translating Adam Smith's work for the silver screen. The author is constrained by the

²³ See Douglas Abell, *Pay-for-Play*, 2 *Vanderbilt Journal of Entertainment Law & Practice* 52 (2000).

²⁴ See 17 U.S.C. §111 (2000). The statute initially set up a Copyright Royalty Tribunal, but that was abolished in favor of private negotiation in 1993. See Robert P. Merges, Peter S. Menell & Mark A. Lemley, *Intellectual Property in the New Technological Age* (Gaithersburg: Aspen Law & Business, 2nd ed. 2000) 481.

Congress initially tried to balance this effective control by establishing rules of access such as the "Fairness Doctrine." See Jerry Kang, *Communications Law and Policy: Cases and Materials* (Gaithersburg, MD: Aspen Law & Business, 2001) 85-86. These rules have been drawn into constitutional doubt, see, for example, *Miami Herald Publishing Co. v. Tornillo*, 418 U.S. 241 (1974), *Huddy v. FCC*, 236 F.3d 720, 723 (D.C. Cir. 2001), and are generally viewed as a failure. See L.A. Scot Powe, *American Broadcasting and the First Amendment* (Berkeley: University of California Press, 1987) 197-209.

expectation of how the code layer will respond. And the code layer, in these dark ages, at least, was importantly controlled. Though the range of outlets expanded dramatically,²⁵ the concentration in ownership among those outlets increased as well. And the net is an important constraint on what gets made.

Obviously, the code layer interacts with the physical and the content layers. NBC gets to decide what it will broadcast. Because of trespass laws, I can't break into NBC and interrupt the evening news. If I do, I will be arrested for trespass. There is no First Amendment right that I can assert to trespass on NBC's property.

Likewise, NBC's right at the code layer is largely protected against state control by the First Amendment. Congress probably does not have the power to pass a law requiring that NBC give me access to their station. Editorial judgments of television executives is a constitutionally protected right at the code layer.

Commerce

Issues of control matter not just to artists, and the dark ages did more than constrain budding Frank Sinatras. Indeed, among

²⁵ As FCC Chairman Powell has described it,

In 1969, broadcasting consisted of a handful of radio stations in any given market plus 2 or 3 television stations affiliated with one of the three major networks. Occasionally, larger markets had an independent station too. Three major networks held more than 90% of the market for video programming. Not so anymore. Not only has the market share of the three largest networks been eroded by cable programming, the last time I looked there were about seven "declared" national television networks ... Obviously, things have changed a lot. ... In our current technological environment, it can reasonably be argued that there is a bounty, not a scarcity of outlets for expressing one's viewpoint. In the traditional broadcasting arena, the numbers are impressive: There are 1207 commercial TV stations and 367 non-commercial stations. There are also some 5000 TV translators and 2000 low power TV stations. In addition, there are almost 12,500 radio stations.

Michael K. Powell, *Willful Denial and First Amendment Jurisprudence*, Remarks Before the Media Institute (Apr. 22, 1998) (transcript *available at* <http://www.fcc.gov/Speeches/Powell/spmcp808.html>).

the most significant aspects of the Internet revolution has been the liberation it has given to commerce — not just to commerce in the mode of IBM or GM, but to commerce of the different. The commons of the Net exploded opportunities for commerce that would not have existed. And this explosion was not, given the architecture of telecommunications before the Net, predicted.

We can see this point quite quickly in two contexts that have been dramatically affected by the Internet — one in the context of coding, the other, in the expansion of the market. Both of these contexts were quite different before the Internet, again because of the constraints imposed upon them by the architectures of real-space. The opportunities of both have been changed as the technology of Internet has changed.

Coding

In 1972, Robert Fano, then a researcher at MIT, published a dark and pressing essay titled “On the Social Role of Computer Communications.”²⁶ Fano’s fear was that access to computing resources would be increasingly centralized, and that this centralization would do a great damage to democracy. As the power to understand and manipulate data about the world was held by a smaller and smaller number of people, the skew to democracy caused by this concentration would only increase: what was needed, Fano argued, was a different *architecture* for computer communications, one not centralized within a small number of organizations, but instead made available generally to many.²⁷

Fano had an idea of how to build this different architecture, and what this different architecture would look like. To build it would require state intervention, to break up the concentrations in computer communications that had emerged. The network thus built would look much like the Internet.

Fano was wrong (though understandably so) about the future. But he wasn’t wrong about the past. For computers at the time were expensive devices. Except for universities, programming for them required that you work within an institution that could

²⁶ See Robert M. Fano, *On The Social Role of Computer Communications*, 60 Proceedings of the IEEE, September 1249 (1972).

²⁷ Simson L. Garfinkel, *Architects of the Information Society: Thirty-Five Years of the Laboratory for Computer Science at MIT* (Cambridge, Mass.: MIT Press, 1999) 8-9.

afford to own one of these devices. If you wanted to work on a large-scale coding project, you needed to be within a company that was producing large-scale code.

For many people, of course, that wasn't a terrible thing. IBM and AT&T were powerful and well-paying companies. Most would consider it a great privilege to work for either.

But if you were not the sort likely to be able to work in these places — if you lived in South Dakota, where there weren't many IBM coding plants, or in China, where not many coding companies were allowed — then this reality was an important constraint. To author code in this world required working within large, typically American, corporations. And for many, this meant they could not author code at all. Just as it is with research in nuclear science today, the ability to do this research was limited to those who worked for specific organizations.

Again, this barrier is easy to understand. No conspiracy is needed to explain it. Computers were valuable resources; not every Joe could or should have access to play around with them. The economic constraints and processing constraints mean that the system couldn't well leave itself open for others to take. The restrictions here were unfortunate and unintended consequences of economic constraints imposed elsewhere.

Here again we can understand these constraints in terms of Benkler's model. The physical layer of the "computer-communications" architecture was controlled; the very nature of its expense forced users to locate to the machines. Locating the machines in particular places made it easy to control access. The logic of the machine may have been open, but only those with permission were allowed in the "machine room." And finally, while the source code for these machines may not have been controlled (content layer, open), the small number of these machines meant that the value of the open code was limited. Coding, and the creativity that has been realized in coding, was dictated by this architecture that mandated control.

This feature of the dark ages, then, limited the supply of resources to a market of production. Only those in a particular place, only those willing to work within a given structure, could work within coding projects. A wide range of talent was thereby excluded from the practice of coding. The ease with which those resources might be shared with many outside a single organization was limited by the technologies of computer communication that Fano described.

Markets

So too are markets constrained. Technology most dramatically affects the extent of the market. The more interconnected, the easier it is for goods from one area to affect the price of goods in another area. Geography is a physical constraint on that interconnection — in real-space, greater distance means greater cost. But information supported by broad distributional channels can balance the constraint of geography.

Competition laws and constitutional norms keep this transportation system competitive. Competition laws make it hard for distributors to restrict or control distribution. The Dormant Commerce Clause of the U.S. Constitution makes it hard for states to bias distribution to favor themselves. These legal constraints balance natural tendencies among commercial and political actors. They produce a relatively competitive interstate market for goods and services.

Still, real-space constrains. Even if the market were perfectly competitive, the cost of transportation and the high cost of information restrict the market's scope. If you want to sell very weird widgets, and only a hundred thousand people are within range, then you're not likely to be able to sell enough widgets to make it worth while. But if you had the world as your market — if code layer facilitated broad distribution of selective information about widgets, thus lowering the cost of information — then you might have a market large enough to make your weird widget factory work. As Ronald Coase puts it:

People talk about increases in improvements in technology, but just as important are improvements in the way in which people make contracts and deals. If you can lower the costs there, you can have more specialization and greater production.... By improving the way the market works, you can produce immense benefits, not because it invents new technologies, but because it enables new technologies to be used.²⁸

The net of these layers of control in real-space is relatively simple to map. Creativity may well be inspired by the protection these systems of control establish. But it is also constrained by the

²⁸ Ronald Coase, *Looking for Results*, interview with Thomas W. Hazlett, Reason, January 1997.

limits that these systems of control impose. I can write what I will, but what gets published is a function of what publishers like. I can sing in the shower, but before we sing “Happy Birthday” in a large crowd, we had better call a lawyer.²⁹ My home movies can be shown in my living room, but art students should not expect their films to be shown in theaters. And freedom of speech notwithstanding, no one has the right to fifteen minutes of NBC’s airtime. Creativity in the dark ages lives in a world largely without a commons. Permission of others is the necessary condition of one’s work being seen elsewhere.

Now again, unlike Lenin’s Russia, these systems of control are not the product of conspiracy. The constraints that require control in these different markets for resources are real. Economics is the science of choice in the context of scarcity; it is a positive (if dismal) science that takes the world as it finds it. We could no more will a world where real-space printing presses were free than we could will a spacecraft that could fly as fast as the starship *Enterprise*.

So by contrasting this economy governed by layers of control with an economy governed by large swaths of the commons, I don’t mean to criticize every system of control. Whether control is necessary for a particular good in a particular context depends upon the context — upon the technologies of that context and the character of the resource. Resources held in common in one context (among friends or in a small community) may need to be controlled in another (in a city or between tribes).

In particular, to the extent a resource is physical — to the extent it is rivalrous — then organizing that resource within a system of control makes good sense. This is the nature of real-space economics; it explains our deep intuition that shifting more to the market always makes sense. And following this practice for real-space resources has produced the extraordinary progress that modern economic society has realized.

A part, however, cannot speak for the whole, especially when changes in technology render the assumptions of the old obsolete. Even if the control model makes perfect sense in the

²⁹ See Linda Shrieves, *When It’s Your Turn, Here’s Why You’re Served a Chorus of . . . ; The Birthday Song Is Still Copyrighted and Nets Nearly \$1 Million a Year in Royalties*, Orlando Sentinel, Feb. 27, 2001 at E1.

world of things, the world of things is not the digital world. We may need fences and perfect control to assure that the world of things runs efficiently. That's what the prosperity of the market, property, and contract teaches us.

But perfect control is not necessary in the world of ideas. Nor is it wise. That's the lesson our Framers taught us — in both the limits they placed on the Exclusive Rights Clause, and the expanse of protection for free speech they established in the First Amendment. The aim of an economy of ideas is to create incentives to produce and then to move what has been produced to an intellectual commons as soon as can be. The lack of rivalrousness undercuts the justification for governmental regulation. The extreme protections of property are neither needed for ideas nor beneficial.

For here is the key: *The digital world is closer to the world of ideas than to the world of things.* We, in cyberspace, that is, have built a world that is close to the world of ideas that nature (in Jefferson's words) created: stuff in cyberspace can “freely spread from one to another over the globe, for the moral and mutual instruction of man, and improvement of his condition,” because we have (at least originally) built cyberspace such that content is, “like fire, expansible over all space, without lessening [its] density at any point, and like the air in which we breathe, move, and have our physical being, incapable of confinement, or exclusive appropriation.”

The digital world is closer to ideas than things, but still it is not quite there. It is not quite true that the stuff in cyberspace is perfectly nonrivalrous in the sense that ideas are. Capacity is a constraint; bandwidth is not unlimited.³⁰ But these are tiny flaws that cannot justify jumping from the largely free to the perfectly controlled. There are problems of coordination and constraints of scarcity. But the solution to these problems is not necessarily systems of control or better techniques of excludability. That cyberspace has flourished as it has largely because of the commons it has built should lead us to ask whether we should tilt more to the

³⁰ Or at least not yet. George Gilder has repeatedly argued that a future infrastructure based on fiber optics would provide “infinite bandwidth.” See George Gilder, *Telecosm: How Infinite Bandwidth Will Revolutionize Our World* (New York: Free Press, 2000); George Gilder, *Rulers of the Rainbow: The New Emperors of the Telecom Will Use the Infinite Spectrum of Light—Visible and Invisible—to Beef up Bandwidth*, *Forbes* ASAP, Oct. 1998, at 104; and George Gilder, *Into the Fibersphere (Fiber Optics)*, *Forbes*, Dec. 1992, at 111.

free in organizing this space rather than to the controlled that organizes real-space.

Put differently: These imperfections in the capacity of cyberspace — that together may make it more rivalrous than ideas are — should not by itself force us to treat the resources that cyberspace produces as we would treat real-space resources. If by resisting the model of perfect control we gain something important, then we should do so.

In the context of the media, we can be a bit stronger than this. Over the past twenty years, we have seen two changes in the media that seem to pull in different directions. On the one hand, technology has exploded the number of media outlets — increasing the number of television and radio stations, as well as newspapers and magazines. On the other hand, concentrations in the ownership of these media outlets have also increased. This increase in concentration especially should lead us to ask whether the control enabled in real-space should carry over to cyberspace?

The statistics about increased concentration in ownership are undeniable and extraordinary. In 1947, 80 percent of daily newspapers were independently owned; in 1989, only 20 percent were independently owned. Most of the business of the nation's eleven thousand magazines was controlled by twenty companies in 1981; in 1988, that number had fallen to three.³¹ Books are much the same. The independent publishing market was strong just thirty years ago; with Bertelsmann's purchase of Random House in 1998, the industry is now much more concentrated, dominated by just seven firms.³² The significance of this concentration in books is no doubt less than with film or other important media. There are still many independent publishers, and the range and diversity of book publishing is quite large. But the inertia is in the direction of concentration. And this inertia may be a source of concern.

³¹ Ben H. Bagdikian, *The Media Monopoly* (Boston: Beacon Press; 6th. ed., 2000) 4.

³² Robert W. McChesney, *Rich Media, Poor Democracy: Communication Politics in Dubious Times* (Urbana: University of Illinois Press, 1999) 18.

Music is even more concentrated.³³ The five largest music groups in the United States account for over 84 percent of the U.S. market.³⁴ The same is true of radio. The top three broadcasters control at least 60 percent of the stations in the top 100 U.S. markets.³⁵ The same is true in film. In 1985, the twelve largest U.S. theater companies controlled 25 percent of the screens; “by 1998, that figure was 61 percent and climbing rapidly.”³⁶ Six firms accounted for over 90 percent of theater revenues in 1997; 132 out of 148 of the “widely distributed” films in 1997 were produced by “companies that had distribution deals with one of the six majors.”³⁷ With this concentration, there has been a dramatic drop in foreign film. In the mid-1970s, foreign film accounted for 10 percent of box office receipts. By the late 1990s, the number had fallen to 0.5 percent.³⁸ Cable and television are no better. In 1999, McChesney could write that “six firms now possess effective monopolistic control over more than 80 percent of the nation, and

³³ The reasons for this increase concentration are hard to track precisely. There are a number of changes that have certainly occurred. The relaxation of rules on ownership of radio stations, for example, have exploded concentration in radio station ownership. This, in turn, has led to an increase in the modern equivalent of “payola.” See Douglas Abell, *Pay-for-Play*, 2 *Vanderbilt Journal of Entertainment Law & Practice* 52 (2000). As Boehlert describes,

There are 10,000 commercial radio stations in the United States; record companies rely on approximately 1,000 of the largest to create hits and sell records. Each of those 1,000 stations adds roughly three new songs to its playlist each week. The [independents] get paid for every one; \$1,000 on average for an “add” at a Top40 or rock station, but as high as \$6,000 or \$8,000 under certain circumstances.

Eric Boehlert, *Pay for play*, Salon, Mar. 14, 2001, <http://www.salon.com/ent/feature/2001/03/14/payola/print.html>, at 2.

³⁴ Allyson Lieberman, *Sagging Warner Music out of Tune with AOL TW*, *The New York Post*, Apr. 19, 2001, at 34 (as of April, 2001). See also Charles Mann, *The Heavenly Jukebox*, *The Atlantic Monthly* 39, 53 (Sep. 2000).

³⁵ Boehlert, 2.

³⁶ McChesney, 18.

³⁷ *Ibid.*, 17.

³⁸ *Ibid.*, 33.

seven firms control nearly 75 percent of cable channels and programming.”³⁹ Those numbers are now much more extreme.⁴⁰ Bagdikian summarizes the result as follows: “[D]espite more than 25,000 outlets in the United States, 23 corporations control most of the business in daily newspapers, magazines, television, books, and motion pictures.”⁴¹ The top firms in this set vastly outbalance the remainder. The top six, for example, have more annual media revenue than the next twenty combined.⁴²

The reasons for this increase in concentration are many. I don’t mean to argue, as many others have, that we should necessarily consider this increasing concentration inefficient or illegal. There are important efficiencies to be gained by the mergers of large media interests; important gains in coverage have also been realized. And while the conspiracy theories are many and practically unending in scope, we need not believe media conspirators are behind this radical change. The government has loosened its restrictions on concentration, sometimes for good economic reasons; technologies of transmission have changed to the great benefit of all, and the consequence has been an extraordinary concentration in media production.⁴³

³⁹ Ibid., 18.

⁴⁰ According to the National Cable Television Association, the top seven “multiple system operators” or MSO’s controlled 81% of the national cable television market at the end of 1999. <http://209.207.235.1/ncta/Msotop50.cfm>. See also, Richard Waters, “Appeals Court Overrules Curbs on Cable TV Ownership in U.S. Federal Rules,” *Financial Times*, March 3, 2001 at 7. As of March 2001, AOL Time Warner’s cable market share is about 20%, while AT&T’s share stands at 42% (including AT&T’s purchase of MediaOne Group and its 25.5% stake in Time Warner Entertainment). AT&T’s 42% market share well exceeds the FCC’s cap of 30%, leading AT&T to challenge the cap in court as being “arbitrary.” See Edmund Sanders & Sallie Hofmeister, *Court Rejects Limits on Cable Ownership; Television: Controversial 30% Cap Is Deemed Unconstitutional, but Consumer Groups Call the Decision ‘Devastating.’* L.A. Times, Mar. 3, 2001 at C1.

⁴¹ Bagdikian, 4.

⁴² Ibid., x.

⁴³ See Mike Hoyt, *With ‘Strategic Alliances,’ the Map Gets Messy*, *Columbia Journalism Review*, Jan./Feb. 2000 at <http://www.cjr.org/year/00/1/hoyt.asp>; Global Media Economics: Commercialization, Concentration and Integration of World Media Markets 19-31 (Ames: Iowa State University Press; Allan B. Albarran & Sylvia M. Chan-Olmsted eds., 1998); Dennis W. Mazzocco,

But whatever the reason, the results are staggering. And they extend beyond the mere structure of the market. They affect its character as well. The resulting mix of media is strikingly homogenous. The companies that make up the handful of international conglomerates are cookie-cutter variations of one another. Some are slightly larger in music than in film; others are slightly more American in ownership and content. But if you had to characterize the differences in philosophy or attitude among these different media conglomerates, it would be extremely hard, (unlike, for example, the situation with newspapers in Britain): there is no clear philosophical or ideological difference between them.⁴⁴

Many have quite rightly worried that this control by a few who are not very different from each other will have a significant effect on the kind of news that gets reported. Andrew Kreig tells a compelling story of the effect of chain management on an American newspaper, driving the respected *Hartford Courant* to more excessive, sensationalist reporting.⁴⁵ The paper he covers is not dissimilar from many others. There are many stories about corporate owners influencing the news within their organizations — steering the news away from stories that reflect negatively upon those corporate owners.⁴⁶ Congressman Newt Gingrich expressly recommended as much in 1997, when he told the Georgia

Networks of Power: Corporate T.V.'s Threat to Democracy (Boston, MA: South End Press, 1994) 1-8. Cf. Benjamin M. Compaine, *Distinguishing Between Concentration and Competition*, in *Who Owns the Media* 537 (Mahwah, N.J.: L. Erlbaum Associates; Benjamin M. Compaine & Douglas Gomery eds., 3rd ed. 2000); Douglas Gomery, *Interpreting Media Ownership*, in *Who Owns the Media* 507 (Mahwah, N.J.: L. Erlbaum Associates; Benjamin M. Compaine & Douglas Gomery eds., 3rd ed. 2000) 507.

⁴⁴ Bagdikian, 7. There are of course many who believe there is no necessary link between the mergers and these features of modern media. See, e.g., Steven Rattner, *A Golden Age of Competition*, in *Media Mergers* 9 (New Brunswick, N.J.: Transaction Publishers; Nancy J. Woodhull & Robert W. Snyder eds., 1998). See also Bruce M. Owen, *Economics and Freedom of Expression: Media Structure and the First Amendment* (Cambridge, Mass.: Ballinger Pub. Co., 1975).

⁴⁵ Andrew Kreig, *Spiked: How Chain Management Corrupted America's Oldest Newspaper* (Old Saybrook, Conn.: Peregrine Press, 1987).

⁴⁶ Bagdikian, 30.

Chamber of Commerce that business leaders and advertisers “ought to take more direct command of the newsroom.”⁴⁷

Even if we ignore this most blatant form of bias, if the media are owned by a handful of companies, each basically holding the very same ideals, how much diversity can we expect in the production of media content? How critical can we believe these media will become? How committed to testing the status quo is this form of organization — itself so dependent upon the status quo — likely to be?⁴⁸

You don’t need to be a radical to be worried about this trend. Even the most committed pro-market ideologues could at least hope for a broader range of competition in ideas and perspective. There is good evidence that competition improves the quality of newspapers.⁴⁹ And there is a general and broad view that the only justification for the power that media create is that there is a broad range of views with the same power.⁵⁰ No more. Never in our history has the concentration of media outlets been greater. Even a believer in the invisible hand might hope that this hand might muck things up a bit.

Something *has* mucked things up a bit. Something has entered the field in a way that could make these concentrations change — not the government or a regulation imposed by the government, but the architecture of the Internet we have been describing so far.

For the essence of this power in the handful of media companies that now dominate media internationally is control over distribution and the power it can promise artists.⁵¹ Movies run in certain places only; getting films into those places is quite hard.

⁴⁷ McChesney, 245.

⁴⁸ Compare Judge Posner’s comment: “[T]he management of a large publicly held corporation will have difficulty finding issues on which a partisan stand would not alienate large numbers of shareholders.” Posner, *Economic Analysis of Law*, 674.

⁴⁹ Bagdikian, 129.

⁵⁰ *Ibid.*, 35.

⁵¹ McChesney, 80, 179.

CDs get distributed through predictable channels of distribution — including radio stations whose choice of what to play or not to play determines which content is popular or not. Breaking into this distribution channel is likewise extremely hard.

The same is true with cable. While many thought increasing the number of cable channels would mean more valuable competition, in fact, the fragmentation of channels simply induced more commercialization. Fragmentation makes it easier to “slice and dice people demographically” and “maximize ... advertising revenues.”⁵² Cable thus does not become a source of new innovation (unsurprisingly, as we saw, because the physical, logical, and content layers are all controlled). Instead, as “one cable executive put it in 1998, ‘Most entrepreneurs have already gotten the word that the cable field is closed.’”⁵³

But the essence of the Internet that I’ve described so far is an architecture for distribution that admits of no controllers, architecture that neither needs nor permits the centralization of control that real-space structures demand. And while this lack of control won’t on its own mean Hollywood fails, it will mean that the success of any particular kind of content is more convincingly a function of the desire for that content. Or at least, as we’ll see, this is what the traditional media fears.⁵⁴

⁵² *Ibid.*, 250.

⁵³ *Ibid.*, 148.

⁵⁴ *Ibid.*, 168.

CHAPTER 11: CONTROLLING THE WIRED (AND HENCE THE CONTENT LAYER)

In the last chapter, I argued that there is a tension between control at the physical layer and freedom at the code layer, and that this tension affects the incentives for innovation. The original freedom built a commons; more control can undermine that commons; the tragedy is our forgetting the value of the free in our race to perfect control.

The same tension exists at the content layer. Some content the law treats as “owned” — copyright and patents are “intellectual property,” owned by individuals and corporations. Other content can’t be owned — either content that has fallen into the public domain or content that is outside the scope of Congress’s power under the Copyright and Patent Clause of the Constitution. Here, too, balance is important. Yet here, too, the owned chases out the unowned. The pressure to protect the controlled is increasingly undermining the scope for the free.

My aim in this chapter is to describe this dynamic and to suggest how changes that we are seeing right now will affect this dynamic. By the time this book is published, I fear the struggle I am describing will be finished. The courts will have resolved these questions, and the politicians will have no courage to interfere with this resolve. Already the endgame is clear; already property has queered the balance. Hence, already the value of this freedom will have been lost.

This chapter is meant to mirror chapter 4, “Commons Among the Wired.” Yet it is not directly about the people I spoke of in chapter 4. The “wired” who are affected by the changes I am describing here are not exactly the same “wired” who built the open source and free software movements that I spoke about there.

But in a critical sense, they are the same. Both innovate by building on the content that has gone before. Both therefore reveal how much creativity depends upon the creativity that has gone before. Both show, that is, innovation as adding something to the work of others.

In some cases, the restrictions I describe in this chapter apply directly to the innovators of chapter 4. Patent law, for example, poses one of the most significant threats to the open code

movement that there is. But in general, the changes I describe in this chapter are aimed at controlling a new generation of “wired” folks — those who see the platform of the Internet as an opportunity for a different way of producing and distributing content and those who see the content on the Net as a resource for making better and different content. The changes in this chapter are changes that reestablish control over this class of potentially wired souls.

When the Net emerged into the popular press, there was an anxiety among many about what the Net would make possible. People could do things *there* that we had discouraged or made illegal *here*.

Porn was the most dramatic example of this anxiety. The freedom of the Net meant, the world quickly learned, the freedom of anyone — regardless of age — to read the obscene. The news was filled with instances of kids getting access to material deemed “harmful to minors.” The demand of many was that Congress do something to respond.

In 1996, Congress did respond, by passing the Communications Decency Act (CDA).⁵⁵ Its aim was to protect children from “indecent content” in cyberspace. The act was stupidly drafted, practically impaling itself upon the First Amendment, but its aim was nothing new. Laws have long been used to protect children from material deemed “harmful to minors.” Congress was attempting to extend that protection here.

Congress failed. It failed because the CDA was overbroad, regulating speech that could not be regulated constitutionally. And it failed because it had not properly considered the burden this regulation would impose upon activity in cyberspace. The statute required adult IDs before adult content could be made available. But to require sites to keep and run ID machines was to burden Internet speech too severely. Congress would have to guarantee that the burden it was imposing on the Internet generally was no greater than necessary to advance its legitimate state interest — protecting children.

In 1998, Congress tried again. This time it focused on clearly regulable speech — speech that was “harmful to minors.” And it was much more forgiving about the technology that would

⁵⁵ See 47 U.S.C. § 223 (Supp. 1996); *Reno v. ACLU*, 521 U.S. 844 (1997).

permissibly block kids from “harmful to minors” speech. Still, federal courts struck down the law on the ground that the burden it would impose on the Internet generally was just too great.⁵⁶

These cases evince a distinctive attitude. Though the state interest in protecting children is compelling, courts have insisted that this compelling state interest be pursued with care. In effect, a demonstration that the regulation won’t harm the Net too broadly is required before this state interest can be promoted. Facts, and patient review, are the rule in this area of the law of cyberspace.

Keep this picture in mind as we work through the examples that follow. For the meaning of *Reno v. ACLU* is not that porn is okay for kids or that the state’s interest in enabling parents to protect their kids from porn is outdated. The Court in *Reno* was quite explicit: protecting children from speech harmful to minors is a “compelling” state interest. But these compelling interests must be advanced in ways that are consistent with the other free speech values. The state was free to advance its compelling state interest; but it was required, in so doing, not to kill the rest of the Net.

About the same time that parents were panicking about porn on the Net, copyright holders were panicking about copyright on the Net. Just as parents worried there was no way to keep control over their kids, copyright holders worried there was no way to keep control over copyrighted content. The same features of the Internet that would make it hard to keep kids from porn also made it hard to keep copyrights under control.

Both forms of panicking were premature. While it is true that the Net as it was originally built made it hard to control content (by either keeping it from kids or keeping it from being copied by kids), the Net as it was originally built is not the Net as it must be. Code made the Net as it was; that code could change. And the real issue for policy makers should be whether we can expect code to be developed that would solve this problem of control.

In *Code* I argued that, in the context of copyright, we should certainly expect such code to be developed.⁵⁷ And if it were

⁵⁶ *ACLU v. Reno*, 217 F.3d 162 (3d Cir. 2000).

⁵⁷ Lawrence Lessig, *Code and Other Laws of Cyberspace* (New York: Basic Books, 1999) 225.

developed as its architects described, then the real danger, I argued, was not that copyrighted material would be uncontrolled: the real danger is that copyrighted material would be *too perfectly* controlled. That the technologies that were possible and that were being deployed would give content owners more control over copyrighted material than the law of copyright ever intended.

This is precisely what we have seen in the past two years, but with a twist that I never expected. Content providers have been eager to deploy code to protect content; that much I and others expected. But now, not only Congress but also the courts have been doubly eager to back up their protections with law.

This part I didn't predict. And indeed, in light of *Reno v. ACLU*, one would be justified in not predicting it. If parents must go slowly before demanding that the law protect their kids, why would we expect Hollywood to get expedited service?

The answer to that question is best left until after we have surveyed the field. So consider the work of the courts, legislatures and code writers in their crusade to expand the protections for a kind of "property" called IP.

Increasing Control

Copyright Bots

In dorm rooms around the country, there are taped copies of old LPs. Taped to the windows, there are posters of rock stars. Books borrowed from friends are on the shelves in some of these rooms. Photocopies of class material, or chapters from assigned texts, are strewn across the floor. In some of these rooms, *fans* live; they have lyrics to favorite songs scribbled on notepads; they may have pictures of favorite cartoon characters pinned to the wall. Their computer may have icons based on characters from *The Simpsons*.

The content in these dorm rooms is being used without direct compensation to the original creator. No doubt, no permission was granted for the taping of the LPs. Posters displayed to the public are not displayed with the permission of the poster producers. Books may have been purchased, but there was no contract forbidding passing them to other friends. Photocopying goes on without anyone knowing what gets copied. The lyrics from songs copied down from a recording are not copied with the permission of the original author. Cartoon characters, the exclusive

right of their authors, are not copied and posted, on walls or on computer desktops, with the permission of anyone.

All these *uses* occur without the express permission of the copyright holder. They are unlicensed and uncompensated ways in which copyrighted works get used.

Not all of these uses are impermissible uses. Many are protected by exceptions built into the Copyright Act. When you buy a book, you are free to loan it to someone else. You are free to copy a small section of the book and give it to a friend. Under the Audio Home Recording Act, you are free to copy music from one medium to another. Taped recordings of records are therefore quite legal.

But some of these uses of copyrighted works may well be illegal. To post the poster may be a public display of the poster not authorized by the purchase.⁵⁸ To use icons on your computer of *Simpsons* cartoons is said by Fox to violate their rights. And if too much of an assigned text has simply been copied by the student, then that copying may well exceed the scope of “fair use.”

The reality of dorm rooms, however — and for that matter, most private space in real-space — is that these violations, if they are violations, don’t matter much. Whether the law technically gives a student the right to have a *Simpsons* cartoon on his desktop, there is no practical way for Fox Studios to enforce its rights against overeager fans. The friction of real-space sets the law of real-space. And that friction means that, for most of these “violations,” there is no meaningful violation at all.

Now imagine all this activity moved to cyberspace. Rather than a dorm room, imagine a student builds a home page. Rather than taped LPs, imagine he produces MP3 translations of the original records. *The Simpsons* cartoon is no longer just on his

⁵⁸ See 17 USCA § 106 (2001): “owner of copyright under this title has the exclusive rights... (5) in the case of... pictorial, graphic, or sculptural works... to display the copyrighted work publicly”. But the claim would be weak. Except in the most extreme circumstances, the public display of a copyrighted work would be fair use. William Carleton, *Copyright Royalties for Visual Artists: A Display-Based Alternative to the Droit de Suite*, 76 Cornell Law Review 510, 525 (1991) (“The general principle that section 109(c) observes, however, according to the House Report, is that ‘the lawful owner of a copy of a work should be able to put his copy on public display without the consent of the copyright owner.’” (quoting 1976 U.S.CODE CONG. & ADMIN.NEWS 5659, 5693)). See also *Ringgold v. Black Entertainment Television, Inc.*, 126 F.3d 70, (2nd Cir. 1997).

desktop; imagine it is also on his Web server. And likewise with the poster: the rock star, we can imagine, is now scanned into an image file and introduces this student's Web page.

How have things changed?

Well, in one sense, one might say the change is quite dramatic. Now, rather than simply posting this content to a few friends who might pass through the dorm room, this student is making this content available to millions across the world. After all, pages on the World Wide Web are available anywhere in the world. Millions use the World Wide Web. Millions could now, for free, download the content that this student posted.

But there's a gap in this logic. There are millions who use the World Wide Web. But there are billions of Web pages. The chances that anyone will stumble across this student's page are quite slight. Search engines balance this point, though that depends upon what's on a particular page. Most Web pages are not even seen by the author's mother. The World Wide Web has amazing potential for publishing; but a potential is not a million-hit site.

Thus, in reality, this page is effectively the same as the student's dorm room. Probably more people view the poster on the dorm room window than will wade through the student's Web page. In terms of exposure, then, moving to cyberspace doesn't change much.

But in terms of the capacity for monitoring the use of this copyrighted material, the change in the move from real-space to cyberspace is quite significant. The dorm room in cyberspace is subject to a kind of monitoring that the dorm room in real-space is not. Bots, or computer programs, can scan the Web and find content that the bot author wants to flag. The bot author can then collect links to that content and follow through however it seems most sensible to do.

Consider the story of fans of *The Simpsons*, who find themselves summoned to court when their *Simpsons* Fan pages are discovered by a bot hired by the television network Fox. The fans are not allowed, Fox said, to collect friends and strangers around these imagines of Bart Simpson and his dad. These images are

“owned” by Fox, and Fox has the right to exercise perfect control.⁵⁹ Though “[t]he sites are the Internet equivalent of taping posters of favorite actors to a bedroom wall,”⁶⁰ they are not permitted by copyright law.

Fan sites are not the only examples here. Dunkin’ Donuts used the threat of a copyright law suit to force a site devoted to criticism of the nationwide chain to sell the site to the company. The company claimed it could “more effectively capture the comments and inquiries” if it owned the site.⁶¹ Maybe, but it is also certainly true that it could more effectively edit the content the site made public.

A more telling example is the history of OLGA — an online guitar archive started by James Bender at the University of Nevada, Las Vegas. As the website describes it,

OLGA is a library of files that show you how to play songs on guitar. The files come from other Internet guitar enthusiasts like yourself, who took the time to write down chords or tablature and send them to the archive or to the newsgroups rec.music.makers.guitar.tablature and alt.guitar.tab. Since they come from amateur contributors, the files vary greatly in quality, but they should all give you somewhere to start in trying to play your favorite tunes.⁶²

In 1996, the University of Nevada, Las Vegas, was contacted by EMI Publishing, who alleged that the site violated

⁵⁹ See Kevin V. Johnson, *Show’s fan sites fight off ‘demon’ Fox Production company cites its copyrights*, USA Today, Dec. 23, 1999, at 4D, available at 1999 WL 6862067; and Aaron Barnhart, Kevin V. Johnson, *Twentieth, the Web slayer: Studio shifts its crusade to ‘Buffy’ fans’ Web sites*, Electronic Media, Dec. 6, 1999, at 9, available at 1999 WL 8767348. Fox does not limit itself to the web. See *Twentieth Century Fox Film Corp. v. 316 W. 49th Street Pub. Corp.*, No. 90 CIV. 6083 (MJL), 1990 WL 165680 (S.D.N.Y. Oct. 23, 1990) (holding that a night club could not display images of the Simpsons on its wall without permission of Fox’s permission). Fox says that it “appreciates” fan sites, but not enough to allow them to exist freely. Johnson, 4D. As Warner Bros. Online president Jim Moloshok says, “We decided that we were going to create a better experience for the fans.” Ibid.

⁶⁰ Ibid.

⁶¹ Fara Warner et al., *Holes in the Net . . .*, Wall St. Journal, Aug. 30, 1999, at A1.

⁶² See <<http://www.olga.net/about>>.

EMI's copyright. The University shut the site down. The then current archivist, Cathal Woods, moved the archive to another host. Then in 1998, OLGA was threatened again by the Harry Fox Agency, who again alleged copyright violations without specifying precisely what. OLGA was forced in that year to close the archive, and then began a long (and as of yet unresolved) campaign to establish the right of hobbyists to exchange chord sequences.

The pattern here is extremely common. Copyright holders vaguely allege copyright violations; a hosting site, fearing liability and seeking safe harbor, immediately shuts the site down. The examples could be multiplied thousands of times over, and only then would you begin to have a sense of the regime of control that is slowly emerging over content posted by ordinary individuals in cyberspace. Yahoo!, MSN, and AOL have whole departments devoted to the task of taking down "copyrighted" content from any Web site, however popular, simply because the copyright holder demands it.⁶³ Machines find this content; ISPs are ordered to remove it; fearing liability, and encouraged by a federal law that gives them immunity if they remove the content quickly,⁶⁴ they move quickly to take the content down.

This is the second side of the effect that cyberspace will have on copyright. Copyright interests obsess about the ability for content to be "stolen"; but we must also keep in view the potential for use to be more perfectly controlled. And the pattern so far has tracked the potential. Increasingly, as activity that would be permitted in real-space (either because the law protects it or because the costs of tracking it are too high) moves to cyberspace, control over that activity has increased.

⁶³ See, e.g., Siva Vaidyanathan, *Copyrights and Copywrongs: The Rise of Intellectual Property and How It Threatens Creativity* (New York: New York University Press, 2001) 355 ("In July 1999, journalist Michael Colton posted an Internet parody of *Talk* magazine, which is a partnership between Hearst Magazines and Walt Disney-owned Miramax Films. Miramax lawyers sent a cease and desist letter to Earthlink, the Internet company that owned the server on which the parody sat. Earthlink immediately shut down the parody. It only restored the site after *Talk* editor Tina Brown appealed to the Miramax legal department to let the parody stand. Because of widespread misunderstanding of copyright law, cease-and-desist letters carry inordinate cultural power and can chill if not directly censor expression.").

⁶⁴ See Digital Millennium Copyright Act, 105 Public Law 304, Sec 202(c)(1)(iii) (1998).

This is not a picture of copyrights imperfectly protected; this is a picture of copyright control out of control. As millions move their life to cyberspace, the power of copyright owners to monitor and police the use of “their” content only increases. This increase, in turn, benefits the copyright holders, but with what benefit to society, and with what cost to ordinary users? Is it progress if every use must be licensed? If control is maximized?

CPHack

There’s lots of junk on the World Wide Web. And there’s lots that’s worse than junk. Some of the stuff, for some people, is offensive or worse. The worse includes material deemed obscene or, and this is a very different category, “harmful to minors” — aka, porn.

As I’ve described, there’s a long and tedious history of Congress’s efforts to regulate porn in cyberspace.⁶⁵ I’m not interested in that story here. I’m interested here in the efforts of companies to regulate porn in cyberspace by producing code that filters content.

The code I mean is referred to affectionately as “censorware.” Censorware is a class of technology intended to block access to Internet content by forbidding a Web browser to link to the blocked sites. Censorware companies make it their job to skim across the Web looking for content that is objectionable, and they then add the link to that content in their list. Their list of banned books then gets sold to parents who want to protect their kids.

There is obviously nothing wrong with parents exercising judgment over what their kids get to see. And obviously, if the choice is no Internet or a filtered Internet, it is better that kids have access to the Internet.

But this does not mean that censorware is untroubling. For often the sites blocked by censorware systems are themselves completely unobjectionable. Worse, sites often are blocked merely because they oppose the technology of censorware. In December 2000, free speech activists at the civil rights group Peacefire.org reported that a number of censorware systems had begun to block

⁶⁵ Lessig, 173-75.

Web sites affiliated with Amnesty International.⁶⁶ This is just the latest in an endless series of similar cases. They all point to a technology that is fundamentally at odds with the openness and free access of the original Net.

In 1999, Eddy Jansson of Sweden and Matthew Skala of Canada decided they wanted to test out one instance of censorware — a product called “CyberPatrol.” They therefore wrote a program, CPHack, with which a user could disable CyberPatrol, and then see which sites CyberPatrol banned. The code thus made it easier, for example, for a number of sites to complain about the censorious practices of CyberPatrol.

The owners of CyberPatrol were not happy about CPHack. So like most owners unhappy with what others do, they raced into federal court. In March, Mattel brought suit against the authors and Peacefire.org, demanding they stop distributing their code for liberating the CP list.

Their claim was copyright violation. These coders, Mattel argued, had violated Mattel’s copyright by reverse engineering the code for CyberPatrol — contrary to the license under which CyberPatrol was sold. Because their use of CyberPatrol was unlicensed, it was illegal.

There is something very odd about the claim that Mattel was making. Copyright’s core is to protect authors from the theft of others. It is to protect Mattel, in other words, from someone who would steal CyberPatrol and use it without paying for the program. Copyright is not ordinarily aimed at protecting authors from criticism. It doesn’t “promote progress” to forbid criticism of what has happened before. But this is exactly how the law was being used in this case. By claiming that a contract that was attached to the copyrighted code banned a user from criticizing the code, the law was being used to restrict criticism.

Within two weeks, Mattel had received a worldwide injunction against the distribution of CPHack.⁶⁷ The injunction

⁶⁶ See Bennett Haselton, *Amnesty Intercepted*, December 12, 2000, <http://www.peacefire.org/amnesty-intercepted>.

⁶⁷ See *Microsystems Software, Inc. v. Scandinavia Online AB*, 98 F.Supp.2d 74 (D. Mass 2000), *aff’d*, 226 F.3d 35 (1st Cir. 2000) (enjoining “all persons in active concert” with Jansson and Skala from “publishing the software source code and binaries known as [CPHack]”).

was not just against the authors of the program; it also extended to those who linked to the program's site or who merely posted the program. These secondary posters believed they had a fairly strong right to post the code for CPHack. The code stated it was "GPLed," which meant that anyone was free to take it and post it as they wished. But all these "conspirators" (as the law had to call them to justify this extraordinary federal action) were now bound by this emergency injunction of a U.S. court. And Mattel then moved quickly to perfect and make permanent this force of law.

Yet here, cracks in the case began to show. First there was the problem of jurisdiction. The authors of CPHack were not citizens of the United States, and their work was not done in the United States. Copyright law, in the main, is national. Just because these two people somewhere in the world did something that would constitute a violation of copyright law in the United States does not show they violated United States copyright law.⁶⁸

But even if there had been jurisdiction, there was a much more fundamental flaw. What exactly was the wrong that these defendants were said to have committed? Mattel said they had "reverse engineered" CyberPatrol. Reverse engineering is ordinarily a permissible "fair use" under copyright law — copyright law has no incentive to make it impossibly difficult for others to compete with software programs.⁶⁹ But, Mattel said, the license that CyberPatrol was sold under did not give the purchasers any right to reverse engineer. Indeed, it expressly waived the right of the purchaser to reverse engineer the product.

The contract Mattel was speaking of was the sort of shrink-wrap license that comes with most software today. When you buy CyberPatrol, you are said to have agreed with everything on that license. Now whether such a license in general is enforceable is a hard question. The strongest case in the United States supporting its enforcement is a decision by Judge Frank Easterbrook in the Seventh Circuit Court of Appeals. But Easterbrook is clear that the restrictions beyond copyright law depend upon there being a contract. As he said, "Someone who found a copy of [a copyrighted work] on the street would not be affected by the shrink-wrap license — though the federal copyright laws of their

⁶⁸ See http://www.aclu.org/court/cyberpatrol_motion.html.

⁶⁹ *Sony Computer Entertainment, Inc. v. Connectix Corp*, 203 F.3d 596 (9th Cir. 2000).

own force would limit the finder's ability to copy or transmit the application program."⁷⁰ Thus, to demonstrate that the authors violated the law, you would have to demonstrate they had purchased the product in a way that would have made them liable under the contract.

All that was going to be very hard to prove. But just at the moment the case was to come to trial, Mattel had a surprise. It had purchased the rights to CPHack from the original authors, and now it was simply enforcing the rights it was purchasing. No one, Mattel said, was free to distribute this code, because this code was now Mattel's.

There was a squabble at this point about whether in fact the code was Mattel's. The code had been distributed in a form that indicated it was governed by the GPL. The GPL made it impossible to sell the product in a way that would revoke that license — at least to those down the chain of distribution. The original sellers — who received nothing except the promise that this gaggle of American lawyers would go home — were quick then to deny that they had released the program under the GPL. But that denial rang hollow. The Mattel lawyers had apparently informed them that if Mattel had been tricked, they would be guilty of fraud. And while that would have been an idle threat (at least if the authors had simply agreed to transfer whatever rights they had), it was apparently threat enough to get the authors to deny that CPHack was in fact under the GPL.

Armed with this sale, Mattel was able to convert the temporary injunction into something permanent. And the judge forbade others who had apparently been restricted by the injunction from intervening to challenge the injunction. As it settled, and was affirmed by a court of appeals in Boston, Mattel had the rights to CPHack; no one else could distribute it, even if the purpose was simply to criticize the company, Mattel.

The first two centuries of copyright's history were two centuries of censorship.⁷¹ Copyright was the censor's tool: the only

⁷⁰ ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1454 (7th Cir. 1996).

⁷¹ See Paul Goldstein, *Copyright and the First Amendment*, 70 Columbia Law Review 983 (1970) (describing the ongoing potential of copyright's grant of monopoly over expression as censorship); Pamela Samuelson, *Reviving Zacchini: Analyzing First Amendment Defenses in Right of Publicity and Copyright Cases*, 57 Tulane Law Review 836 (1983) (same).

things that could be printed were those things printed by authorized presses; the only authorized presses were those cooperating with the Crown.

Here the history has repeated itself, though the protected is not the Crown, but commerce. The law becomes a tool for effectively disabling the ability of others to criticize a corporation. Coders can release code that censors the Net, and efforts to release the list of censors get censored by the law.

deCSS

The lawyers for Mattel relied directly upon copyright law. But there was another tack they might have taken — one that will prove much more important as time goes on.

In 1998, Congress passed the Digital Millennium Copyright Act (DMCA).⁷² That act strengthened copyright in a number of ways, but one way was particularly troubling. This was its “anti-circumvention” provision.

The anti-circumvention provision regulates code that cracks code that is intended to protect copyrighted material. There are two parts to the provision — one that restricts the cracking of code that protects copyrighted material, and one that forbids the creation of code that cracks code that protects copyrighted material. In both cases, the aim of the law is to lend legal support to the tools that copyright holders deploy to protect their copyrighted material.⁷³

In the ordinary case — with ordinary property — there can be little in this to complain about. It is a crime to steal my car. But obviously, that isn’t enough to stop car theft. So many people install burglar alarms in their car to further inhibit car theft. But

⁷² For a detailed analysis of the DMCA, see David Nimmer, *A Riff on Fair Use in the Digital Millennium Copyright Act*, 148 *University of Pennsylvania Law Review* 673 (2000) (discussing the formulation, adoption, and practical effect of the DMCA).

⁷³ See Carolyn Andrepont, *Legislative Updates: Digital Millennium Copyright Act: Copyright Protections for the Digital Age*, 9 *DePaul-LCA Journal of Art & Entertainment Law* 397 (1999) (characterizing the DMCA as a necessary tool for protecting online copyrighted material); and Michelle A. Ravn, Note, *Navigating Terra Incognita: Why the Digital Millennium Copyright Act Was Needed to Chart the Course of Online Service Provider Liability for Copyright Infringement*, 60 *Ohio State Law Journal* 755 (1999) (arguing that the DMCA was particularly needed to clarify liability for online copyright infringements).

obviously again, that too isn't enough. So if a legislature, wanting to reduce the risk of theft even more, passes a law that makes it a crime to disable burglar alarms, or to sell tools whose sole purpose is to disable burglar alarms, there can't be any complaint about these rules either. If it is wrong to steal a car, and permissible for people to protect their property, it is wrong to crack technology designed to protect the property.

But this story about real property doesn't map directly onto intellectual property. For as I have described, intellectual property is a balanced form of property protection. I don't have the right to fair use of your car; I do have the right to fair use of your book. Your right to your car is perpetual; your right to a copyright is for a limited term. The law protecting my copyright protects it in a more limited way than the law protecting my car.

This limitation is not just laziness by Congress. The limits on the law's power to protect copyright are inherent in the clause granting Congress power to regulate copyright, and in the First Amendment's restrictions on Congress's power. Copyright law, for example, cannot protect ideas; it can only protect expression. The law's protection can extend only for limited times. And fair use of copyrighted works is understood to be constitutionally required.

These limitations distinguish copyright as property from ordinary property. And that distinction suggests the trouble with direct analogy from laws protecting burglar alarms to laws protecting code protecting copyrighted work. If copyright law must protect fair use — meaning the law cannot protect copyrighted material without leaving space for fair use — then laws protecting code protecting copyrighted material should also leave room for fair use. You can't do indirectly (protect fair-use-denying-code protecting copyright) what you can't do directly (protect copyright without protecting fair use).

I am not arguing that it is illegal or somehow unconstitutional for individuals to deploy code that protects copyrighted material more than the law does. There are troubles with this, and I don't think the law can ignore it. But there is ordinarily no constitutional problem ordinarily unless the law has actually done something.

But in the case I've described, the law has done something. The anti-circumvention provision is law that protects code that protects copyrighted material. And my claim is simply that that law must be subject to the same limitations that a law protecting copyright material directly is.

How does all this relate to Mattel?

Well, Mattel released a product that was copyrighted. Arguably, at least, its compilation of sites is copyrighted. It protected this copyrighted material using code. This code is what CPHack hacked. Thus, arguably, CPHack violated the anti-circumvention provision of the DMCA.

Mattel didn't bring this case, though I wish it had. Had it claimed the anti-circumvention provision protected it, then the courts would have had a clear shot at the question of whether or not there are constitutional limitations on the power of Congress to protect code protecting copyright. The CyberPatrol case would have been a perfect case to raise that claim. If cracking code to demonstrate that the code is censoring speech isn't fair use, then I'm not sure what would be.

Instead, this question of fair use got raised in a very different case.

In 1994, Hollywood started releasing movies on DVD disks. These movies were extremely high fidelity and relatively compact. The disks fit in an ordinary CD-ROM-sized drive. And very quickly manufacturers started producing drives that would read DVD disks.

To protect the movies on these disks, the industry developed an encryption system. This system was named CSS — content scramble system. CSS would make it difficult for a user to play back DVD content unless the user was using a machine that could properly decode the CSS routines.

The machines were DVD players that had been licensed to decrypt CSS-encrypted content. These licenses were issued by the consortium that developed and deployed CSS. And they were granted initially to companies that produced Windows- and Macintosh-compatible machines. Those running Windows, or those using a Mac, could play DVD movies on their machines.

Let's be clear first about what CSS did. CSS was not like those early software protection systems. It didn't interfere with the ability to copy DVD disks. If you wanted to pirate a DVD disk, all you needed to do was copy the contents from one disk to another. There was no need to decrypt the system in order to copy it.

So CSS didn't disable copying. All it did was limit the range of machines that DVD disks could be played on. And that in turn was the limitation that gave rise to the need for a crack.

For — surprise, surprise! — Macintosh and Windows are not the only machines out there. In addition, there are Linux PCs, among others. These machines could not play DVD movies. And owners of these machines were not happy about this flaw. So a number of them decided to develop a program that would crack CSS, so that it could be played on other machines. And when open source coders developed such a program, they called it deCSS.

deCSS disabled the encryption system on a DVD disk. It turned out that CSS itself was a terribly poor encryption technology. And once the system had been cracked, it became possible to play DVD content on other computers. With deCSS, DVD disks could be played on any machine.

Now again, deCSS didn't make it any easier to copy DVD than before. There's no reason you can't simply copy a CSS-protected movie and ship it to your friends. All that CSS did was assure that you played the movie on a properly licensed machine. Thus, deCSS didn't increase the likelihood of piracy.⁷⁴ All that deCSS did was 1) reveal how bad an existing encryption system was; and 2) enable disks presumptively legally purchased to be played on Linux computers.

But upon the release of deCSS, the industry went nuts. Within six weeks, four lawsuits had been filed in four separate jurisdictions, seeking under many legal theories the quashing of this code.⁷⁵ Within three weeks of the filing of the suits, two injunctions had been entered against people who posted deCSS code and even against journalists who linked to deCSS.⁷⁶ Once

⁷⁴ Or at least not significantly. It is true that if you could play DVD movies on any machine then there would be more machines that might demand DVD content.

⁷⁵ The MPAA filed suit against four web site operators in the Southern District of New York and in the District of Connecticut. The DVD Copy Control Association filed suit in California state court against about 20 named defendants and 500 unnamed ones. For a history of these suits, see *O p e n l a w / D V D : R e s o u r c e s*, at <http://eon.law.harvard.edu/openlaw/DVD/resources.html> (visited April 19, 2001).

⁷⁶ *Universal City Studios, Inc. v. Reimerdes*, 82 F.Supp.2d 211 (S.D.N.Y. 2000) and *DVD Copy Control Ass'n, Inc. v. McLaughlin*, No. CV 786804, 2000 WL 48512, (Cal.Superior, Jan. 21, 2000).

again, as with CPHack, the legal system had been fired up to silence this dangerous code.

The core case here was tried in New York. The defendants were many. Some had linked to the sites carrying deCSS. Others had written articles about the sites and had linked to the links. And others were active distributors of deCSS. None of these defendants was in the business of selling pirated movies. And at no time in the case did the plaintiffs demonstrate that any movies had been pirated because of deCSS.

Instead, the sole claim in the case was that these defendants were in the business of distributing code that cracked an encryption system, and hence, these defendants were in violation of the anti-circumvention provisions of the DMCA.

The district court judge in the New York case issued an immediate injunction stopping the distribution of deCSS. After a long trial, he issued an opinion making permanent that injunction. The opinion making the injunction permanent rejected the argument that “fair use” entitled the defendants to produce or distribute this code. Fair use, the court concluded, was something copyright law must allow. This was a law regulating code, not a copyright. The court concluded that Congress had the power to allow private actors to pile on protection on top of the copyright law. No First Amendment interests were violated.

This case was appealed to the circuit court. At the time of this writing, that appeal has not been resolved. But the importance of the case is not how it ends; the importance is the signal that Hollywood sends: any system that threatens their control will be threatened with an army of Hollywood lawyers.

iCraveTV

iCraveTV was a site that streamed television content over the Internet.⁷⁷ The site was located in Canada, where Canadian broadcasting law made such streaming legal. Under Canadian law,

⁷⁷ See Michael A. Geist, *iCraveTV and the New Rules of Internet Broadcasting*, 23 University of Arkansas at Little Rock Law Review 223 (2000); and John Borland, *Online TV service may spark new Net battle*, CNET.com at <http://news.cnet.com/news/0-1004-200-1477491.html> (last visited April 4, 2001) (describing the launch of the iCraveTV.com web site). For a scholarly analysis of the case, see Howard P. Knopf, *Copyright and the Internet in Canada and Beyond: Convergence, Vision and Division*, 2000 European Intellectual Property Review 262.

anyone has the right to rebroadcast television content, as long as they don't change the content in any way. iCraveTV wanted to take advantage of that right to give computer users access to TV.

The problem was that though TV was free in Canada, it was not free in the United States. To rebroadcast content in the United States requires the permission of the original broadcaster. So behavior legal in Canada would be illegal in the United States.

But then where was iCraveTV? In one obvious sense, it was in Canada. But when it made itself available on the Internet, it was also, simultaneously, everywhere. That is the character of the Internet at its birth — to be on the site at any place is to be on the site in every place.

iCraveTV took some steps to limit itself to one place. It tried to block non-Canadians from the site. But when it began this process, the technologies for blocking were not strong. iCraveTV asked for a telephone number, but of course it had no easy way to verify that the telephone number you gave it was your telephone number.

Soon after iCraveTV went on-line, copyright holders in the United States brought suit to shut it down. The theory? By setting up an Internet service to broadcast TV, iCraveTV was broadcasting TV into the United States. It was therefore violating U.S. copyright law (by “publicly performing” what iCraveTV streamed to American viewers). Until it could “guarantee,” as the Hollywood lawyers put it, that no United States citizen would get access to this free Canadian TV, the Canadian site had to be shut down.

There was a significant dispute about how hard iCraveTV was working to keep non-Canadians out of their site. The Hollywood lawyers hired Harvard Law School Berkman Center's boy genius Ben Edelman to demonstrate just how easy it was to hack the iCraveTV site. But whether easy or not, the significant issue about the case is this: How much should someone in one country have to be burdened by the laws in another country?

For example: Imagine the Chinese government telling the American site ChinaOnline⁷⁸ that it must shut down until it is

⁷⁸ *ChinaOnline* (visited April 17, 2001) www.chinaonline.com (a US-based English language news site on China). Or alternatively, *Human Rights in China* (visited April 17, 2001) <http://www.hrichina.org> (a New York-based Chinese/English language web site chronicling Chinese human rights abuses).

able to block out all Chinese citizens, since the content on ChinaOnline is illegal in China. Or imagine a German court telling Amazon.com that it must stop its selling of *Mein Kampf* until it can guarantee that no German citizen will be able to get access to that book — since that book is illegal in Germany. Or imagine a French court telling Yahoo! that it has to block French citizens from purchasing Nazi paraphernalia, since that is illegal in France. (Oops, no need to imagine. A French court did just this.⁷⁹)

In all these cases, we are likely to think that the action of these foreign governments is somehow illicit. That the free exchange of the Net tilts us in favor of open and regular access. That steps to shut down foreign sites because of local laws are the very essence of what the Internet was designed against.

But when it comes to copyright law, we become like the Chinese, or Germans, or French. With respect to law, we too want to insist upon local control — especially because local law here is so strong. So with respect to copyright law, we push local control. And the result is the birth of technologies that will facilitate better local control.

iCraveTV, for example, promised the court that it would develop technology to make it possible to block out everyone except Canadians. Jack Goldsmith and Alan Sykes have described the growing collection of technologies that will achieve the same end.⁸⁰ These suggest the future is very much like the past: life in the future Internet will be regulated locally, just as life before the Internet was regulated locally.

How we get to that future world was one point of *Code and Other Laws of Cyberspace*. But for now, the significance of iCraveTV is again the attitude it evinces. Though there was no proof that any revenue would be lost by virtue of people streaming content across their TV, and though Canadian law was assumed to

⁷⁹ See Association Union des Étudiants Juifs de France, la Ligue Contre le Racisme et l'Antisémitisme v. Yahoo! Inc. et Yahoo France, T.G.I. Paris, Ordonnance de référé du 22 mai 2000, available at: http://www.legalis.net/jnet/decisions/responsabilite/ord_tgi-paris_220500.htm

⁸⁰ See Jack L. Goldsmith & Alan O. Sykes, *The Internet and the Dormant Commerce Clause*, 110 Yale Law Journal 785 (2001). See also Lawrence Lessig & Paul Resnick, *Zoning Speech on the Internet: A Legal and Technical Model*, 98 Michigan Law Review 395 (1999).

protect this behavior in Canada, the control industry raced to court to shut down the alternative. The courts complied.⁸¹

MP3

In chapter 8, I told the story of my.mp3.com — an innovative new service where users could “beam” the content of their CD collection to a Web site and then get access to their music at that Web site. This service was provided by the company MP3.COM. To provide access to this music, MP3.COM had to purchase a very large collection of CDs. It then copied those CDs into its computer database. When a user of my.mp3.com placed a CD into the Beam-it program, the system identified whether that CD was in MP3.COM’s library. If it was, then that user account got access to the content of that CD whenever he or she accessed the account.

Ten days after launching the service, MP3.COM received a letter from RIAA attorneys.⁸² Their service was a “blatant” violation of copyright laws, said the letter, and MP3.COM should take the service down immediately. MP3.COM refused, and the lawyers did what lawyers do when someone refuses: they filed suit in district court asking for over \$100 million in damages.⁸³

⁸¹ A very similar point is made by Denise Caruso. See Case Illustrates Entertainment Industry’s Copyright Power, N.Y. Times, Mar. 13, 2000, <http://www.nytimes.com/library/tech/00/03/biztech/articles/13digi.html>. As Caruso writes, “The most chilling aspect of the case . . . was [iCraveTV’s] response. That is, [it] did not argue the legality of the action against [it], but instead responded by inventing a technology that could stop the discussion dead in its tracks.” Caruso continues: “Many people are likely to object strongly to [the site’s] balkanized Internet ... such a system would devolve the Internet into a model very much like the restricted, centralized control of cable television. That is a business model with which the \$65 billion media and entertainment industries — the very ones that nearly sued the pants off [of the site] — are quite familiar.” Ibid.

⁸² See Press Release, Recording Industry Association of America, RIAA Statement Concerning MP3.Com’s New Services (Jan. 21, 2000) at http://www.riaa.com/PR_Story.cfm?id=47.

⁸³ The court’s ruling in the case determines that the damages are \$25,000 per CD. This leads to possible damages of \$118 million if the total is determined to be at least 4,700 CD’s. *UMG Recordings, Inc. v. MP3.Com, Inc.*, No.00 CIV. 472(JSR), 2000 WL 1262568, at *6 (S.D.N.Y. 2000).

The RIAA lawyers had a point, if you looked at the statute quite literally. MP3.COM may have purchased a bunch of CDs, but they clearly “copied” these CDs when they created their single, massive database. There was, on its face, then, an unauthorized copy of each of these CDs, and the question became whether or not this copy was nonetheless fair use.

Applying the ordinary standard for fair use, the RIAA argued it was clearly not. This was for a commercial purpose. Thus, fair use was not a defense, and the blatant and willful copying was then a prosecutable offense.

When lawyers have such a clean, slam-dunk case, they get very, very sure of themselves. And the papers in the *my.mp3.com* case are filled with outrage and certainty.

But when you stand back from the outrage and ask, “What’s really going on here?” this case looks a lot different. First, as should be clear, *my.mp3.com* was not facilitating the theft of any music. You had to insert a real CD into your computer before you could get access to the copy on MP3.COM’s server. Of course, you could borrow someone else’s CD, and hence trick the system into thinking you were the rightful owner of the CD. But you could borrow someone else’s CD and copy it as it is. The existing system always permits theft; *my.mp3.com* didn’t add to that.

Second, it should be fairly clear that this service would increase the value of any given CD. Using this technology, a consumer could listen to his or her CD in many different places. Once the system recognized your rights to the music on the CD, the system gave you those rights whenever you were at a browser. That means that the same piece of plastic is now more valuable. That increase in value should only increase the number of CDs that get purchased. And that increase would benefit the sellers of CDs.

Third, it is also fairly clear that exactly the sort of thing that MP3.COM was doing could easily have done by the consumers themselves. Any number of companies have created free disk space on the Internet. Anyone could “rip” his or her CDs and then post them to this site. This ripped content could then be downloaded from any computer. And this download could be “streamed” to be just like the service MP3.COM was providing.

The difference is simply that users don’t have to upload their CDs. On a slow connection, that could take hours; on a fast connection, it still can be quite tedious. And a second difference is

that the duplication that would be necessary for everyone to have his or her CDs on-line would be much less. Ironically, by shutting down MP3.COM, the RIAA was inducing the production of many more copies of the very same music.

Thus the battle here was between two ways to view the law — one very strict and formal, and the other much more sensitive to the consequences of one outcome over the other. And the claim of MP3.COM was simply that the court should consider the facts in the case before it shut down this innovative structure for distributing content. MP3.COM was arguing for a right to “space-shift” content, so that a user’s content could be accessible anywhere.

But the court had no patience for MP3.COM’s innovation. In a stunning decision, the court not only found MP3.COM guilty of copyright violation, but the court found the violation “willful.” And rather than giving nominal or minimal damages for this violation, the court imposed \$110 million in damages. For experimenting with a different way to give consumers access to their data, MP3.COM was severely punished.

Napster

I described the technology that is Napster in Chapter 8. The essence was this: Napster enables individuals to identify and transfer music from other individuals. It enables *peers*, that is, to get music from *peers*. It does this not through a completely peer-to-peer architecture — there is a centralized database of who has what, and who, at any particular moment, is on. But the effect is peer-to-peer. Once the service identifies that X has the song that Y wants, it transfers control to the clients of X and Y, and these clients oversee the transfer. The Napster server has just made the link.⁸⁴

⁸⁴ See, e.g., Amy Harmon, *Powerful Music Software Has Industry Worried*, N.Y. Times, Mar. 7, 2000, available at <http://www.nytimes.com/library/tech/00/03/biztech/articles/07net.html>; Karl Taro Greenfeld, *The Free Juke Box*, Time, Mar. 27, 2000, available at http://www.time.com/time/everyone/magazine/sidebar_napster.html. Andy Oram, *Gnutella and Freenet Represent True Technological Innovation*, May 12, 2000, available at <http://www.oreillynet.com/pub/a/network/2000/05/12/magazine/gnutella.html>; also Peer-to-Peer: Harnessing the Benefits of a Disruptive Technology (Beijing; Cambridge [Mass.]: O’Reilly; Andy Oram ed., 2000).

But that was enough in the eyes of the recording industry. And with predictably lightning speed, they filed suit here as well. Napster was just a system for stealing copyrighted material. It should, the RIAA demanded, be shut down.

Against the background of MP3.COM, Napster does look a bit dicey. After all, the service at issue in MP3.COM was a service to give individuals access to content that they presumptively have purchased. On Napster, the presumption is the opposite. There seems little reason for me to download music I already own.

But even that is not quite correct. I've been a Napster user, though I am not an imaginative user, and I am generally quite lazy. I know exactly what I want to hear, and I know that because I own the music already. But it is easier simply to download and play the music I own on Napster than it is for me to go through the CDs I own (most of which are at home, anyway) and insert the one I want in a player. Thus, while I won't say that none of the music I have listened to on Napster is music I don't own, probably only 5 percent is.

That the user owned the music, however, didn't stop the court in the MP3.COM case. And the assurance that users were only downloading music they already owned was not likely to assure the RIAA. Most people, the RIAA argued, used Napster's technology to "steal" copyrighted work. It was a technology designed to enable stealing; it should be banned like burglar's tools.

Copyright law is not new to a technology said to be designed solely to facilitate theft. Think of the VCR. The VCR records content from television sets. It is designed to record content from television sets. The designers could well have chosen to disable the record button when the input was from the TV. They could, that is, have permitted recording when the input was from a camera and not a TV. But instead, they designed it so that television content could be copied for free.

No one in the television industry gave individuals the right to copy television content. The television industry instead insisted that copying television content was a crime. The industry launched a massive legal action against producers of the VCR, claiming that it was a technology designed to enable stealing and that it should be banned like burglar's tools. As Motion Picture Association

president Jack Valenti testified, the VCR was the “Boston Strangler” of the American film industry.⁸⁵

This legal campaign ended up in the courtroom of Judge Ferguson.⁸⁶ After “three years of litigation, five weeks of trial and careful consideration of extensive briefing by both sides,”⁸⁷ the trial court judge found that the use of VCRs should be considered “fair use” under the copyright act. The court of appeals quickly reversed, but the important work had been done in the trial court. The judge had listened to the facts. Sony was permitted weeks of testimony to demonstrate that, in fact, the VCR would not harm the industry. Sony was permitted, in other words, to show how this technology should be influenced by the law.

These findings were critical in the appellate review of the case. And when the case finally reached the Supreme Court, they gave the Supreme Court sufficient ground to understand matters in a balanced and reasonable way. Though the VCR was designed to steal, the court concluded that it could not be banded as an infringing technology unless there was no “potential” for a “substantial noninfringing use.”

Potential. For a *substantial* noninfringing use. Notice what this standard does not say. It does not require that a majority of the uses of the technology be noninfringing. It requires only that a “substantial” portion be noninfringing. And it does not require that this non-infringement be proven today. It requires only that there be a potential for this noninfringing use. As long as one can demonstrate how the technology could be used in a way that was legitimate, the technology would not be banned by a court.

The Supreme Court’s test is rightly permissive. The tradition of American law is not to ban technologies, but to punish infringing use. And that test should have had an obvious answer in

⁸⁵ Home Recording of Copyrighted Works: Hearing on H.R. 4783, H.R. 4794, H.R. 4808, H.R. 5250, H.R. 5488, and H.R. 5750 Before the Subcomm. on Courts, Civil Liberties, and the Admin. of Justice of the Comm. on the Judiciary, 97th Cong. (2nd session), 8 (1983) (testimony of Jack Valenti, President, Motion Picture Association of America, Inc.). See also Sam Costello, *How VCRs May Help Napster’s Legal Fight*, *The Industry Standard*, July 25, 2000, available at <http://www.thestandard.com/article/0,1902,17095,00.html>.

⁸⁶ *Universal City Studios, Inc. v. Sony Corp. of Am.*, 480 F. Supp. 429, 432 (C.D. Cal. 1979) (District Court opinion by Judge Ferguson).

⁸⁷ *Ibid*, 432.

the context of the Napster case. Here there are no doubt lots of infringing uses. But there are also lots that under any fair estimation constitute fair or noninfringing use. Music that has been released to the Net to be freely distributed is freely distributed through Napster. That use is clearly noninfringing, and is substantial. Music that has fallen into the public domain is available on Napster. That use is clearly noninfringing, and is substantial. And lots of recordings that are not music — lectures, for example — can be made available on Napster. The Electronic Frontier Foundation has a series of lectures that get traded on Napster; they are offered as content that is free.

But when this claim was made to Judge Patel in California, she, unlike Judge Ferguson in the Sony case, had no patience for the argument. Without a trial, and with barely contained contempt, she ordered the site shut down.

Within thirty-six hours, Napster attorney David Boies had received a stay of that order from the Ninth Circuit Court of Appeals. And after hearing arguments in the case, that court affirmed much in the injunction of Judge Patel.⁸⁸ The court did, however, make one important modification: Napster was not responsible for contributory infringement unless the copyright holder made Napster aware of the violation. Napster therefore wasn't closed down by the court; it wasn't required to become the copyright police. But it was required to remove music posted contrary to the copyright holder's wish. So, like the circuits of the computer Hal in the movie *2001*, the music in the memory of the Napster system will be slowly turned off, and content holders demand the right to control the sharing of their content.

Eldred

Recall the story of Eric Eldred's HTML-book library from chapter 7. As I described there, Eldred has a passion for producing HTML-books from public domain works. As the framers of our constitution plainly envisioned, after a limited time, copyrights expire, and the work previously protected then falls into the public's hands without restraint. Eldred takes those public domain works and turns them into freely accessible texts.

But in recent years, Congress has changed the rules. In 1998, Congress extended the term of existing copyrights by 20

⁸⁸ *A&M Records, Inc., v. Napster, Inc.* 239 F. 3d 1004 (9th Cir. 2001).

years. As I've said, his was simply the latest extension in a pattern that began 40 years ago. While Congress changed the term of copyright just once in the first hundred years of copyright, and once again in the next 50 years, it has extended the term of subsisting copyrights eleven times in the past 40 years.

This latest extension meant that works that were to fall into the public domain in 1999 would now not be “free” until the year 2019. Thus works that Eldred had prepared to be released were now bottled up for another generation.

This latest change outraged many, and especially Eric Eldred. Eldred threatened civil disobedience — promising to publish a series of Robert Frost poems that would have fallen into the public domain. After some of us convinced him that was a very dangerous strategy, Eldred chose instead to challenge the statute in court. In January, 1999, in a federal court in Washington, DC, Eldred filed his complaint.

Eldred's claims were simple. If the Constitution permits Congress to grant authors an exclusive right “for limited times,” then the framers of that power clearly intended that that exclusive right must come to an end. Permitting Congress the power perpetually to extend copyrights would defeat the purpose of the express limitation.

This was Eldred's claim based on the language of the Copyright Clause of the Constitution. He also raised an argument based on the First Amendment. The First Amendment says that Congress “shall make no law” “abridging the freedom of speech, or of the press.” Copyright is a law that certainly limits Eric Eldred's html-press. So how are these two provisions of the Constitution — one granting Congress the power to issue copyrights, and the other limiting Congress' power to “abridge” the freedom of the press—to be reconciled?

The Supreme Court has explained how the two coexist. Copyright, the Court has written, is an “engine of free expression.”⁸⁹ Because of the incentives that copyright law provides, work gets created that otherwise would not have been produced. This means that copyright law both *increases* speech and restricts it. And a fairly balanced copyright law can, in principle at least, increase more than it restricts. That means that copyright law

⁸⁹ Harper & Row Publishers, Inc. v. Nation Enterprises, 471 U.S. 539, 588 (1985).

does not necessarily “abridge” speech; and hence the Copyright Clause does not necessarily conflict with the guarantees of the First Amendment.

But as Eldred argued, this rationale cannot justify extending the terms for existing copyrights. Existing copyrights protect work that is already created; extending the terms for this work restrict speech without any promise of future creativity. The one thing we know about incentives, Eldred argued, is that incentives are prospective. Whatever we promise Hawthorne, he isn’t going to produce any more work.

Both claims appealed to the framers’ sense of balance in establishing the copyright power. As Justice Story described it, the power gave authors exclusive control for a “short interval”; after that interval, the work was to fall into the public’s hands “without restraint.”⁹⁰ At the time Story wrote that, a “short interval” was an initial term of 14 years. Today, that “short interval” can easily reach ten times that term.

The courts, however, had little patience for the framers’ sense of balance. Both the District Court and the Court of Appeals for the D.C. Circuit held that the Copyright Clause did not constrain Congress to a single “limited time.” They were free to grant extensions, as long as the extensions themselves were limited. (As Professor Peter Jaszi described it, Congress is therefore free to grant a perpetual term “on the installment plan.”⁹¹) And more dramatically, in rejecting the First Amendment claim, the Court of Appeals held that “copyrights are categorically immune from First Amendment scrutiny.”⁹²

The meaning of these two holdings together is that the ability to propertize culture in America is essentially unlimited by the Constitution—even though the plain text of the Constitution speaks volumes against such expansive control. And the consequence of this power to propertize was perhaps best exemplified by a lawsuit to stop the publication of what many

⁹⁰ Joseph Story, *Commentaries on the Constitution of the United States* § 502, at 402 (R. Rotunda & J. Nowak eds. 1987).

⁹¹ See Testimony of Professor Peter Jaszi, *The Copyright Term Extension Act of 1995: Hearings on S.483 Before the Senate Judiciary Comm.*, 104th Cong. (1995), available in 1995 WL 10524355, at *6.

⁹² *Eldred v. Reno*, 239 F.3d 372, 375 (D.C. Cir. 2001).

considered a sequel to Margaret Mitchell's "Gone With The Wind."

"Gone With The Wind" was published in 1936. Under the law as it existed then, her copyright would expire at the end of 1992. But because of the extensions that Eldred was fighting, her copyright now extends until 2031. Until then (or later, if Congress extends the term again), the Mitchell Estate has exclusive rights over the story, as well as over other stories that are sufficiently close to the original to be called "derivative."

In 2001, Alice Randall tried to publish a work called "The Wind Done Gone." While she called it a parody of "Gone With The Wind," that was her lawyers speaking more than Randall. The work is clearly based on Mitchell's work; in telling the story of "Gone With The Wind" from the perspective of the African slaves, it clearly relies upon Mitchell's work in an intimate and extensive manner. The Mitchell estate called the work a sequel, and brought a federal lawsuit to stop its publication. This story, the Mitchell estate essentially argued, was theirs to control well into the 21st century.

To most people, this is plainly absurd. "Gone With The Wind" is an extraordinarily important part of American culture; at some point, the story should be free for others to take and criticize in whatever way they want. It should be free, that is, not only for the academic, who would certainly be allowed to quote the book in a critical essay; it should be free as well for authors like Alice Randall, as well as film directors or playwrights to adapt or attack as they wish. That's the meaning of a free society, and whatever compromise on that freedom copyright law creates, at some point that compromise should end.

The "Gone With The Wind" case, as well as Eldred's case, is still working its way through the courts. But they both tell a similar story: the freedom to build upon and create new works is increasingly, and almost perpetually, restricted under existing law. To a degree unimaginable by the framers of our Constitution, that control has been concentrated in the hands of the holders of copyrights—increasingly, large media.

Consequences of Control

The Internet in its nature shocks real-space law. That's often great; it is sometimes awful. The question policy makers must face is how to respond to this shock.

Courts are policy makers, and they too must ask how best to respond. Should they respond by intervening immediately to remedy the “wrong” said to exist? Or should they wait to allow the system to mature, and to see just what harm there is?

In the context of porn, as I have already argued, the courts’ response is to wait and see. And indeed, this is the response of the government in many different contexts. Porn, privacy, taxation: in each case, courts and the government have insisted, we should wait to see how the network develops.

In the context of copyright, the response has been different. Pushed by an army of high-powered lawyers, greased with piles of money from PACs, Congress and the courts have jumped into action to defend the old against the new. They have legislated, and litigated, quickly to assure that control of the old is not completely undermined by the new.

Ordinary people might find these priorities a bit odd. After all, the recording industry continues to grow at an astounding rate. Annual CD sales have tripled in the past ten years.⁹³ Yet the law races to support the recording industry, without any showing of harm. (Indeed, possibly the opposite: When Napster usage fell after the court restricted access, album sales in the fell as well. Napster may indeed have helped sales rather than hurting them.⁹⁴)

At the same time, it can’t be denied that the Net has reduced the control that parents have to protect their children. Yet the law says, “Wait and see, let’s make sure we don’t harm the growth of the Net.” In one case — where the harm is the least — the law is most active; and in the other — where the harm is most pronounced — the law stands back.

Indeed, the contrast is even stronger than this, and it is this that gets to the heart of the matter.

The Internet exposes much more copyrighted content to theft than in the world that existed before the Internet. This much of the content holders’ claim is plainly true.

⁹³ Recording Industry Association of America, *2000 Year-end Statistics* (2001), at http://www.riaa.com/pdf/Year_End_2000.pdf.

⁹⁴ Jeff Leeds, *Album Sales Test the Napster Effect*, L.A. Times, June 20, 2001, C1.

But as I've argued, the Internet does two other things as well. First, the Internet makes it possible (if the proper code is deployed) to control the use of copyrighted material much more fully than in the world before the Internet. And second, the Internet opens up a range of technologies for production and distribution that threaten the existing concentrations of media power.

In responding to the shock that the Internet presents to copyright law, it is of course important to account for the increased exposure to theft. But the law must also draw a balance to assure that this proper response to an increased risk of theft does not simultaneously erase the important range of access and use rights traditionally protected under copyright law. If the Net creates an initial imbalance, the response by Congress should not create an equal and opposite imbalance, where traditional rights are lost in the name of perfect control by content holders.

That was my argument in *Code*. But now we should add a second concern to that same story: The response by Congress should also not be such as to permit this concentrated industry of today to leverage its control from the old world into the new. Artists deserve compensation. But their right to compensation should not translate into a right of control over how innovation in this new industry should develop.

Control, however, is precisely Hollywood's and the recording labels' objective. In the context of copyright law, the industry has been very clear: Its aim, as RIAA president Hilary Rosen has described it, is to assure that no venture capitalist invests in a start-up that aims to distribute content unless that start-up has the approval of the recording industry.⁹⁵ This industry thus

⁹⁵ "This case has always been about sending a message to the technology and venture capital communities that consumers, creators and innovators will best flourish when copyright interests are respected." Jim Hu and Evan Hansen, Record Label Signs Deal with Napster, <http://news.cnet.com/news/0-1005-200-3345604.html> (Oct. 31, 2000). See also *Online Entertainment: Coming Soon to a Digital Device Near You: Hearing Before the Senate Comm. On the Judiciary, 107th Cong.* (2001) (statement of Hilary Rosen, President and CEO, Recording Industry Association of America) (available at <http://judiciary.senate.gov/te040301hr.htm>); Press Release, Record Industry Association of America, Hilary Rosen Press Conference Statement (Feb. 12, 2001) (available at http://www.riaa.com/News_Story.cfm?id=371).

demands the right to veto new innovation, and it invokes the law to support its veto right.⁹⁶

Michael Robertson of MP3.COM agrees that this is the aim and effect. “[T]his litigation,” Robertson told me, “is as much about straddling the competition as anything else.”⁹⁷ And it has had its effect.

[W]hat they’ve done very successfully is dried up the capital markets or any digital music company. [W]e went public a little over a year ago [and] raise[d] \$400 million from going public. Today, if you took a digital music company business plan, you couldn’t get a buck and a half from a venture capital company.⁹⁸

This is the reality that the current law has produced. In the name of protecting original copyright holders against the loss of income they never expected, we have established a regime where the future will be as the copyright industry permits. This puny part of the American economy has grabbed a veto on how creative distribution will occur.

One could quibble about whether current law is properly interpreted to give existing interests this control. Some see these cases (in particular the MP3.COM and Napster cases) as simple; I find them very hard. But whether they are simple or hard, the underlying law is not unchangeable. Congress could play a role in making sure that the power of the old does not trump innovation in the new. It could, that is, intervene to strike a balance between the right of copyright holders to be compensated and the right of innovators to innovate.

⁹⁶ As Yochai Benkler writes, “increases in intellectual property rights are likely to lead, over time, to concentration of a greater portion of the information production function in the hands of large commercial organizations that vertically integrate new production with inventory management.” Yochai Benkler, *The Commons as A Neglected Factor of Information Policy*, (Oct. 3-5 1998) 74. Likely, and we might add, has. Compare, as David Isenberg points out, the connection to the history of AT&T: “You can see now in the record industry for example that the record companies are unwilling to give up this idea of the control of the physical medium even though they could perhaps do a very good job of artist development.” Telephone interview with David Isenberg (Feb. 14, 2001).

⁹⁷ Telephone interview with Michael Robertson (Nov. 16, 2000).

⁹⁸ *Ibid.*

The model for this intervention is something we've already seen: the compulsory license.⁹⁹ For recall, as I said in chapter 4, the first real Napster case: cable television. It, like Napster, made its money by “stealing” the content of others. Congress in remedying this theft required that the cable companies pay content holders compensation. But at the same time, Congress gave cable television companies the right to license broadcasting content, whether or not the copyright holder wanted.

Congress's aim in part was to assure that the cable industry could develop free of the influence of the broadcasters. The

⁹⁹ See also Richard Watt, *Copyright and Economic Theory: Friends or Foes?* (Cheltenham, UK; Northampton, Mass.: E. Elgar, 2000) 161-200 (describing role of cooperatives and collectives). For a more comprehensive analysis of compulsory rights, see generally Marshall Leaffer, *Understanding Copyright Law* 69-71 (New York: M. Bender, 3d ed., 1999) (detailing both support for and criticism of compulsory licenses), cited in Michael Freno, Note, *Database Protection: Resolving the U.S. Database Dilemma With an Eye Toward International Protection*, 34 *Cornell International Law Journal* 165, 209 (promoting compulsory licenses in the context of databases); Christopher Scott Harrison, Comment, *Protection of Pharmaceuticals As Foreign Policy: The Canada-U.S. Trade Agreement and Bill C-22 Versus the North American Free Trade Agreement and Bill C-91*, 26 *North Carolina Journal of International Law and Communications Regulation* 457, 525 (advocating generally the free distribution of compulsory licenses); Anthony Reese, *Copyright and Internet Music Transmissions: Existing Law, Major Controversies, Possible Solutions*, 55 *University of Miami Law Review* 237, 270 (arguing for the extension of compulsory licenses in the area of music on the Internet); Bess-Carolina Dolmo, Note, *Examining Global Access to Essential Pharmaceuticals in the Face of Patent Protection Rights: The South African Experience*, 7 *Buffalo Human Rights Law Review* 137 (explaining the benefits of compulsory licenses for developing countries); Sheldon W. Halpern, *The Digital Threat to the Normative Role of Copyright Law*, 62 *Ohio State Law Journal* 569, 593 (supporting compulsory licensing for digital images); Laura N. Gasaway, *Impasse: Distance Learning and Copyright*, 62 *Ohio State Law Journal* 569, 783 (questioning the practicality of compulsory licenses); Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000*, 88 *California Law Review* 2187, 2194 n.15 (criticizing compulsory licenses in one context); Robert P. Merges, *Contracting Into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 *California Law Review* 1293, 1293 (arguing against compulsory licenses for digital content); Ralph Oman, *The Compulsory License Redux: Will It Survive in a Changing Marketplace?*, 5 *Cardozo Arts & Entertainment Law Journal* 37, 48 (noting that many actors in the area of intellectual property prefer private solutions over compulsory licenses); Scott L. Bach, Note, *Music Recording, Publishing, and Compulsory Licenses: Toward a Consistent Copyright Law*, 14 *Hofstra Law Review* 379, 398-401 (arguing that compulsory licenses are unfair to many artists, discourage innovation, and may be unconstitutional under the Copyright Clause).

broadcasters were a powerful industry; Congress felt (rightly) that cable would grow more quickly and innovate more broadly if it was not beholden to the power of broadcasters. So Congress cut any dependency that the cable industry might have, by assuring it could get access to content without yielding control.

Compensation without control.¹⁰⁰

The same solution is available today. But the recording industry is doing everything it can to keep Congress far from this solution.¹⁰¹ For it knows that if it has the absolute right to veto distribution that it can't control, then it can strike deals with companies offering distribution that won't threaten the labels' power. The courts, whether rightly or not, have handed the labels this veto power; Congress, if it weren't flustered by the emotion of the recording industry, could well intervene to strike a very different balance.

We find that balance by looking for a balance — not by giving copyright interests a veto over how new technologies will develop. We discover what best serves both interests by allowing experimentation and alternatives.

But this is not how the law is treating copyright interests just now. Instead, they are in effect getting more control over copyright in cyberspace than they had in real-space, even though the need for more control is less clear. We are locking down the content layer, and handing over the keys to Hollywood.

The costs of this lock-down are great enough without the Internet; the Internet makes them much more significant. Before the Internet, as I described in chapter 7, production was concentrated in the hands of the few. With the Internet, this production could be widespread. But to the extent that content remains controlled, to the extent the Alice Randalls or Eric Eldreds must seek permission to use or build upon other aspects of our culture, these controls create barriers to new creativity. They

¹⁰⁰ For a similar argument, see Raymond Shih Ray Ku, *Copyright & Cyberspace: Napster and the New Economics of Digital Technology* (Draft on file with author, April 7, 2001) (“cyberspace and the economics of digital technology require the unbundling of the public’s interests in the creation and distribution of digital works.”).

¹⁰¹ Christopher Stern, *Napster Copyright Fight Goes to Hill*, Washington Post, April 4, 2001, at E03.

block the potential for innovation, by adding protections for existing interests.

Okay, time for a politics check. I know what you're thinking: These are just the ravings of a rampant leftist. But as writer Siva Vaidhyanathan argues, "There is no 'left' or 'right' in debates over copyright. There are those who favor 'thick' protection and those who prefer 'thin.'"¹⁰² The argument in favor of balance is not a liberal vs. conservative argument. The argument is old vs. new.

The credentials of at least some conservatives in this debate cannot be questioned. Circuit Judge Richard Posner — father of much in law and economics, and perhaps the most prolific and influential judge of the last hundred years — has written persuasively about the complexity in finding balance in copyright law. As I've described, the property right of copyright is incomplete. As Posner writes:

Since the property right is incomplete, one might suppose that literature is being under produced and therefore copyright protection should be expanded in both scope and duration — perhaps made comprehensive and perpetual. The matter is not so simple.¹⁰³

Not simple — indeed, quite complex. The complexity is just what we've been considering throughout this book. Intellectual property is both an input and an output in the creative process; increasing the "costs" of intellectual property thus increases both the cost of production and the incentives to produce. Which side outweighs the other can't be known a priori. "An expansion of copyright protection," Posner argues, "might ... reduce the output of literature ... by increasing the royalty expense of writers."¹⁰⁴ Thus the idea mix cannot be found simply by increasing the power of copyright holders to control.

¹⁰² Vaidhyanathan, 14.

¹⁰³ Richard A. Posner, *Law and Literature* (Cambridge, Mass.: Harvard University Press; revised and enlarged ed., 1998) 392.

¹⁰⁴ Richard A. Posner, *Law and Literature* (Cambridge, Mass.: Harvard University Press; revised and enlarged ed., 1998) 396. See also William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 *Journal of Legal Studies* 325 (1989).

Other conservatives are a bit more colorful about the point. Consider, for example, one of the brightest stars of the Ninth Circuit Court of Appeals, Judge Alex Kozinski.

Kozinski is an immigrant. His family suffered at the hands of Romanian communism; they fled Romania when he was twelve.¹⁰⁵ In 1985, he was appointed by President Reagan to the federal bench. He has since then been the darling of the Federalist Right. He is an extraordinarily talented and insightful judge, who has little patience for the paternalism of the liberal Left.

But the extremes of copyright drive him mad, and there is no better an opinion describing this view of limited copyright terms than a dissent he wrote to an opinion upholding the right of Vanna White to control the use of images that would remind the public of her.

At issue in the Vanna White case was whether intellectual property law — in particular, a state-created right of publicity — would permit Vanna White of *Wheel of Fortune* fame to control all images that suggest her, including in this case any advertisement that “evoke[s] the celebrity’s image in the public’s mind.”¹⁰⁶

The Court of Appeals for the Ninth Circuit — or, as that circuit includes California, the Court of Appeals for the Hollywood Circuit, as Kozinski puts it¹⁰⁷ — upheld White’s right to control the use of this image. Kozinski sharply dissented. As he wrote:

Something very dangerous is going on here. Private property, including intellectual property, is essential to our way of life. It provides an incentive for investment and innovation; it stimulates the flourishing of our culture; it protects the moral entitlements of people to the

¹⁰⁵ For the history of Judge Kozinski, see Susan Rice’s *Profile, in* L.A. Daily Journal, Sept. 29, 1988, at 1. See also *History of the Federal Judiciary*. Federal Judicial Center, Washington, DC. (2001) (bio of Alex Kozinski from Federal Judges Biographical Database), at http://air.fjc.gov/history/judges_frm.html.

¹⁰⁶ *Vanna White v. Samsung Elecs. Am., Inc.; David Deutsch Assocs.*, 989 F.2d 1512, 1514 (1993).

¹⁰⁷ *Ibid.*, 34.

fruits of their labors. But reducing too much to private property can be bad medicine.¹⁰⁸

Why? For the same reasons we've been tracking throughout this book.

Private land ... is far more useful if separated from other private land by public streets, roads and highways. Public parks, utility rights-of-way and sewers reduce the amount of land in private hands, but vastly enhance the value of the property that remains.¹⁰⁹

The state must therefore find a balance, and this balance will be struck between overly strong and overly weak protection.

Overprotecting intellectual property is as harmful as underprotecting it. Creativity is impossible without a rich public domain.¹¹⁰

But is that unfair? Is it unfair that someone gets to profit off the ideas of someone else? Says Kozinski, No.

Intellectual property law assures authors the right to their original expression, but encourages others to build freely on the ideas that underlie it. This result is neither unfair nor unfortunate: It is the means by which intellectual property law advances the progress of science and art. We give authors certain exclusive rights, but in exchange we get a richer public domain.¹¹¹

This balance reflects something important about this kind of creativity: that it is always building on something else.

Nothing today, likely nothing since we tamed fire, is genuinely new: Culture, like science and technology, grows by accretion, each new creator building on the works of those who came before. Overprotection stifles the very creative forces it's supposed to nurture.¹¹²

¹⁰⁸ Ibid., 27.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Ibid., 31.

¹¹² Ibid., 27.

This balance is necessary, Kozinski insists, “to maintain a free environment in which creative genius can flourish.”¹¹³ Not because “flourish[ing]” innovation is the darling of the Left; but because innovation and creativity was the ideal of our founding, Enlightenment Republic.

My story so far has been about copyright and, indirectly, its cousin, trademark law.¹¹⁴ I have argued that these two bodies of rights will together be used by the old to protect themselves against the threat of the new. This protection is not necessary; there is nothing in our tradition that compels it. But it is pushed not by those with most to lose, but by those without the most to win. And I have argued that we should be skeptical about just this sort of protectionism.

But now I want to describe a second form of protectionism — perhaps more threatening to the promise of the Internet’s future. This threat too is the product of state intervention into Internet space. And this intervention is even harder to justify.¹¹⁵

¹¹³ *Ibid.*, 30.

¹¹⁴ I do not address the reach of trademark law in this area, but it would only strengthen the argument I am making. Unlike traditional intellectual property, trademarks are perpetual, and their effective power has expanded dramatically. This has become especially significant as the domain name system has had to deal with the conflict between trademarks and domain names. This has tempted the World Intellectual Property Association to build control for trademark interests into the very architecture of the network. See ¶¶23-28, Executive Summary of the Interim Report of the Second WIPO Internet Domain Name Process, available at <http://wipo2.wipo.int>.

¹¹⁵ The origin of modern economic work here is Kenneth Arrow’s “Economic Welfare and the Allocation of Resources for Invention,” in National Bureau Committee for Economic Research, *The Rate and Direction of Inventive Activity, Economic and Social Factors* (Princeton, N.J.: Princeton University Press; Richard Nelson ed., 1962) 609. Harold Demsetz responded to this by arguing in favor of a stronger property based regime. See Harold Demsetz, *Information and Efficiency: Another Viewpoint*, 12 *Journal of Law & Economics* 1 (1969).

The issue here is patent law.¹¹⁶ A patent is a form of governmental regulation. It is a state-backed monopoly granting exclusive rights to an “inventor” for an invention deemed useful, novel, and nonobvious.

The argument favoring patents is as old as the hills. If an inventor can’t get a patent, then he will have less incentive to invent. Without a patent, his idea could simply be taken. If his idea could simply be taken, then others could benefit from his invention without the cost. They could, in other words, free-ride off the work of the inventor. If people could so easily free-ride, fewer would be inventors. And if fewer were inventors, then we would have less progress in “science and useful arts.”

Getting more progress is the constitutional aim of patents. So the question that must always be asked of any patent regime is whether we have good reason to believe that patents have that effect. As Harvard Law Professor Stephen Shavell has written, “there is no necessity to marry the incentive to innovate to conferral of monopoly power in innovations.”¹¹⁷ So is there any evidence that it does any good?

¹¹⁶ For a careful account of the framers’ view of the patent power, see Edward C. Walterscheid, *Patents and the Jeffersonian Mythology*, 29 *John Marshall Law Review* 269 (1995). Professor Pollack makes a persuasive argument that the conception is limited by Lockean conceptions of the property right. See Malla Pollack, *The Owned Public Domain: The Constitutional Right Not to be Excluded - Or the Supreme Court Chose the Right Breakfast Cereal in Kellogg v. National Biscuit Co.*, 22 *Hastings Communications & Entertainment Law Journal* 265 (2000). For an introduction to the rationale, see Richard A. Posner, *Economic Analysis of Law* (Boston: Little, Brown, 4th ed. 1992) 38-41.

¹¹⁷ Steven Shavell and Tanguy van Ypersele, *Rewards Versus Intellectual Property Rights*, NBER Working Paper No. 6956, 27 (Feb. 1999). Shavell and Ypersele suggest a reward system to replace a patent system. A similar proposal has been made by Michael Kremer, *Patent Buy-Outs: A Mechanism for Encouraging Innovation* (NBER Working Paper No. 6304, 1997). Chicago Professor Douglas Lichtman has a related proposal to subsidize access to patented drugs. See Douglas Lichtman, *Pricing Prozac: Why the Government Should Subsidize the Purchase of Patented Pharmaceuticals*, 11 *Harvard Journal of Law & Technology* 123 (1997). For criticism of the reward alternative, see F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 *Minnesota Law Review* 697, 709-21 (2001).

In some cases, the evidence is good.¹¹⁸ For some kinds of innovation, patents are extremely likely to induce more innovation. In particular, in theory, where innovation is independent, or non-cumulative (meaning one invention is essentially separate from another), then economists predict that patents will clearly benefit innovation.¹¹⁹ Likewise, even where innovation is cumulative, if the use of the patent is clear, then in principle, the original patent holder will have a strong incentive to license a patent to follow-on innovators.¹²⁰ But here, economists have an important qualification: If we don't know which direction an improvement is likely to take, then licensing may not occur, and patents here may actually do harm.¹²¹ Thus, for economists, at least, the theory suggests contexts in which innovation will be helped by patents as well as contexts where it will be harmed.¹²²

The empirical evidence is less encouraging.¹²³ The strongest conclusion one can draw is that whatever benefit patents

¹¹⁸ Though the economic arguments about the effect of patents on innovation remains ambiguous at best. See, e.g., Roberto Mazzoleni & Richard R. Nelson, *Economic Theories About the Benefits and Costs of Patents*, 32 *Journal of Economic Issues* 1031 (Dec. 1998).

¹¹⁹ Adam B. Jaffe, *The U.S. Patent System in Transition: Policy Innovation and the Innovation Process*, NBER Working Paper Series, 24-25 (Aug. 1999).

¹²⁰ *Ibid.*, 26.

¹²¹ *Ibid.*

¹²² A similar skepticism has been raised about strong property rights where network externalities are strong. See Pamela Samuelson et al., *Manifesto Concerning the Legal Protection of Computer Programs*, 94 *Columbia Law Review* 2308, 2375 (1994), citing Joseph Farrell, *Standardization and Intellectual Property*, 30 *Jurimetrics Journal* 35, 36-38, 45-46 (1989) (discussing network effects).

¹²³ See, e.g., Josh Lerner, *150 Years of Patent Protection* (NBER Working Paper No. 7477, Jan. 2000) (examines 177 policy changes in the strength of protection across 60 countries, over a 150-year period, and concludes that strengthening patent protection had few positive effects on patent applications in the country making the policy change); Mariko Sakakibara & Lee Branstetter, *Do Stronger Patents Induce More Innovation? Evidence from the 1988 Japanese Patent Law Reforms*, 32 *Rand Journal of Economics* 77 (2001) (authors find no evidence of an increase in R&D spending or innovative output). For a longstanding source of skepticism about the effect of strong patents on innovation, see Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90

provide (except in industries such as pharmaceuticals),¹²⁴ it is small. As economist Adam Jaffe concludes, “[T]he value of patent rights might still be too small relative to overall costs and returns to have a measurable impact on innovative behavior.”¹²⁵ And as he concludes more broadly:

There is a widespread unease that the costs of stronger patent protection may exceed the benefits. Both theoretical and, to a lesser extent, empirical research suggest this possibility. Economists have long understood that, at a theoretical level, technological competition can lead to a socially excessive level of resources devoted to innovation. The empirical literature is convincing that, for the research process itself, the externalities are clearly positive on balance (Griliches, 1992). But to the extent that firms’ attention and resources are, at the margin, diverted from innovation itself towards the acquisition, defense and assertion against others of property rights, the social return to the endeavor as a whole is likely to fall.¹²⁶

Other commentators increasingly agree. As *The Economist* recently summarized a broad range of research: “Do firms become more innovative when they increase their patenting activity? Studies of the most patent-conscious business of all — the semiconductor industry — suggest they do not.”¹²⁷

Columbia Law Review 839 (1990) (strong patent assertions in electrical lighting, automobiles, airplanes, radio, slowed down innovation).

¹²⁴ See, e.g., Jean O. Lanjouw, *The Introduction of Pharmaceutical Product Patents in India: Heartless Exploitation of the Poor and Suffering?* (NBER Working Paper No. 6366, 1998); Kieff, 727-28 (2001). For an excellent and comprehensive account of the actual patenting practice, see John R. Allison & Mark A. Lemley, *Who’s Patenting What? An Empirical Exploration of Patent Prosecution*, 53 *Vanderbilt Law Review* 2099, 2146 (2000) (concluding “unwise to think of prosecution as a whole when setting patent policy”); John R. Allison & Mark A. Lemley, *How Federal Circuit Judges Vote in Patent Validity Cases*, 27 *Florida State University Law Review* 745, 765 (2000) (concluding no systematic bias in judges’ votes).

¹²⁵ Jaffe, 46.

¹²⁶ *Ibid.*, 47. Jaffe’s argument here is narrower than the point I am making in this section. His concern is the social costs from too much effort being devoted to the pursuit of patented innovation. My concern is the cost of patents on the innovation process generally.

¹²⁷ “Patently Absurd?” *The Economist* June 21, 2001. As the article goes on to report, interviewees from patenting firms indicated that “rather than patenting

This skepticism has been with us from the start of the patent system. Ben Franklin thought patents immoral.¹²⁸ Some of the greatest inventors of our history have refused to patent most of their inventions.¹²⁹ Science has traditionally resisted patents.¹³⁰ And even Bill Gates, no patsey when it comes to intellectual

to win exclusive rights to a valuable new technology, patents were filed more for strategic purposes.”

¹²⁸ Benjamin Franklin, “having no desire of profiting by patents myself,” cited “...a principle which has ever weighed with me...That, as we enjoy great advantages from the inventions of others, we should be glad of an opportunity to serve others by any invention of ours; and this we should do freely and generously.” Benjamin Franklin, *The Autobiography of Benjamin Franklin* (Garden City, N.Y.: Garden City Publishing Co.; Frank Woodworth Pine ed., 1916) (1793) 215-16.

¹²⁹ George Washington Carver, for example, observed about his inventions that, “God gave them to me, how can I sell them to someone else?” *Inventors*, Atlanta Journal & Constitution, Feb. 12, 1999, at A17.

¹³⁰ Robert K. Merton, *A Note on Science and Democracy*, 1 *Journal of Law & Political Sociology* 115, 123 (1942). (“Patents proclaim exclusive rights of use and, often, nonuse. The suppression of invention denies the rationale of scientific production and diffusion.”). As Professor Arti Rai describes it, “traditional scientific norms promote a public domain of freely available scientific information, independent choice in the selection of research topics, and (perhaps above all) respect for uninhibited scientific invention.” Arti Kaur Rai, *Regulating Scientific Research: Intellectual Property Rights and the Norms of Science*, 94 *Northwestern University Law Review* 77, 89-90 (1999).

More famously, Merton is known for characterizing “science” as “communistic”:

“Communism,” in the nontechnical and extended sense of common ownership of goods, is a second integral element of the scientific ethos. The substantive findings of science are a product of social collaboration and are assigned to the community. They constitute a common heritage in which the equity of the individual producer is severely limited. An eponymous law or theory does not enter into the exclusive possession of the discoverer and his heirs, nor do the mores bestow upon them special rights of use and disposition. Property rights in science are whittled down to a bare minimum by the rationale of the scientific ethic. The scientist’s claim to “his” intellectual “property” is limited to that of recognition and esteem which, if the institution functions with a modicum of efficiency, is roughly commensurate with the significance of the increments brought to the common fund of knowledge. Eponymy — for example, the Copernican system, Boyle’s law — is thus at once a mnemonic and a commemorative device.

Merton, 121.

property protections, expressed skepticism about software patents. As he wrote in a memo to Microsoft executives in 1991,

If people had understood how patents would be granted when most of today's ideas were invented and had taken out patents, the industry would be at a complete standstill today.¹³¹

The first patent commissioner himself — Thomas Jefferson — was also extremely skeptical about these forms of monopoly. Commenting upon the proposed Constitution, with its proposed provision for granting monopolies to cover writings and inventions, Jefferson wrote that he wished the draft would be amended to eliminate any monopolies. As Jefferson wrote:

I sincerely rejoice at the acceptance of our new constitution by nine states. It is a good canvas, on which some strokes only want retouching. What these are, I think are sufficiently manifested by the general voice from north to south which calls for a bill of rights. It seems pretty generally understood that this should go to juries, habeas corpus, standing armies, printing, religion and monopolies.... The saying there shall be no monopolies lessens the incitement to ingenuity, which is spurred on by the hope of a monopoly for a limited time, as of 14 years; but the benefit even of limited monopolies is too doubtful to be opposed to that of their general suppression.¹³²

Jefferson's views about patents were not his alone. From the beginning of the Supreme Court's interpretation of the law of patent, it has affirmed that patents are no natural right; that the

¹³¹ Fred Warshofsky, *The Patent Wars* (NY: Wiley 1994), 170. Of course, I don't mean to suggest Microsoft is against software patents. Indeed, in the same memo, Gates goes on to recommend the Microsoft strategy to respond to this new world of patents:

The solution . . . is patent exchanges . . . and patenting as much as we can. . . . A future start-up with no patents of its own will be forced to pay whatever price the giants choose to impose. That price might be high: *Established companies have an interest in excluding future competitors.*

Ibid., at 170-71. (emphasis added).

¹³² Thomas Jefferson, Letter to James Madison, in Julian P. Boyd, Ed., 13 *The Papers of Thomas Jefferson*, Princeton, N.J.: Princeton University Press, 1956, p. 440, 442-3.

scope of patent rights is just as far as Congress extends it. And Congress should extend it only when Congress has reason to believe the monopolies it extends will do some good.

In the first two hundred-plus years after Congress first enacted a patent statute, the duration and scope of patent law was fairly stable. The Framers set a term of four years; they quickly extended that to fourteen; and that term is close to the current term of twenty. And from the start, patents were not granted for just anything; invention was required. So too today, when an invention must be novel, nonobvious, and useful.¹³³

But in the past twenty years, an important shift has occurred. The limits to the reach of patent law have been eroded by a number of expansions in patent law doctrine. “These changes,” Adam Jaffe writes, “were not brought about primarily by Congressional action, but rather by the ... Patent Office.”¹³⁴

The expansions I want to focus on here are those relating to cyberspace. And these include the patenting of software inventions, and business methods.

Before the 1980s, software inventions in the United States were not subject to patent protection. The reasons were tied to the nature of programming (programs were considered algorithms, and algorithms were traditionally not protected), but the arguments in favor of not making software patentable were more pragmatic. Since software is often distributed without its source, it is often extremely hard to understand how it is in fact achieving its effect. On the surface, functions could be implemented in any number of

¹³³ To qualify for patent protection, an invention must be novel, 35 U.S.C. §§101, 102 (1982), it must provide utility, 35 U.S.C. §§101, 112 (1982), and it must be non-obvious, *ibid.*, §103. The invention must also be within the list of patentable subject matter. 35 U.S.C. §101 (1982).

¹³⁴ Jaffe, 9. The changes have also coincided with an increase in the number of patents. On one account, that increase may be because patents are indeed a spur to innovation. Researchers, however, have concluded differently. Samuel Kortum & Josh Lerner, *Stronger Protection or Technological Revolution: What is Behind the Recent Surge in Patenting?*, 48 Carnegie-Rochester Conference Series on Public Policy 247 (1998) (attributing increase to improvements in the management of research); Bronwyn H. Hall & Rosemarie Ham Ziedonis, *The Patent Paradox Revisited: An Empirical Study of Patenting in the U.S. Semiconductor Industry, 1979-1995* 32 *Rand Journal of Economics* 101 (2001) (attribute increase to portfolio races).

ways. When you sort a list of addresses within an address-book program, in principle, the algorithm that sorts the list could be one of a million such programs. (More than one way to skin a cat.) When you display a picture, how the picture is displayed is nothing that is obvious to the developer or user.

But beginning in the 1980s, courts started recognizing software inventions as patentable inventions. And by the early 1990s, these patents had taken off. From 1980 to 2000, patent applications for software-related patents have gone from 250 in 1980 to 21,000 in 1999, and the number granted has increased 8 or 9 fold.¹³⁵

¹³⁵ Email from Greg Ahronian, author, Internet Patent News Service, May 28, 2001, on file with author.

Greg Ahronian is perhaps the leading expert on the practice of software and Internet-related patents. While he is a supporter of patents in principle, he has been a strong critic of the Patent Office. Aharonian estimates the number of software patents in a number of ways. He provided the following data to me:

“TOTAL is the total number of patents issued that year, GREG is my count or estimated count of software patents (using the Greg Aharonian scheme) issued in that year. SOFTWARE is the number of patents in that year that includes the word “software” somewhere in the specification, claims or abstract. (364&395) is the total number of patents issued in these two main computing classes.”

YEAR	TOTAL	GREG	SOFTWARE	364&395
1999	154534	21000(est)	17603	6410
1998	150961	17500(est)	16100	10571
1997	124181	13000(est)	10017	8190
1996	121799	9000	9104	7922
1995	113941	6142	6951	6114
1994	113706	4569	6009	5745
1993	109876	2400	4929	4862
1992	107489	1624	4068	4073
1991	106831	1500	3543	3817
1990	99210	1300	3046	3606

What was most striking about this explosion of law regulating innovation was that the putative beneficiaries of this regulation — coders — were fairly uniformly against it. As Richard Stallman put it, “We did not ask for the change that was imposed upon us.”¹³⁶ And this attitude was not limited to free software

1989	102686	1600	3090	3980
1988	84433	800	2053	2708
1987	89578	800	2038	2766
1986	77039	600	1483	2202
1985	77268	500	1324	1978
1984	72668	400	1003	1857
1983	62005	350	635	1517
1982	63291	300	603	1446
1981	71105	300	544	1257
1980	66206	250	465	1239
1979	52480	200	269	986
1978	70564	150	299	1272
1977	69797	100	300	1320
1976	70924	100	208	1113
1975	72156	100	188	817
1974	62342	100	188	838
1973	61019	150	122	871
1972	58603	200	110	906
1971	50904	100	68	896
	2,537,596	33,635	96,360	91,279

¹³⁶ Seth Shulman, *Owning the Future* (Boston: Houghton Mifflin, 1999) 69.

advocates. When the Patent Office began explaining this new benefit they would be providing software developers, key developers from a range of software industries were frantic in avoiding the benefit. As Douglas Brotz from Adobe Corporation said in 1994:

I believe that software per se should not be allowed patent protection. I take this position as the creator of software and as the beneficiary of the rewards that innovative software can bring in the marketplace. . . . [Adobe and I] take this position because it is the best policy for maintaining a healthy software industry, where innovation can prosper.¹³⁷

Oracle took the same position.¹³⁸ The system wasn't broke, these coders said. It certainly didn't need Washington to fix it.

But Washington was not to be deterred, and the push for software patents did not go away. Instead, quite the opposite. Over time, the push was for even broader patent protection — this time to cover business processes as well as software inventions.

A software implemented business process patent is a patent for a process of doing business, sufficiently novel and non-obvious to earn the U.S. Patent and Trademark Office's favor.¹³⁹ Most thought such processes beyond the reach of patent law. This was not because patent law never covered processes — it plainly did. But the expectation was that it would not cover business's processes because adequate return from the process itself would create a sufficient incentive to invent.¹⁴⁰

In 1998, however, the United States Court of Appeals for the Federal Circuit put this idea to rest. The patent law reached

¹³⁷ Douglas Brotz made this statement at the Public Hearing on Use of the Patent System to Protect Software Related Inventions, Jan. 26, 1994, at the San Jose Convention Center, transcript available at <http://lpf.ai.mit.edu/Patents/testimony/statements/adobe.testimony.html>.

¹³⁸ "Oracle Corporation opposes the patentability of software." Statement available at <http://www.base.com/software-patents/statements/oracle.statement.html>, (visited June 8, 2001).

¹³⁹ Patent law has long protected process patents. Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 *California Law Review* 1, 8 (2001).

¹⁴⁰ Rochelle Cooper Dreyfuss, *State Street or Easy Street: Is Patenting Business Methods Good for Business?*, U.S. Intellectual Property: Law & Policy 27 (2000).

business processes just as any other, and patents for business methods were, the court held, not invalid because of the subject matter.¹⁴¹

The case in which this issue arose was one where a financial services company had developed a new kind of mutual fund service, which would manage a pool of mutual funds through a software-based technology. The court upheld both the software patent and the patent on the business method. Both, the court said, were inventions that the patent law could reach. This decision, in turn, gave birth to an explosion of business method patent applications. And by 1999, many were beginning to be approved in a way that surprised the industry. Applications for computer-related business methods jumped from about 1,000 in 1997 to over 2,500 in 1999.¹⁴² High on that list was the Amazon One-Click patent, but also on the list were Priceline's reverse auction patent, and British Telecom's claim that it owned the invention of hyper-text links (and hence the World Wide Web!)¹⁴³

In all these cases, the question the monopoly-granting body asked was simply this: Was this sort of "invention" sufficiently like others that were the subject of patents? If so, then the patent was granted for this field of innovation.

Economists, however, are likely to ask a much different question. While it is clear that patents spur innovation in many important fields, it is also clear that for some fields of innovation, patents may do more harm than good.¹⁴⁴ While increasing the

¹⁴¹ State St. Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998).

¹⁴² Carl Shapiro, Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting 2 (May 2000).

¹⁴³ See Laura Rohde, *BT Flexes Muscles Over U.S. Hyperlink Patent*, June 21, 2000, available at: <http://www.idg.net/idgns/2000/06/21/BTFlexesMusclesOverUSHyperlink.shtml>. The Amazon patent has received increasingly skeptical review in the courts. After a district court enjoined Barnes & Noble from using a similar technology, *Amazon.com v. Barnesandnoble.com*, 73 F. Supp 2d 1228 (W.D. Wash. 1999), the court of appeals for the Federal Circuit reversed the injunction, finding Barnesandnoble.com had mounted a substantial challenge to the validity of the patent. *Amazon.com v. Barnesandnoble.com*, 239 F.3d 1343 (CAFC 2001).

¹⁴⁴ James Bessen & Eric Maskin, Sequential Innovation, Patents, and Imitation (Jan. 2000) (available at <http://researchoninnovation.org/patent.pdf> (visited on

incentives to innovate, patents also increase the costs of innovation. And when the costs outweigh the benefits, patents make little sense.

How could this be? The answer links to an argument we've seen in many different contexts before. The ordinary argument for a strong patent right is a kind of prospecting theory. First advanced by Edward Kitch, the prospect theory says there is good reason to hand out broad, strong patents because then others will know with whom they should negotiate if they want to build upon a certain innovation.¹⁴⁵ This in turn will create incentives for people to invent, and as information is a by-product of invention, it will induce "progress" in the "useful arts."¹⁴⁶

The problem with this theory, however, is its very strong assumption (in some contexts, at least) that the parties will know

June 10, 2001).) See also *Patently Absurd*, "[T]he rush to acquire patent portfolios could slow down the generation of new ideas."

¹⁴⁵ See Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 *Journal of Law & Economics* 265 (1977) (advocating prospect theory). See also Merges & Nelson, 839 (propounding a race-to-invent theory; lethargy in patent development will lead to a problem of "under-fishing"; thus, where innovation is cumulative, narrow patents are better). See also Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 *Virginia Law Review* 305 (1992) (arguing that patents reduce rent dissipation from races to initial invention, races to improvements and wasteful efforts to keep secrets). For a critique of Grady and Alexander, see Robert P. Merges, *Rent Control in the Patent District: Observations on the Grady-Alexander Thesis*, 78 *Virginia Law Review* 359 (1992).

¹⁴⁶ As Professor Julie Cohen describes,

Kitch based his "prospect" theory on an analogy to nineteenth-century mining claims, which reserved for first-comers all rights to explore the described terrain. Under the prospect theory of patent scope, issued patents would operate as broad reservations of rights in the technical landscape. As a result, patentees could credibly seek to exact royalties for nearly all improvements, whether literally infringing or not. Improvers, meanwhile, would need to think twice before refusing such demands. To a greater degree than ever before, second-comers would need permission to develop and market their innovations.

Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 *California Law Review* 1, 14-15 (2001).

enough to properly license the initial, foundational invention, or that other issues won't muck up the incentives to license.¹⁴⁷

Both limitations on the ability to license are what economists would call transactions costs.¹⁴⁸ The transaction cost from ignorance is similar to the insight the founders of the Net had when they embraced an end-to-end architecture: rather than architecting a system of control from which changes could be negotiated, they were driven by humility to a system of noncontrol to induce many others to experiment with ways of using the technology that the experts wouldn't get.¹⁴⁹

¹⁴⁷ Ibid., 15. ("It assumes that owners can readily identify, and would readily license, successful improvers; that the gains from coordination would outweigh the costs of any strategic behavior by owners and improvers; and that the initial allocation of stronger property rights to the prospect owner would not adversely affect improvers' incentives (or that an overall increase in productivity would outweigh any such adverse effect).").

¹⁴⁸ Cf. Rai, 121 (criticizing patents because of the "losses in creativity and high transaction costs that such grants generate").

¹⁴⁹ This point is not specific to the Internet, or to software technologies. Professor Arti Rai has made a similar point in the context of basic scientific research.

Bargaining between the patent holder and improver would face a variety of obstacles. First, there would be very substantial difficulties in valuation. It is by no means clear how one goes about valuing an EST of unknown function, let alone uncertain but potentially highly lucrative research using that EST. Disagreement about the value of the patented invention relative to the value of the research project might make it very difficult for the parties to agree on the terms for a license. This disagreement might well be exacerbated by cognitive biases that could lead the EST patent owner to overvalue its asset. In particular, the owner might overestimate the possibility that the EST would lead to the finding of a valuable drug therapy and then negotiate based on this irrational estimation. Negotiation would also be hampered by Arrow's information paradox: it might be impossible for the subsequent researcher to get a license *ex ante* without disclosing to the patent holder valuable information about its own research plans. But because this research plan would not be protectable as intellectual property, the competitor might fear that the patent holder would appropriate the information for its own use, with no compensating benefit to the competitor. Even if these

The transaction cost affecting incentives to license is in part a problem of ignorance, but in part the problem of strategic behavior that we've seen in many different contexts. It is the problem Christensen is discussing in *The Innovators Dilemma*: the

difficulties did not lead to bargaining breakdown, they would create transaction costs that reduced the cooperative surplus to be gained from a license and would thus deter at least some inventors and improvers from negotiating in the first instance. Transaction costs would be compounded by the likelihood that the would-be follow-on improver would likely have to negotiate licenses not simply with one owner of basic research but with many such owners. For example, in order to develop a commercial treatment for a genetic disease (particularly a polygenic disease), it may be necessary to have access to a large number of ESTs and SNPs, each conceivably patented by a different entity. Similarly, in order to screen potential pharmaceutical products for therapeutic effects and side-effects at the pre-clinical testing stage, it may be very useful to have access to a large number of different receptors, each potentially controlled by a different owner. Some of these difficulties might be addressed if the bargaining occurred *ex post*, after the follow-on improver had already developed the improvement. In that case, both the initial inventor and the follow-on improver would have greater knowledge of the value of the improvement relative to that of the original invention. Moreover, in the *ex post* situation, the possibility of "blocking patents" might provide a way around Arrow's information paradox. Blocking patents arise when a follow-on improver takes a patented product and improves it in a nonobvious way. Although the follow-on improver can then secure a patent on that improvement, the improvement may nonetheless infringe the original patent. In the blocking patent situation, neither the initial patent holder nor the follow-on improver can sell the improvement without cross-licensing. But, if the improvement is truly significant, such that the initial inventor would want to sell the improvement itself, it would presumably have a financial incentive to cross-license the improver.

Ibid., 125-26. Rebecca Eisenberg makes a similar point: "Michael Heller and I argue that too many patent rights on 'upstream' discoveries can stifle 'downstream' research and product development by increasing transaction costs and magnifying the risk of bargaining failures." Rebecca S. Eisenberg, *Bargaining Over the Transfer of Proprietary Research Tools*, 224. See also Robert P. Merges, *Institutions for Intellectual Property Transactions: The Case of Patent Pools*, in *Expanding the Boundaries of Intellectual Property* (Oxford: Oxford University Press, Rochelle Cooper Dreyfuss & Diane Leenheer Zimmerman eds., 2001) 127-28.

problem of non-neutral platforms that guided our review in chapter 4 of open code projects.

My claim is not that these transaction costs are so high as to make patents unadvisable in the Internet context. My point is simply that these considerations, supported as they have been,¹⁵⁰ at least raise a question.

So given this complexity, you might think that policy makers would be eager to know whether the fields covered by software and business method patents are the sort where innovation is helped by patents or harmed. You might think — given the extraordinary importance that these markets have played in the recent economic boom — that before the government tries to fix something through monopolies, it would check to see if anything is broke.

I had the chance to ask the government just this. In a debate in Washington, I was on a panel with Q. Todd Dickinson, patent commissioner in the last days of the Clinton administration. In my part of the opening presentation, I suggested that it would be important to know whether patents will help in these fields or harm.

Dickinson was impatient with the question. As he said:

Some days I wish I was the professor and only had to think about these things and not do the work. But I got an office to run. And I've got 1,500 applications coming in this year and I have to figure out what to do with them. I don't have the luxury to wait for five years for Congress to figure out whether they will change the law or not.

Publisher and Net guru Tim O'Reilly was on the same panel. He had a quick and devastating response. The head of the Patent Office, O'Reilly said, has two roles in the administration. One is, as Dickinson had just said, to run the office. But the other is to advise the administration about what policy made sense. And where, O'Reilly asked, following up on my own question, was the policy analysis that justified this extraordinary change in regulation?

I remember thinking, Where are the Republicans when you need them? Here was critical new regulation that would significantly affect innovation in cyberspace. Where was the

¹⁵⁰ Bessen & Maskin.

regulatory impact statement? Here was a government official overseeing a radical expansion in patent regulation, within a field that had been the most important component of growth in the United States' economy in the past twenty years. Yet the government didn't have time to learn whether its patent policy would do any harm or good? Regulate first, ask questions later.

There's good reason to wonder whether patents are necessary in a field such as this. Patent law is designed to create a barrier against idea theft, so that inventors have an incentive to invent and use their ideas. The term of this protection is not to be overly long: patents are monopolies; monopolies raise prices. The term should be long enough to give enough incentive, without being so long as to raise prices unnecessarily.

But a patent isn't the only device that might protect the innovator against inefficient copying. Being first to market in a network economy creates a first mover advantage without imposing the costs of a patent.

And other incentives are often sufficient to induce innovation without a patent. Jeff Bezos, for example, said of the One-Click patent that Amazon.com would have developed the One-Click technology whether or not there was a patent system.¹⁵¹ The reason is obvious: The system helps sell more books, and the profit from those additional sales of books is enough of an incentive for the invention of new technology.

Either one of these reasons, plus a host of others suggested by legal and economic scholars, would lead a rational policy maker to ask whether monopoly is needed here.¹⁵² But this question has not been asked about patents affecting cyberspace.

¹⁵¹ Steven Levy, *The Great Amazon Patent Debate*, Newsweek, Mar. 13, 2000, at 74 ("I asked Bezos if Amazon would have developed 1-Click even if there were no patent system to protect it and anyone could legally rip it off. "Yes," he responded without hesitation. "Very definitely.""). This point suggests a related reason to be skeptical about these patents. Patents can induce over investment in patent protection; the low additional cost to get the protection may induce too much patent duplication. See Posner, *Economic Analysis of Law*, 39.

¹⁵² For skepticism about software patents, see e.g., Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 Emory Law Journal 1025 (1990); A. Samuel Oddi, *Beyond Obviousness: Invention Protection in the Twenty-First Century*, 38 American University Law Review 1097 (1989) (arguing that patents should be issued only for major innovations); Pamela Samuelson et al., 2308. See also

So why is Washington doing it? What reason could there be for the government to allow this launch of regulation to occur without even a hearing about whether the regulation will do any good?¹⁵³

The answer is obscure, but we can identify a number of causes. First is the patent bar itself. Dickinson is not an evil man; his heart is certainly in the right place. But he is a political figure, who feels the pressure of the interest group that is most affected by the decision of his department. That interest group is the patent bar — a group of lawyers who like the world where their market increases dramatically. What interest do they have to ask whether this increased regulation does any good?

Second is our general way of thinking about patents. Most of us don't think about patents as a form of regulation. Most consider patents as property in the same sense that my car is property. In that same debate, patent king Jay Walker was also on the panel. He argued that the question in this debate about patents was whether you were for property or against it — and in his view, the pro-property view was “beyond reproach.”¹⁵⁴

Cohen & Lemley, (arguing for narrowing to permit reverse engineering). On business method patents, see e.g., *One-click Monster*, *American Lawyer*, May 2000, at 51; Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 *Computer & High Technology Law Journal* 263 (2000); William Krause, *Sweeping the E-Commerce Patent Minefield: The Need For a Workable Business Method Exception*, 24 *Seattle University Law Review* 79 (2000); Jared Earl Grusd, *Internet Business Methods: What Role Does and Should the Law Play?*, 4 *Virginia Journal of Law & Technology* 9 (1999).

¹⁵³ “In the United States, despite the longstanding controversy around software patents, there has been virtually no government effort to study the economic effects of expanded patent protection. The one government-commissioned study of which I am personally aware was suspended at the request of a multinational company with a unique position in software patents.” Brian Kahin, Comments in response to “The Patentability of Computer-Implemented Inventions” 1 (2000), available at http://europa.eu.int/comm/internal_market/en/intprop/indprop/maryland.pdf. The National Academies has launched a study, *Project on Intellectual Property in the Knowledge-Based Economy*, <http://www.nationalacademies.org/ipr>.

¹⁵⁴ See Internet Society Panel on Business Method Patents, <http://www.oreillynet.com/lpt/a/434> (“Property, the first of the three debates I argued, I would argue is beyond reproach and the burden of proof is not on those who would need to say property should be but on those who say property

But again, this is just silly. Patents are no more (and no less) “property” than welfare is property. Granting patents may make sense, as providing welfare certainly makes sense. But the idea that there is a right to a patent is just absurd. From the very beginning, our tradition has self-consciously understood that the only question guiding whether to issue a patent or not is whether or not patents will do *society* any good. As conservative economist Friedrich von Hayek put it,

It seems to me beyond doubt that in [the fields of patent and copyright] a slavish application of the concept of property as it has been developed for material things has done a great deal to foster the growth of monopoly and that here drastic reforms may be required if competition is to be made to work.¹⁵⁵

Rather than reason, what governs the current patent debate is bias — bias in favor of a system that seems right just because it seems old.¹⁵⁶ But the relevant system is not old — it is being

should not be because historically societies that did not respect property rights, all right, ended up in the dust bin of history.”).

¹⁵⁵ “Free Enterprise and Competitive Order,” in *Individualism and Economic Order* (Chicago: University of Chicago Press), 107, 114. Nobel Prize winning economist Milton Friedman expressed similar skepticism. “[T]rivial patents ... are often used as a device for maintaining private collusive arrangements that would otherwise be more difficult or impossible to maintain.” Milton Friedman, *Capitalism and Freedom* (Chicago: University of Chicago Press 1962), 127.

¹⁵⁶ Lest too much of my own bias become apparent, I should note that there are some who argue strongly (and in some ways convincingly) that between a well functioning copyright and well-functioning patent system, a patent system for software may well be better. As Mark Haynes argues, “unlike copyright, the patent system encourages improvement patents, through which competitors are able to neutralize the patent portfolios of others.” Mark A. Haynes, Commentary, *Black Holes of Innovation in the Software Arts*, 14 *Berkeley Technology Law Journal* 567, 574 (1999). Likewise, as Mark Lemley and David O’Brien have argued, patents would encourage the deployment of reusable software “components.” Mark A. Lemley & David W. O’Brien, *Encouraging Software Reuse*, 49 *Stanford Law Review* 255 (1997). Thus, conceivably, a patent system would encourage innovation. And Professor Scott Kieff has argued quite convincingly that patents spur not just innovation, but also commercialization. See F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 *Minnesota Law Review* 697 (2001). Commercialization, Kieff argues, depends upon property rules protecting invention, not liability rules. Compare Ian Ayres & Paul Klemperer, *Limiting Patentees’ Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 *Michigan Law Review* 985 (1999) (arguing for liability, rather than property protection, for patent rights).

expanded in ways that would shock lawyers of a generation ago. And something is right not because it is old, but only if it does some good. But we will never know whether or not it does any good if we accept this never-ending expansion without limit. We will never know what benefit this regulation provides until we begin to demand that the regulation prove itself.

For the harms from this regulation are not hard to identify, and for the cynical, or conspiratorial, the harms are not surprising. (On the margin, the costs of a patent system will harm small inventors more than large; negotiating a patent system is easier for IBM than for the garage inventor.)¹⁵⁷ And the harms from an expanded American patent system will harm foreign inventors more than American. (It is easier to hire American law firms locally than from a distance.) Thus this expansion in patent protection will shift the competitive field away from the small, non-American inventor in favor of the large, American inventor.¹⁵⁸

I'm skeptical, but not a committed skeptic. These accounts don't (and don't purport to) account for the full costs of a patent system, nor the particular costs that would affect software developers. Nor do they deny the burdens imposed by the current patent system. Thus, while such a benefit is possible, that it is possible in the current regime has not, in my view, been shown.

¹⁵⁷ Telephone interview with Bob Young (Nov. 14, 2000). See also Kahin, 3-4 ("At the level of individual patents, patents may benefit small firms more than large firms because small-firm options for appropriating returns from innovation are fewer. For example, small firms may be less able to exploit first-mover advantages. At the portfolio level, large firms with large portfolios benefit disproportionately from network effects and economies of scale and scope. This includes their ability to manage transaction costs, which is the subject of the third perspective that I will explore at greater length."); 4 ("Small firms (with some exceptions) are generally disadvantaged because they lack in-house patent counsel and their business focus can be easily distracted by litigation or even claims of infringement.").

¹⁵⁸ "In the short run, individual patents work to [the benefit of small firms], while in the long run and in the aggregate, patents favor large firms. The more pervasive patenting becomes, the more the long-term, portfolio-level effects dominate." Kahin, 4.

Patents have also been said to be a useful tool for old companies to protect themselves against the new. As Gary Reback, Silicon Valley entrepreneur and attorney describes the history in the Valley, "we went through a long period like that where I saw companies like IBM going around Silicon Valley ... leaning on the new generation of companies like SUN . . . to develop a revenue stream out of their patent portfolio." Telephone interview with Gary Reback (Nov. 21, 2000).

The harms are even more pronounced, however, for open code projects. Tim Berners-Lee has noticed its effect on Web development already. (“Developers are stalling their efforts in a given direction when they hear rumors that some company may have a patent that may involve the technology.”¹⁵⁹ One example is the development of P3P, which may enable better protection of privacy on the Web.) And open code proponents — like software developers generally — have been among the strongest opponents to patents in this field. As Richard Stallman writes, “The worst threat we face comes from software patents, which can put ... features off-limits to free software for up to twenty years.”¹⁶⁰ Red Hat chairman Bob Young thinks much the same: “[S]oftware patents [are] an evil, or at least [a] very damaging encroachment on the efficacy of the software programming industry.”¹⁶¹

The reason patents harm open code in particular is not hard to see. Think about the mechanics of licensing a patent when you are licensing for anyone working on an open code project. Who knows who they are? How many users need to be sanctioned? As Peter Wayner writes, “[T]hese questions are much easier to answer if you’re a corporation charging customers to buy a product.”¹⁶² Thus patents tilt the process to harm open code developers.

The problem is exacerbated with software patents because though the patent system was designed to induce inventors to reveal their invention to the public, there is no obligation that a software inventor reveal his source code to get a patent. “The single most revealing symptom” of the failure of the existing system, Professor Brian Kahin writes, “is that the software professionals do

¹⁵⁹ Tim Berners-Lee, *Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web by Its Inventor* (San Francisco: Harper, 1999) 196.

¹⁶⁰ Richard Stallman, *The GNU Operating System and the Free Software Movement*, in *Open Sources: Voices from the Open Source Revolution* 53 (Beijing; Sebastopol: O’Reilly; Chris DiBona, Sam Ockman & Mark Stone eds., 1999) 67.

¹⁶¹ Robert Young & Wendy Goldman Rohm, *Under the Radar: How Red Hat Changed the Software Business—and Took Microsoft by Surprise* (Scottsdale, AZ: Coriolis Group Books, 1999) 135-36.

¹⁶² Peter Wayner, *Free for All: How Linux and the Free Software Movement Undercut the High-Tech Titans* (New York: HarperBusiness, 2000) 223-24.

not read patents.”¹⁶³ As Bob Young analogizes it, “It’s like that ceramic guy, producing a new kind of ceramic and [patenting it] without ever telling anyone how he made the extra hard ceramic. So in software you’re saying ‘I’m patenting software that has this look and feel, but I don’t actually have to tell people how I achieved that look and feel.’ The source code remains a secret.”¹⁶⁴

And then there is the expense of patents, which is born more sharply by smaller inventors than larger. The costs include the costs of securing a patent, but those in the end are trivial. The real costs are born by those who would challenge a patent. If the Patent Office makes a mistake, and patent is granted that shouldn’t be granted, then it costs on average \$1.5 million (for each side) to take a patent dispute to trial.¹⁶⁵

Finally, there is the obvious “hold-up” problem — where an innovator is about to release a product and is discovered to be violating a patent. As Berkeley economist Carl Shapiro describes it:

The hold-up problem is worst in industries where hundreds if not thousands of patents, some already issued, others pending, can potentially read on a given product. In these industries, the danger that a manufacturer will “step on a land mine” is all too real. The result will be that some companies avoid the minefield altogether, i.e., refrain from introducing certain products for fear of hold-up. Other companies will lose their corporate legs, i.e., will be forced to pay royalties on patents that they could easily have invented around at an earlier stage, had they merely been aware that such a patent either existed or was pending.¹⁶⁶

¹⁶³ Kahin, 5.

¹⁶⁴ Telephone interview with Bob Young.

¹⁶⁵ Ian Mount, *Would you buy a Patent License from This Man?*, eCompany (April), available at <http://www.ecompany.com/articles/mag/0,1640,9575,00.html>.

¹⁶⁶ Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting* 8, Forthcoming, *Innovation Policy and the Economy*, Volume I (MIT Press; Adam Jaffe, Joshua Lerner, and Scott Stern eds., 2001.) Shapiro recommends that antitrust authorities permit packaging licensing for complementary, but not substitute, patents, as a way to reduce the transaction costs associated with the hold-up problem created by patents.

As Shapiro concludes, “[T]his ‘hold-up’ problem is very real today, and . . . should [be considered] a problem of first-order significance in the years ahead.”¹⁶⁷

This may be an unintended consequence of this recent expansion in protection. I am, for example, quite certain this would not have motivated the different courts that have contributed to this expansion. But it may well explain why there is little passion from those who fund lobbyists to find a way to cut back on the expansion. By letting things go as they are, this change may well give them a competitive advantage over the innovator who can’t fund a legal team or isn’t from the United States. Again, as Bill Gates of Microsoft told his senior management,

A future start-up with no patents of its own will be forced to pay whatever price the giants choose to impose. That price might be high: *Established companies have an interest in excluding future competitors.*¹⁶⁸

This story about the potential danger of patents in a field where innovation is sequential and complementary (where one builds on another, and the second complements the value of the first) gets additional support from an ingenious argument that Michigan law professor Michael Heller initially made and that

¹⁶⁷ C. Shapiro, 7. A related argument is summarized by Denise Caruso. As she argues in *Patent Absurdity*, N.Y. Times, Feb. 1, 1999, available at <http://www.nytimes.com/library/tech/99/02/biztech/articles/01digi.html>, “Ideas are given their literal currency through patent and copyright laws, originally intended to stimulate innovation by protecting inventors from idea snatchers and allowing them to profit more easily from their talents. But some experts worry that an increasing number of individuals and companies are perverting that original purpose with increasingly specious claims to ownership, as well as by stockpiling patents into competitive arsenals.” *Ibid.* Caruso identifies such things as “[a] patent for using a book as a teaching tool” and “a patent for downloading files over the Internet for a fee” as some of the more ridiculous recent developments in intellectual property law and adds that “various technology companies, including IBM, Intel and Hewlett-Packard, use their vast holdings of patents as competitive weaponry in seeking to disable each other with infringement charges Today’s relaxed rules for granting patents, and the greater ease with which arsenals can thus be amassed, gives a decided battle advantage to industry heavyweights In today’s business environment, in which a company’s market value is measured with increasing frequency by the intellectual property it owns, arsenals of patents — specious or not — make an unfortunate kind of sense.” *Ibid.*

¹⁶⁸ Warshofsky, *The Patent Wars*, 170-71. (emphasis added).

economist James Buchanan has now followed up on.¹⁶⁹ Heller introduces the concept of an “anticommons.” If a commons is a resource where everyone has a right to use the resource (and therefore sometimes overuse the resource), an anticommons is a resource where many have the right to *block* the use of a resource by others (and therefore under-use the resource). Heller gives the example of formerly state-owned buildings in post-Soviet Russia: because of the many claims that could be made on them, the buildings were never developed. Too many bureaucrats could veto any project, and thus insufficient effort at innovating in the use of these buildings was made.

Nobel Prize-winning economist James Buchanan has expanded this idea to the problem of regulation generally.¹⁷⁰ He points to the problem of patents in particular, following Heller, as an example where multiple and overlapping patent protection may create an anticommons, where innovators are afraid to innovate in a field because too many people have the right to veto the use of a particular resource or idea. This potential for strategic behavior by these many rights holders makes it irrational for an innovator to develop a particular idea, just as the possibility of veto by many bureaucrats may leave a particular piece of real property underdeveloped.

These ideas map directly onto the argument we’ve considered in this book. Control, when complex, can often increase the costs of using a resource; increasing those costs can easily chill innovation. Recall the extreme of AT&T’s control over innovation in the telecommunications system: Who would waste his time developing for that system, when any development would require convincing so many quasi-bureaucrats before it could even be tried?

The complexity in these rights to exclude creates this anticommons problem. And the more severe the problem, the more it will stifle new innovation.

¹⁶⁹Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111 *Harvard Law Review* 621 (1998). The general issue of patents in sequential, or cumulative innovation, is addressed by . James Bessen and Eric Maskin argue that this is precisely the kind of innovation that is harmed the most by strong patent protection. See Bessen & Maskin. See also *Merges, Institutions for Intellectual Property Transactions*, 125.

¹⁷⁰James M. Buchanan and Yong J. Yoon, *Symmetric Tragedies: Commons and Anticommons*, 43 *Journal of Law & Economics* 1 (2000).

I've told a story about intellectual property in two critical competitive contexts.¹⁷¹ In both contexts, the emerging regime will have a significant regulatory effect. In both contexts, the regime will shift protection from the new to the old. The law in both cases will, on the margin, protect the old against the new. RIAA president Hilary Rosen was clear about this objective in the context of copyright law: no new ideas should be allowed unless the old system of distribution okays it. And this will be the certain, if unintended, consequence of the patent system as well. Those most likely to be displaced from new innovation will have the power, through these government-backed monopolies, to check or inhibit this innovation.

This power is the product of government-backed monopolies that in the ordinary case raise little trouble. I am not against copyright law (I agree with Hollywood: if you have simply copied the whole of this book, you are a thief); in the ordinary case, the scope of its monopoly ought to be respected.

But when we, as a society, undergo a radical technological shift — as the Internet revolution certainly is — then we should reexamine the scope of the monopoly power we extend, and ask once again whether that power makes any sense. Is it necessary? Is there reason to believe it will do some good?

¹⁷¹ I've not discussed two other critical aspects of intellectual property law — either trade secret law, or trademark law. Both are relevant to the issues of control that I have described, and trademark law in particular has expanded significantly. See, e.g., Alanna C. Rutherford, *Sporty's Farm v. Sportsman's Market: A Case Study In Internet Regulation Gone Awry*, 66 *Brooklyn Law Review* 421, 437 (describing the proliferation of trademarks on the Net and its undermining of the original justification for trademark law); Matthew A. Kaminer, *The Limitations of Trademark Law in Addressing Trademark Keyword Banners*, 16 *Santa Clara Computer & High Technology Law Journal* 35, 61-62 (“We should not contain the growth of the Internet, but instead support it.”) (quote on 62); Glenn A. Gunderson, *Expansion of Trademark Law Yields Trickier Search: Development of Unusual Marks, Dilution Law and the Internet Complicate Clearance Process*, *Nat'l L.J.*, May 31, 1999, at C9 (describing the near-doubling of trademark applications from 1990-1998), cited in Kathleen Donohue, *Trademark Vigilance in the Twenty-First Century: A Pragmatic Approach*, 9 *Fordham Intell. Prop. Media & Entertainment Law Journal* 823, 828 n.18; Claire Ann Koegler, *Here Come the Cybercops 2: Who Should Police Cybermarks?*, 22 *Nova Law Review* 531, 532-533 (explaining how trademark law has greatly expanded in the context of the Internet).

The tradition before the Internet had favored massive increase in the scope of copyright law and a significant increase in the reach of patents. Essentially anything you could attribute to a creative work, you had to respect by getting the permission of this creative work before using it.

In a world like the world I described as the dark ages, this may not be a terrible thing. When all publishers are largish corporations, who really cares if creative energies must be licensed. The licensing process is an ordinary cost of doing business, just like paying sales tax or filing statements with the SEC. It may, on the margin, inhibit a bit, but not a terribly significant amount.

But when the world of creativity shifts outside the largish corporation — when individuals and smaller groups are much more enabled to do this creative activity — then this system of exclusive licenses for every derivative use of a creative work begins to tax the creative process significantly. The opportunity cost, as economists would describe it, of this system of control is higher when, without this system of control, much more creative activity would go on.

Thus, when we have a massive shift in opportunity, we should be reevaluating how necessary these systems of control are. We should be asking whether control is necessary, or at least how far control is required. And if we don't have a good reason for extending these systems of government-backed control, then we shouldn't. If we have no good reason to believe a government-backed monopoly will help, then we have no good reason to establish these government-backed monopolies.

At the end of chapter 7, I argued that the control of media in the dark ages may well be a product of economic constraints. That as long as economics constrains, then this system of concentration and control may be inevitable. The constraints I identified were not to be imagined away. They are real and unavoidable. We can't simply ignore them away.

But the constraints that I have described in this chapter are different. They are not "real" in the same sense. The constraints of IP are constraints we build. We create regimes of IP, and then the regimes we have built yield the control I have identified. No doubt these regimes are in large measure justified. No doubt in the main they promote progress. But often (in copyright for sure, and possibly with patents as well) the regime expands beyond its initial

justification. The restrictions it imposes are artificial, in the sense that they don't promote progress; they simply benefit one person at the expense of another.

This then presses the fundamental question of this book: If the extremes of these constraints are not necessary, if there is no good showing that they do any good, if they limit the range of creativity by virtue of the system of control they erect, why do we have them?

For this is a change. The content layer — the ability to use content and ideas — is closing. It is closing without a clear showing of the benefit this closing will provide and with a fairly clear showing of the harms it will impose. Like the closing of the code layer described in chapter 10, this closing of the content layer is control without any showing of a return. Mindless locking up of resources that spur innovation. Control without reason.

This closing will not be without cost. Making it harder for innovations to enter, making resources more universally controlled — this will drive new competitors off the field, leaving the field once again safe for the old.

And more important, this closing does not occur without a purpose. As I suggested at the end of the last chapter, our greatest fear should be of dinosaurs stopping evolution. More precisely, we should be most concerned when existing interests use the legal system to protect themselves against innovation that might threaten them. The commitment of a society open to innovation must be to let the old die young. The law should resist becoming a tool to defend against the new; when change is on the horizon, it should allow the market to bring about that change.

This is just what is not happening in the field of intellectual property. The state is being pushed to defend expanded intellectual property rights in the name of protecting the way the world was.

As in chapter 10, we are allowing an idea about “property” to overrun the balance that grants access. Because we don't see that balance, or don't see the place for balance, we are quick to follow these arguments that favor control.

Again, this idea in the background — the sanctity of perfect control — blinds us. We in turn render blind the opportunities for innovation. When the only innovation that will be allowed is the innovation that Hollywood permits, we will not see innovation. That lesson, at least, we have already seen.