

1-1-2001

## Not So Different: Tangible, Intangible, Digital, and Analog Works and Their Comparison for Copyright Purposes

I. Trotter Hardy

*William & Mary Law School*

Follow this and additional works at: <https://ecommons.udayton.edu/udlr>



Part of the [Law Commons](#)

---

### Recommended Citation

Hardy, I. Trotter (2001) "Not So Different: Tangible, Intangible, Digital, and Analog Works and Their Comparison for Copyright Purposes," *University of Dayton Law Review*: Vol. 26: No. 2, Article 4. Available at: <https://ecommons.udayton.edu/udlr/vol26/iss2/4>

This Symposium is brought to you for free and open access by the School of Law at eCommons. It has been accepted for inclusion in University of Dayton Law Review by an authorized editor of eCommons. For more information, please contact [mschlange1@udayton.edu](mailto:mschlange1@udayton.edu), [ecommons@udayton.edu](mailto:ecommons@udayton.edu).

---

## Not So Different: Tangible, Intangible, Digital, and Analog Works and Their Comparison for Copyright Purposes

### Cover Page Footnote

My thanks to Professor Robert Kreiss of the University of Dayton School of Law for including me in the conference from which this symposium issue of the *University of Dayton Law Review* is derived, and to the audience and other participants at the conference who offered helpful commentary. I also thank Walter Echwald for critical editing assistance. In fact, I'd like to blame him for anything that is wrong in the article, but I don't suppose I can do that.

# NOT SO DIFFERENT: TANGIBLE, INTANGIBLE, DIGITAL, AND ANALOG WORKS AND THEIR COMPARISON FOR COPYRIGHT PURPOSES

*Prof. I. Trotter Hardy*

## TABLE OF CONTENTS

	PAGE
I. ABSTRACT.....	212
II. INTRODUCTION.....	213
III. TANGIBLE VERSUS INTANGIBLE PROPERTY .....	214
A. <i>Ground Rules</i> .....	215
B. <i>Information as a Public Good</i> .....	222
C. <i>Technological Change</i> .....	227
D. <i>Market Level</i> .....	228
E. <i>Horses, Copyrights, and Levels of Abstraction</i> .....	229
IV. WHAT ABOUT DIGITAL MATERIALS?.....	233
A. <i>Technological Change</i> .....	236
B. <i>Business Models</i> .....	237
C. <i>Penalties and Fines</i> .....	238
V. WHAT ABOUT BALANCING? .....	241
VI. CONCLUSION.....	244

# NOT SO DIFFERENT: TANGIBLE, INTANGIBLE, DIGITAL, AND ANALOG WORKS AND THEIR COMPARISON FOR COPYRIGHT PURPOSES

*Prof. I. Trotter Hardy\**

## I. ABSTRACT

Commentators on intellectual property rights<sup>1</sup> often assert that intangible intellectual property is inherently different from tangible property, and that intangible works in digital formats<sup>2</sup> are inherently different from the same sort of works in non-digital, or "analog," formats.<sup>4</sup> For example, the fact that "information is a public good" is often used to explain why different policies should apply to information and to tangible objects—given that the latter are not public goods.<sup>5</sup> Others wonder whether, because digital works

---

\* Professor, William and Mary School of Law, Williamsburg, Virginia. My thanks to Professor Robert Kreiss of the University of Dayton School of Law for including me in the conference from which this symposium issue of the *University of Dayton Law Review* is derived, and to the audience and other participants at the conference who offered helpful commentary. I also thank Walter Echwald for critical editing assistance. In fact, I'd like to blame him for anything that is wrong in the article, but I don't suppose I can do that.

<sup>1</sup> I use the terms "intellectual property" and "copyright" more or less synonymously. To the extent that the difference matters, I mean "copyright" as I will not discuss patents, trademarks, or trade secrets directly.

<sup>2</sup> "Digital form" or "digital materials" means information that is recorded and processed by a computer, computer software, digital photography, or by word processing and the like.

<sup>3</sup> "Non-digital" or "analog format" means information recorded in a way that does not require a computer for playback—like audio cassette tapes, books, and film photography, for example.

<sup>4</sup> See, e.g., Timothy J. Brennan, *Copyright, Property, and the Right to Deny*, 68 CHI.-KENT L. REV. 675 (1993); Stephen L. Carter, *Does it Matter Whether Intellectual Property is Property?*, 68 CHI.-KENT L. REV. 715 (1993); Michael Madison, *Legal-Ware: Contract and Copyright in the Digital Age*, 67 FORDHAM L. REV. 1025, 1036-37, 1042-43 (1998); Pamela Samuelson, *Information as Property: Do Ruckelshaus and Carpenter Signal a Changing Direction in Intellectual Property Law?*, 38 CATH. U. L. REV. 365 (1989).

<sup>5</sup> See *infra* text accompanying notes 26-32.



are cheap and easy to copy, Congress should abandon any effort to protect them with a legal regime, but should instead leave the issue as one for “self-help” in the form of encryption, password-restricted or subscription access, advertising support, or the like, even though non-digital works might continue to be subject to legal protection from copyright law.<sup>6</sup>

On a more general level, arguments asserting these differences are put forward as a justification for certain conclusions about the appropriate policies for either or both “intangible intellectual property” and “digital intellectual property.” In particular, the assumption of sharp differences often underlies arguments that Congress must balance the interests of copyright producers and copyright consumers to an extent much greater than that called for in regard to tangible property or non-digital property.

These assumptions of differences are wrong. For the purposes of intellectual property rules and regimes, there are no differences between intangible and tangible property; nor are there any differences between digital and non-digital materials. Consequently, although arguments for a congressional balancing of copyright interests can certainly be made, such arguments must be supported on grounds other than the assumption of such differences.

## II. INTRODUCTION

Noted Grateful Dead lyricist John Perry Barlow once observed that digital storage and processing is not just new, but is “profoundly new.”<sup>7</sup> He seemed to be saying that because digital works exhibit a profound difference from non-digital works, these differences either have or should have a substantial impact on the laws surrounding intellectual property protection of digital materials.

He is not alone in this observation, as one hears much the same thing time and time again in informal conversations as well as in scholarly commentary.<sup>8</sup> But perhaps we should not take such assertions at face

---

<sup>6</sup> See, e.g., Esther Dyson, *Intellectual Value*, WIRED, July 1995 at 136-37; Roger Parloff, *Newbies vs. Netwits*, THE AMERICAN LAWYER, Sept. 2000; Robin Peek, *The Digital Rights Management Dilemma: Copyright on the Internet*, INFORMATION TODAY, Nov. 1, 2000, at 50; Bruce Schneier, *The Fallacy of Trusted Client Software*, INFORMATION SECURITY, Aug. 2000.

<sup>7</sup> See John Perry Barlow, *The Economy of Ideas*, WIRED, Mar. 1994, available at <[http://www.wired.com/wired/archive/2.03/economy.ideas\\_pr.html](http://www.wired.com/wired/archive/2.03/economy.ideas_pr.html)>.

<sup>8</sup> See, e.g., Margaret Chon, *Innovation and the Information Environment: New Wine Bursting From Old Bottles: Collaborative Internet Art, Joint Works, and Entrepreneurship*, 75 OR. L. REV. 257 (1996) (noting the difference that networked digital technology makes on concepts of joint authorship); Barbara Cohen, Note, *A Proposed Regime for Copyright Protection on the Internet*, 22 BROOKLYN J. INT'L L. 401, 405 (1996) (stating “[t]he existing copyright regime, however, originally

value, but rather should ask: What is it about digital materials that make them so profoundly new and different?

And, if we are going to look at that question, we might as well step back a little further and look at another widely held assumption about any form of "intellectual property," whether digital or not—namely that "intellectual property" and "tangible property" are inherently different, and hence justify substantially different treatment by our legal system. Since the latter question is broader than the former, it makes sense for me to address the broader one first.

### III. TANGIBLE VERSUS INTANGIBLE PROPERTY

Everyone seems to think that "intellectual property" and "tangible property" are different. The same John Perry Barlow also observed in a widely quoted article in *Wired Magazine* that: "[t]he central economic distinction between information and physical property is that information can be transferred without leaving the possession of the original owner. If I sell you my horse, I can't ride him after that. If I sell you what I know, we both know it."<sup>9</sup>

Well-known copyright scholar, author, and Stanford University Law Professor, Paul Goldstein put it this way:

A loaf of bread, once eaten, is gone. But 'Oh, Pretty Woman,' once sung and heard, is still available for someone else to sing and to hear. Countless fans can listen to the song, indeed copy it, without diminishing its availability to anyone else who wants to sing or listen to or copy it.<sup>10</sup>

Another noted American thinker, Thomas Jefferson, said much the same thing, much earlier: "[h]e who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me."<sup>11</sup>

---

created for works in print, will not be effective"); Fred H. Cate, *Law in Cyberspace*, 39 HOW. L.J. 565, 577 (1996) (referring to the application of copyright to digital materials causing "a dramatic extension of and contravention of the policies underlying the copyright holder's rights in nondigital contexts"); Douglas J. Masson, *Fixation on Fixation: Why Imposing Old Copyright Law on New Technology Will Not Work*, 71 IND. L.J. 1049, 1063 (1996). Cf. Julie E. Cohen, *A Right to Read Anonymously: A Closer Look at "Copyright Management" in Cyberspace*, 28 CONN. L. REV. 981 (1996) (worrying about the opposite problem, that digital technologies such as "copyright management systems" represent a profound change in what publishers can learn about readers).

<sup>9</sup> Barlow, *supra* note 7, at \*7.

<sup>10</sup> PAUL GOLDSTEIN, *COPYRIGHT'S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX* 16 (1994).

<sup>11</sup> *Graham v. John Deere Co.*, 383 U.S. 1, 9 n.2 (1966) (quoting VI WRITINGS OF THOMAS JEFFERSON, at 180-81 (Washington ed. 1903)).



The point of all of these statements, particularly Barlow's, is to show that intellectual property laws restrict—or we might say, “monopolize”—what would otherwise be the “shareable” quality of information.<sup>12</sup> Tangible property, like horses and bread, in contrast, are not by nature “shareable” in this way.

Implicit in Barlow's observation is the notion that intellectual property laws are something of an affront to the ordinary workings of the world: after all, if tangible property is not naturally shareable, then personal property laws simply confirm and are consistent with this natural order and hence are easily tolerated. But if information is naturally shareable, then intellectual property laws get in the way of that natural order, and hence are less readily tolerated.

This thinking is wrong.

#### A. *Ground Rules*

To see why it is wrong, we need some ground rules. First, when I talk about differences or similarities between tangible property and intellectual property, or between digital and non-digital works, I am talking only about differences that are meaningful for our legal system and particularly for copyright law. There may be many differences between a toothbrush and a furnace, or a sailboat and a shoelace, for example, but we do not think that those differences—size, shape, color, function etc.—are relevant for purposes of the law of personal property ownership. All those items are subject to about the same type of property ownership rules—they can all be bought, sold, lent, stolen, rented, leased, bequeathed, etc.

Similarly, when I discuss the differences between “tangible” property and “intellectual” or “intangible” property, I am not saying that one could not possibly find or describe any differences whatsoever between those things—I am only talking about whether there are any differences that matter or should matter to the way that our legal system treats both things for purposes of rights, ownership, licensing, rental, “theft” (infringement), bequests, and the like.

Second—and perhaps less obvious—it will be helpful for me to establish as another ground rule what my starting presumption is about how decisions concerning things like tangible property or intellectual property are made. By this, I refer to whether such decisions are by default

---

<sup>12</sup> In this article, I use the term “information” in the very broad sense of any sort of “content” like music, poetry, art works, stories, computer software, plays, motion pictures, etc.

made either "collectively," or "individually." Put more conventionally, the question is whether we start thinking about a given issue as something that would normally be a matter for public resolution through some form of governmental process, or whether it would be normally a matter for private decision-making.

The reason to clarify this starting presumption is that doing so establishes a burden of proof. If one's starting presumption is that decisions about some issue "X" are to be made collectively, then the burden of demonstrating that they ought to be made individually falls on those who would urge that result, and good justifications need to be offered for why the normal default rules of collective decision-making should not apply. Conversely, if one's starting presumption is that decisions about "X" are to be made privately, then the burden of justification falls on those who would argue the contrary, namely that decisions ought to be made collectively.

At the extremes, these starting presumptions might be equated with the extreme ends of a political spectrum. "Collective" decision-making for all things implies a thoroughly fascist government or perhaps an absolute monarchy; whereas "private" decision making for all things implies a state of no government, or anarchy. Obviously, no extant society falls at the extremes, and all societies exist with a mix of both collectively-made and individually made decisions. Moreover, the question of what is the "best" starting presumption is a fascinating one worthy of much thoughtful analysis.

Happily, however, we need not delve into political philosophy to ascertain what the starting presumption is in the United States, at least for the federal government. By history, tradition, and the structure of our Constitution, the starting presumption about any issue is that decisions concerning that issue are to be made individually. Only to the extent that there is a good reason to do so would decisions be put in the hands of a collective decision-making process such as that of Congress. I do not propose to provide an elaborate justification for this observation, other than to note that the Constitution establishes a federal government of enumerated powers—a starting presumption that decisions are to be made privately (or at the state level through state governments),<sup>13</sup> with the burden

---

<sup>13</sup> I will only look at the federal level of collective decision-making, as copyright law is exclusively a matter of federal law. If Congress establishes a rule about compulsory licensing, for example, it would not be within a state's power to say that compulsorily licensed parties must nevertheless bargain with an owner to reach a voluntary agreement about license fees. Similarly, if Congress establishes a "rule" that authors and publishers are allowed to bargain to whatever royalty rate they can reach agreement on, a state would not be free to establish a compulsory royalty rate. In short, at least for copyright law, the alternatives seem to be that a given decision will either be made by



of justification falling on those who would argue that some particular issue should be a matter for the federal government to decide.

Notwithstanding the initial presumption that individuals can “do what they want,” an enormous number of decisions in our society are indeed made collectively, through the democratic process. So as a general matter, the “burden” of justifying collective decision-making seems frequently quite easy to satisfy. Nonetheless, as all lawyers know, it can matter very much who bears the burden of proof on an issue, so I note here that my reasoning about intangible property starts with the presumption that decisions about intangible property—like other decisions—should be made privately, unless there is some good justification for placing those decisions in public hands. (Those who share this presumption may or may not agree with my reasoning and conclusions from that starting point; but those who do not share even the initial presumption will most assuredly not agree with any of what follows.)

A presumption of individual, not collective, decision-making about intellectual property means, of course, that we should begin our thinking with the premise that there should be no collective decisions about intellectual property whatsoever. That is, that there should be no intellectual property law, no copyright law, at all.

This is not a specious or manifestly bizarre assumption. Indeed, one can read many popular expressions of this viewpoint in the press, especially in the computer trade press, and especially in regard to digital works. Many computer aficionados (“hackers?”) argue that digital works should have no copyright protection.<sup>14</sup> The notion is that if creators are able to protect such works with, say, encryption, then that is what they should do. And if they are unable to reliably restrict access and copying, through the use of encryption or other technologies, or contractual or “business-model” means—well, that’s too bad; they should not turn to the law for help.<sup>15</sup>

---

Congress, or else it will be made privately. There is little, if any, room for the alternative of a collective decision made at the state level.

<sup>14</sup> See Brian Martin, *Against Intellectual Property* (visited Dec. 5, 2000) <[http://danny.oz.au/free-software/advocacy/against\\_IP.html](http://danny.oz.au/free-software/advocacy/against_IP.html)>; JAMES BOYLE, SHAMANS, SOFTWARE AND SPLEENS: LAW AND THE SOCIAL CONSTRUCTION OF THE INFORMATION ECONOMY (1996); Peter Drahos, *Decentring Communication: The Dark Side of Intellectual Property*, in FREEDOM OF COMMUNICATION 249, 274 (Tom Campbell & Wojciech Sadurski eds., 1994); Edwin C. Hettinger, *Justifying Intellectual Property*, 18 PHIL. & PUB. AFF. 31, 39-42 (1989); Laurie Stearns, *Copy Wrong: Plagiarism, Process, Property and the Law*, 80 CAL. L. REV. 513 (1992); David Vaver, *Intellectual Property Today: Of Myths and Paradoxes*, 69 CANADIAN BAR REV. 98-128 (1990).

<sup>15</sup> Sometimes this position is identified as the libertarian position on intellectual property. See Peter S. Menell, *Intellectual Property: General Theories*, in ENCYCLOPEDIA OF LAW AND ECONOMICS II: CIVIL LAW AND ECONOMICS 129 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000) [hereinafter II ENCYC. L. & ECON.]. I am not a member of either the libertarian or the anarchist parties, and so

Whether one agrees with this position or not, it does represent nicely the starting presumption about intellectual property. That starting point, in turn, implies that the burden falls on those who (like me) argue that there should be some government involvement in decisions about intellectual property in the form of intellectual property laws.

One of the principal arguments, at least for a threshold minimum amount of intellectual property protection, is straightforward. It is the familiar argument one that, without some form of corrective mechanism, intellectual creations would exhibit a high degree of "market failure."<sup>16</sup> A "market failure" means that unless something is done to fix things, people will produce either too much or too little of some good or service, where "too much or too little" are defined in relation to what would be the optimal use of society's resources.

Another term for this sort of market failure is to say that some goods or services exhibit "externalities," which can be either "positive" or "negative." A "negative externality" has a bad effect on people who are not involved in a voluntary market transaction with the source of the bad effect. Pollution is a good example. If people who live downwind or downriver from a polluting factory are stuck with pollution whether they like it or not, then the factory creates a "negative externality" for those people.

More importantly for our purposes, "information products," in direct contrast to pollution, seem to exhibit "positive externalities." If people are able to copy and read or use other people's novels, or watch their movies, or listen to their music, without engaging in a market transaction with the author, then those people receive positive benefits from the author's efforts, but the author does not. That is more-or-less what Barlow (and Jefferson) and others are talking about. If someone sells you a match and you use it to light a candle, others can take advantage of that same original match by lighting their candles from yours. Every additional person who gets a light from your candle is indirectly getting a benefit from the original sale of the match to you.<sup>17</sup>

---

speak for neither. It seems to me, however, that the "no laws at all" argument about copyright is much less a libertarian than it is an anarchist position.

<sup>16</sup> Other arguments besides "market failure" can be made for intellectual property laws, of course, including the "natural law" argument that authors already have a natural right to their creations and Congress can only recognize that right. In my experience, though, the market failure argument is the one most commonly put forward today in thoughtful discussions of the fundamental reasons for having a body of intellectual property rights, and it is only that argument that I address here.

<sup>17</sup> I am describing the situation of positive externalities in a way that will, I hope, sound familiar. I refrain from analyzing at this point the harder question of whether the production of matches *per se* has positive externalities, or whether it is only the "act of allowing others to light their candles from yours" that has positive externalities; or whether the best characterization of the situation is something



The fact that those other people are getting a light constitutes a “positive externality” that flows from the original match producer’s sale of a match. The positive benefit is “external” to the match producer because the producer does not derive any benefit from a market transaction with those who light their candle from yours.

Readers who are not familiar with this sort of thinking may be led to conclude that positive externalities are a “good thing” that should be encouraged, not something that needs to be “overcome” or “corrected.” This is an understandable reaction, but it is precisely the opposite of the view expressed in this essay. The difference between the instinctive reaction and the view of this article can easily be explained, however. The instinctive view that “positive externalities” are a good thing is an “*ex post*” view. That is, if one assumes that the activity or product with external benefits *has already been produced*, then one will want that activity or product to be shared. But the economic viewpoint—which is one of the essential justifications for intellectual property law, often referred to as the need for “incentives”—of this article is “*ex ante*.”<sup>18</sup> That is, the problem with goods or services showing positive externalities has nothing to do with sharing *after* production; it has everything to do with the concern either that no one will create or produce such goods in the first

---

yet again. For one thing, candle lighting—if we mean that activity literally—takes place in a small scale, face-to-face situation, where the initial candle owner could, if he or she chose to do so, charge others for the privilege of getting a light. Moreover, since the match producer sells to the match buyer, presumably the match producer could contractually limit the buyer’s ability to offer a light to others from a match-lighted candle, or charge a licensing fee based on the expected number of such lightings. But in the text for now, I only want to illustrate the general proposition that some activities can benefit third parties who are not in a contractual transaction with the original benefactor. I recognize the existence of, but do not delve into, these other intricacies.

<sup>18</sup> Copyright commentators frequently assess intellectual property incentives from the *ex post* perspective, which is fundamentally contrary to the underlying reason for having intellectual property laws in the first place. Professor Mark Lemley, for example, observed that “. . . granting exclusive rights [in intellectual property] raises the cost of new works to the public, and in some cases means that the public won’t get access to the works at all.” Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 124 (1999). To the same effect, about 150 years earlier, was Thomas Macaulay’s comment: “[c]opyright is a monopoly, and produces all the effects which the general voice of mankind attributes to monopoly. The effect of monopoly generally is to make articles scarce, to make them dear. . . .” OFFICE OF TECHNOLOGY ASSESSMENT, INTELLECTUAL PROPERTY RIGHTS IN AN AGE OF ELECTRONICS AND INFORMATION 189 (1986) [hereinafter INTELLECTUAL PROPERTY RIGHTS] (quoting THOMAS MACAULAY, SPEECHES ON COPYRIGHT (1841)). These sorts of comments are manifestly incorrect. If the intellectual property laws are working properly (a big “if” to be sure), they bring about the creation of works that would otherwise not have been created. If intellectual property law protects works that would otherwise not have been created, then the commentators are giving us the wrong comparison. We should be comparing the cost of new works that are created under a regime of exclusive rights, to the complete absence of such works under a regime of no exclusive rights. Because the cost of accessing non-existent works is infinite, an intellectual property regime that brings works into existence sharply *lowers* their cost.



place, or that they will produce them in too little quantity and variety. If potential producers (creators, authors, etc.) know ahead of time that they will not be paid for the value that others receive from those goods and services, they will not be encouraged to create as much as they would otherwise. From that perspective, then, "positive externalities" are in fact a "bad thing" that we would prefer to overcome or eliminate in order to induce a more desirable level of output of those goods and services. (Of course, in today's world, it may be that the benefit of being able to light a candle from a neighbor's candle is so negligible that it is not enough of a positive externality to worry about; we are much more likely to worry about movies, television, software, and books.)

The familiar conclusion to these observations about positive and negative externalities is this: polluters, recognizing that they will not have to pay the cost of polluting those who are downriver, will produce "too much" pollution—that is, more than is optimal for society's well being. And, conversely, authors, recognizing that they will not get paid for the benefits that others receive from reading their novels (or watching their movies, or listening to their songs) will produce too few works of authorship—that is, fewer than society would find to be optimal.

The purpose of anti-pollution laws is therefore to correct the negative externality, to force polluters to bear the cost of their pollution (in the form of fines or having to pay the cost of pollution avoidance)—to internalize what would otherwise be an external cost of their activities. By forcing polluters to internalize the costs of pollution, we can help to bring the amount of pollution back down to a more socially desirable level.

The purpose of intellectual property laws—that is, the justification for not just leaving all intellectual property decisions to private hands—is to allow authors to receive the benefits of their authorship in the form of license fees, royalties, and sales, etc.—to internalize what would otherwise be the external benefits of their creative efforts. By giving authors a way to internalize the benefits of their creativity, we can help to bring the amount of authorship back up to a more socially desirable level.<sup>19</sup>

Observing that activities have externalities and that the creation of property rights can overcome those externalities does not imply that one *must* adopt property rights as the specific corrective mechanism. One can choose not to correct externalities at all, for one thing. Or one can choose to overcome the negative externalities of pollution, say, by not conferring

---

<sup>19</sup> See PAUL GOLDSTEIN, COPYRIGHT § 1.14 (2d ed. 1997) (stating "[c]opyright law presupposes that, absent subsidy, authors and publishers will invest sufficient resources in producing and publishing original works only if they are promised property rights that will enable them to control and profit from their works' dissemination in the marketplace.").

property rights in “clean air,” but rather by setting a government-established limit on pollution output. Similarly, one can choose to overcome the positive externalities of authorship not by creating intellectual property rights but rather by using government grants or direct funding of authorship.

Many arguments can be made over the best ways to overcome particular externalities. I will make only two brief arguments here. First, when a “property rights” approach is feasible, it is usually thought to cost less and to be more economically efficient than a “direct regulation” approach.<sup>20</sup> Second, reliance on property rights is consistent with the starting presumption that individuals should make decisions, rather than the collectivity. This is true because after the establishment of a property regime, which is itself the result of a collective decision, subsequent decisions about that property can be made individually; whereas in a regulatory regime, the on-going operations, of pollution, authorship, or whatever is regulated, continue to require collective decision-making.

Most commentators agree, at this first very general step, that the burden of proving a justification for the government’s involvement at all in intellectual property is satisfied by the general observation that without that involvement, intellectual creations would have significant external benefits and would therefore not be created in enough quantity and variety to satisfy society’s demand.<sup>21</sup> Interestingly enough, at least at this first threshold level, this justification for intellectual property laws is much the same as that for tangible real property laws.<sup>22</sup> I will not go through all the steps here, but many general theories of property postulate that without any sort of property ownership, we would experience the “tragedy of the commons.”<sup>23</sup> Tangible resources, absent any property rights (or other

<sup>20</sup> See generally, David A. Rice, *Public Goods, Private Contract and Public Policy: Federal Preemption of Software License Prohibitions Against Reverse Engineering*, 53 U. PITT. L. REV. 543, 544 (1992) (stating “[a]bsent market imperfections, it is generally assumed that competition will efficiently allocate resources”) citing PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, *ECONOMICS*, 549-52, 562 (13th ed. 1989); Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315 (1993).

<sup>21</sup> See, e.g., Wendy J. Gordon, *Asymmetric Market Failure and Prisoner’s Dilemma in Intellectual Property*, 17 U. DAYTON L. REV. 853, 854-55 (1992); Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989, 993-95 (1997); J.H. Reichman, *From Free Riders to Fair Followers: Global Competition Under the TRIPS Agreement*, 29 N.Y.U. J. INT’L L. & POL. 11, 22-23 (1997) (worrying that market failures in information goods can be over compensated by too-strong legal protection, but not questioning the essential problem of market failure); Rice, *supra* note 20, at 544-45.

<sup>22</sup> See I. Trotter Hardy, *The Ancient Doctrine of Trespass to Web Sites*, 1996 J. ONLINE L. 7, ¶ 36 (Dec. 5, 2000) <<http://www.wm.edu/law/publications/jol/hardy.html>>.

<sup>23</sup> See H. Scott Gordon, *The Economic Theory of a Common Property Resource: The Fishery*, 62 J. POL. ECON. 124 (1954). See also Garrett Hardin, *The Tragedy of the Commons*, 152 SCI. 1243, 1244 (1968). Interestingly, some authority suggests that a real village commons would not suffer such a



limitations)<sup>24</sup> would be used inefficiently; people would under-plant and under-fertilize the land, so that "usable" land, that is, land with crops or vegetables or grains etc., would be under-produced. To put this in terms that are more analogous to the "positive externalities" earlier described, we might say that without the ability to exclude others from obtaining their farm output, farmers would involuntarily confer external benefits on others, which in turn would mean that farmers would have too little incentive to produce crops in the first place, just as authors would have too little incentive to produce works of authorship.

Finally, these same general justifications also support the government's creation of personal property rights, not just real property rights. The concern is once again that craftspeople, manufacturers, and the like would under-produce goods if they were not able to sell those goods to others. Creating property rights in such objects of production is the primary means by which such people are able to have something to sell.

So it turns out that one of the principle justifications for creating a law of real property ownership is largely equivalent to the justification for creating personal property ownership and—more important for our purposes—largely equivalent to the justification for creating a law of intangible property ownership as well. It is the correction of a market failure, and specifically the market failure associated with activities that would otherwise confer positive external benefits and hence be under-produced relative to the socially desirable level.<sup>25</sup>

### *B. Information as a Public Good*

The foregoing views are relatively uncontroversial among copyright commentators, but it is from this point on that opinions begin to differ and confusion arises. One reason for the differing of opinions is that copyright

---

tragedy, in part because the small size of a village implies that individuals must deal with each other face-to-face in many contexts, and thereby have sufficiently lowered transaction costs to be able to "contract" around the otherwise waste of the commons. See Boudewijn Bouckaert, *Original Assignment of Private Property*, in 11 ENCYC. L. & ECON., *supra* note 15, at 1, 8 and sources cited therein.

<sup>24</sup> See *supra* text accompanying note 20.

<sup>25</sup> Not all scholars agree that the same justification underlies all three forms of property protection. See, e.g., Lawrence Lessig, *Intellectual Property and Code*, 11 ST. JOHN'S J. LEGAL COMMENT. 635, 638 (1996) ("...while we protect real property to protect the owner from harm, we protect intellectual property to provide the owner sufficient incentive to produce such property."). The trouble with this reasoning is that it is circular: there is no "harm" that could come to real property "owners" if we had no concept of real property ownership in the first place.

commentators also widely share the view that “information”<sup>26</sup> exhibits a special kind of positive externality: information is often called a “public good.”<sup>27</sup>

A “public good” in economic terms is something (the “something” can either be a “good” in the literal sense of an “object,” or more generally, a good or a service or an activity) that has two characteristics. First, the marginal cost of supplying one more customer with the good is zero—it is costless. Second, there is no practical way, no “market-transaction” way, to stop people from *becoming* non-paying customers even if the provider of the good might prefer otherwise.<sup>28</sup> Because the producer of the good cannot exclude them, there will be a lot of non-paying consumers who are therefore considered “free riders” on the producer of the good.

Examples of one-hundred percent pure “public goods” are rare, but a commonly used one is “national defense.” The thinking goes this way: if someone were initially to supply “national defense” as a good in the marketplace in the form of armies, navies, missiles, tanks, etc., then all people within the national borders would receive the benefit of that defense. If one additional person were born or immigrated into the nation, then that person would also derive a benefit from the system of defense without imposing a single extra penny of extra cost on the supplier. Moreover, if “national defense” were supplied by the marketplace, the supplier would want to charge a price to all those who benefited from it, but the supplier would find it very difficult as a practical matter to get any one “customer” to pay the price. Why would you “buy” your own national defense if others were buying it already, since what others buy confers the full benefit on you?

<sup>26</sup> Again, I use the term “information” here as a synonym for “intellectual property” or “works of authorship” or “intangible property” etc., but without intending to imply that “property” rights are or are not appropriate.

<sup>27</sup> See, e.g., ROBERT P. MERGES, ET AL., *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 12-18 (2d ed. 2000); MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 14 (1971); Wendy J. Gordon & Robert G. Bone, *Copyright*, in 11 *ENCYC. L. & ECON.*, *supra* note 15 at 189, 191 (referring to information as a “quasi-public good”); William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 *J. LEG. STUDIES* 325, 326 (1989) (“A distinguishing characteristic of intellectual property is its ‘public goods’ aspect.”); Jessica Litman, *The Public Domain*, 39 *EMORY L.J.* 965, 971 (1990), *reprinted in* RICHARD H. CHUSED, *A COPYRIGHT ANTHOLOGY: THE TECHNOLOGY FRONTIER* 2, 4 (1998); Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 *YALE L. J.* 283, 339 (1996), *reprinted in* CHUSED, *supra* at 452, 455; Pamela Samuelson, *Fair Use for Computer Programs and Other Copyrightable Works in Digital Form: The Implications of Sony, Galoob, and Sega*, 1 *J. INTELL. PROP. L.* 49 (1993), *reprinted in* CHUSED, *supra* at 346-47.

<sup>28</sup> See Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessors*, 82 *COLUM. L. REV.* 1600, 1610-13 (1982).



Another example of a public good is "the English language" (at least in English-speaking countries).<sup>29</sup> Even if someone or some entity could be identified as the "owner" of the language, it would be impractical for that owner to charge each additional speaker of the language a fee for the privilege of using the language; moreover, the addition of more speakers would not impose any additional costs on existing speakers or on the "owner" of the language. Similarly, "lighthouses" are often cited as examples of public goods. Lighthouse keepers would find it difficult, as a practical manner, to impose a charge on ships at sea that might take advantage of their light. And, as with additional speakers of the English language, the marginal cost of one more ship seeing the lighthouse light and taking advantage of its cautions would be zero.

The essential point behind this categorization of goods or services as "public goods" is this: public goods exhibit a market failure and the market failure is one of "positive external benefits;" but an internalization of those externalities through property rights is unlikely to be successful precisely because of the characteristic that the supplier of public goods cannot find a practical (i.e., cost-effective) way to charge customers for the good. And finally, if there were a way to charge for the good, the right price would be set at the marginal cost of supplying one more customer—by definition, that marginal cost is zero, so that economic efficiency would dictate a zero price, and it is unlikely that anyone would bother to supply a good at the "right" price of "nothing." A frequent conclusion from these observations is that the market failures of public goods can only effectively be overcome by government provision of the goods.<sup>30</sup> Indeed, the government is the provider of many such goods, including national defense and lighthouses, at least historically, and even today the government provides much of our coastal navigation system such as charts, buoys, and the like.

The fact that "information" is a public good in this very same sense is a pervasive theme in writings on copyright. Professor Paul Goldstein seemed to be referring to this phenomenon when he described the difference between eating a loaf of bread and singing a song, for example.<sup>31</sup> I suspect that if asked about it, both Professor Goldstein and Mr. Barlow (I express no opinion about Thomas Jefferson) would be in substantial agreement that the notion of "public goods" goes a long way toward characterizing the fundamental issue of intellectual property protection,

---

<sup>29</sup> I thank Professor Sarah Stafford of the William and Mary Economics Department for bringing the "English language" example to my attention.

<sup>30</sup> See, e.g., JEFFREY L. HARRISON, *LAW AND ECONOMICS IN A NUTSHELL* 49 (1995).

<sup>31</sup> See *supra* text accompanying note 10. See also GOLDSTEIN, *supra* note 19, at § 1.14 (stating "[a]n unlimited number of users can consume a work without depleting it").

and that this notion is what helps to distinguish the issue from that of the protection of tangible property. Tangible property, after all, does *not* seem to be a public good. If we think about toothbrushes, for example, the marginal cost of supplying one more customer with a toothbrush is not zero. It may not be “high,” but it includes some costs for production and distribution that are more than “nothing.” Moreover, ready and practical methods are in place for requiring each additional customer to pay for a toothbrush: customers have to go into a store where they will deal with clerks, cash registers, security procedures to prevent theft, etc.

This view, that information is a public good whereas tangible things are not, informs a great deal of thinking about intellectual property. And it leads to the view that this very difference has important public policy consequences, more or less along these lines: Congress should keep firmly in mind three facts. (1) Information is a public good. (2) Every additional form of intellectual property protection, every increase in the scope or number of intellectual property rights, is a restriction on information sharing. (3) Because the marginal cost of such sharing is zero, the right price for that additional customer should be zero, whereas any additional intellectual property protections imply a non-zero price and therefore serve to prevent the socially desirable outcome. In short, many commentators urge us to remember that because information is a public good, Congress should keep the legal restrictions on information—the intellectual property laws—as narrow as possible.

This view turns reasoning on its head.

To see why, we need to explore in more detail the notion that something either is, or is not, a “public good.” That notion rests on the more fundamental premise that “public goodness” is a binary, all-or-nothing quality. But that this premise makes no sense: marginal costs, after all, can be “large” or “small” or anywhere in between. The “practicality” of excluding individual buyers from the use of a good can vary on a continuum, from “easy-and-almost-costless to exclude” to “really-hard-and-would-cost-a-small-fortune to exclude” or anywhere in between. Marginal costs and practicality are not like “weight” or “mass” that are largely immutable characteristics. Yes it is true that national defense is very much a public good. It benefits the whole nation. Perhaps it makes sense to say that it is a “pure” public good.

A local radio broadcast, however, is something of a public good, but not “as much” of one as “national defense.” Radio broadcasts have substantial public good attributes: the marginal cost of supplying one more listener seems to be zero; radio stations would find it impractical to charge each such additional listener a fee for listening. On the other hand, for local radio broadcasts there is a limit to how many additional customers can



enjoy the benefits of a broadcast: if they live too far away, the signal will not reach them. Or the radio station could reduce the strength of its signals and thereby exclude certain would-be listeners. Consequently, the element of "distance" from the station might serve as a means of "exclusion" of some customers from being beneficiaries. In that way, perhaps groups of neighbors roughly equidistant from a radio station might band together and pay a subscription fee to the station to cause it to increase its signal strength. Of course, there are transaction costs to doing that and there are free rider problems at the neighborhood level. But if we confine ourselves to "local radio broadcasts" in a small town, it seems likely that the transaction costs and free rider problems are far less than those that would apply in the national context of national defense. One finds it hard to imagine that the U.S. Army could extend private subscription pricing to an entire nation, based on the belief that the nation's people could band together and come up with the money on a private, purely voluntary basis. It is far easier to imagine that sort of thing happening with a local radio station and a small town community.<sup>32</sup>

By "far easier to imagine," I really mean that it is more practical for a radio station to overcome its public goods nature than for the provider of national defense to overcome that same characteristic, and as a consequence, I mean that it makes sense therefore to describe a local radio station as "less" of a public good than national defense. Or in short, that "public goodness" is a matter of degree, not something that is all or nothing.

Once we see that public goodness is a matter of degree, we are led to ask the question, what factors affect that matter of degree? What factors in general make one thing more or less of a public good than some other thing?

With radio stations, we identified "distance" as being relevant to that outcome. The greater the distance a listener is from the radio station, the more that listener is excluded from the benefit. Putting that observation into more economic terms would lead us to characterize "distance" as a kind of cost. If potential listeners wanted to spend enough money, they could move closer to the radio station and hear the signal. Or they could buy a big antenna and put it up on the roof to pick up more distant signals, another type of cost. Or they could pay a friend who lived closer to the station to pick up signals and transmit them over a phone line, yet another

---

<sup>32</sup> Cf. William N. Eskridge, Jr., *Politics Without Romance: Implications of Public Choice Theory for Statutory Interpretation*, 74 VA. L. REV. 275 (1988), reprinted in MAXWELL L. STEARNS, *PUBLIC CHOICE AND PUBLIC LAW: READINGS AND COMMENTARY* 671, 678 (1997) (stating: "[t]he free rider problem is most acute for large groups. . . [and] less acute for small groups. . .").



kind of cost. An out-of-pocket “cost to gain access,” in other words, is one thing that seems relevant to the notion of exclusion from access.

### C. *Technological Change*

Other things can affect the ease or difficulty of a supplier’s ability to exclude or charge customers for access besides out-of-pocket costs. Changes in the state of technology can also have that effect. We can think about one of our other commonly cited examples of public goods, lighthouses, in this regard. The idea behind the lighthouse example is that if each individual boat owner were asked to subscribe to a lighthouse’s services, the lighthouse service industry would either go out of business or operate at too low a level of activity—as potential beneficiary-subscribers hold back, waiting to be free riders on other subscribers.<sup>33</sup>

Look at how easily this picture can change with the advent of new technologies. Suppose someone invents a lighthouse that casts an invisible “light” as a warning, a light that took the form of, for example, infrared, ultraviolet, radio-frequency, or some other non-visible beam or signal in place of ordinary light. This new signal would, let us say, be detectable only with a special kind of receiving apparatus. Ships with these special receivers would detect the lighthouse signals and be warned of the dangers of shoals and shallows; ships without the receivers would have no way of detecting the warnings.

The lighthouse industry could then stop worrying about selling subscriptions to lighthouse services—industry members would only need to sell the special receiving apparatus. As tangible, discrete objects, these receivers would not be public goods at all, but on the contrary, fully private goods, from whose benefits free riders could easily be excluded. If ships did not buy a receiver, they would not be able to take advantage of the lighthouse warnings.<sup>34</sup>

Technology can change things in the opposite way as well, of course. Suppose now that someone discovers that with a piece of paper and a paperclip, one can easily modify an ordinary radio receiver so that the

---

<sup>33</sup> Interestingly, there is evidence that lighthouse entrepreneurs can find ways around the public goods dilemma. See Ronald H. Coase, *The Lighthouse in Economics*, in *THE FIRM, THE MARKET, AND THE LAW*, 187 (1988) (leaving lighthouse light as much less of a public good than might first be thought).

<sup>34</sup> Those who know tort law will recognize strong parallels with Learned Hand’s opinion in *The T.J. Hooper* case, where Hand held that a tugboat was negligent for not being equipped with a radio receiver that would pick up weather forecasts. See *T. J. Hooper v. N. Barge Corp.*, 60 F.2d 737 (2d Cir. 1932).

ordinary radio becomes capable of detecting the special lighthouse signals. A special receiving apparatus would therefore no longer be required. If this inexpensive paperclip technology became common, it would constitute a technological change that converted a formerly private good—the expensive-to-receive-special-lighthouse signals—into a much more public one for all the reasons initially cited, namely, the difficulty of exclusion, and the “zero marginal cost” of additional use.

#### *D. Market Level*

The extent to which something is a public good can also vary depending on the market level that one examines. The ease of excluding individual consumers from using a good without paying for it may be different from the ease of excluding another company from producing the good. For example, ignoring intellectual property rules for a moment, we can see that an individual who buys a hardback 400-page book at a bookstore will find that it is expensive to reproduce a good quality copy of that book. To look at the facts from the publisher's side, we could say that it is fairly easy for a book publisher to exclude individual book buyers as potential free riders from book sales. For other publishing companies as opposed to individuals, however, the picture may be quite different. Because they are in the business of reproducing books, publishers can more easily undertake the publishing process.<sup>35</sup> In the absence of any intellectual property laws, original publishers would find it harder to exclude other publishers from free riding than they would find it to be for individual consumers, leaving us with the conclusion that the degree of “public goodness” for books may be different when viewed at the wholesale level than when viewed at the retail level.

In fact, if we confine ourselves to books at the retail level, we are hard pressed to say that “books” are much of a public good at all. The actual amount of free riding at this level of inquiry must surely be near zero. Most people refuse to let even one other person “read over their shoulder,” let alone a large group of people. To the extent that readers find it unpleasant or undesirable for others to read over their shoulder, and to the

---

<sup>35</sup> The actual cost of publishing and distributing would be the same whether it were initiated by a publishing company itself, or by an individual who simply hired the publisher under contract. But the transaction costs for the individual would include learning about publishers and negotiating with them, plus the opportunity costs of the individual's time. By hypothesis, the individual is not already an employee of a publishing company, so that the individual would have to take time from some other occupation in order to deal with the publishing process. I suspect that these latter costs (transaction and opportunity) are significant.



extent that there is not a lot of shoulder space in the “readable distance” from a given book reader, we can see that most free riding readers are quite easy to exclude. All that is necessary is for the original reader to tell others “I don’t want you reading over my shoulder; and besides, you’re in my space.”

True, “books” as an abstraction are much more of a public good than “a particular copy of a particular book.” For example, Alice can read “a book” without taking away from Bob’s ability to read “a book.” But it is not true as a practical matter that Alice and Bob can read the same copy of the same book at the same time.

#### *E. Horses, Copyrights, and Levels of Abstraction*

This last observation, that there is a big difference between looking at “a particular copy of a particular book” and looking at the more general category of “books,” brings up another crucial point. Not only do different “market levels” affect the degree to which something is or is not a public good, but so does the level of abstraction or level of generality on which we focus. “A particular copy of a particular book” is something from which free riders can easily be excluded, or alternatively put, something for which the marginal cost of additional over-the-shoulder readers is more than zero. But “books” as an abstract, general category are much more “public” on the public goods spectrum, both because readers of “books” could find it quite difficult to stop other readers from reading “books,” and also because the marginal cost imposed on one reader of “books” from the fact of others also reading “books” is indeed zero.

That observation brings us back around to this: If Bob gives Alice his copy of a book, Bob can no longer possess or read that particular copy of the book. Of course, he can buy another copy of the book and read that one—but then, so can John Perry Barlow buy another horse and ride that one.<sup>36</sup> In other words, the common view that “information” can be distributed or shared without depriving the owner of that same information is true, but it is *only* true if we look at “information” in the abstract, as a generalization that ignores the actual medium in which the information is recorded.

To be sure, if you buy a book with some facts in it and you learn those facts, you can give away or sell the book and still possess the facts. But

---

<sup>36</sup> See *supra* text accompanying note 9.

"facts" are not copyrightable anyway,<sup>37</sup> so the "shareability" of facts has no implication one way or another for intellectual property laws. More to the point is that if you buy a 400 page novel, read it, and then give it away, you will *not* likely remember all the words and be able to "re-read" the novel in your mind. And of course, this same observation holds true with movies on video cassette, music CDs, and the like. Many works that unquestionably contain or consist of copyrightable "information" like music, movies, or computer software can be enjoyed or used as a practical matter only if one possesses the physical object that records them. Such tangible objects constitute limited, scarce resources in just the same way that horses and loaves of bread do. In thinking about "public goods" and intellectual property, then, we would be remiss not to be clear about the level of abstraction or generality that we are discussing. The more general the level of our examination of informational works, the more like a "public good" such works will seem. On the other hand, the more we zero in on some particular copy of some particular informational work, the less like a public good that work will seem.

The real difference between "a horse" or "a loaf of bread" or "a toothbrush" on the one hand, and "information" or "knowledge" on the other, is not the difference between tangible and intangible things, as is commonly asserted. Rather it is the difference between a "particular object," and a "generalization about objects." "A horse" is an object. "Information" is not an object or comparable to an object, but is rather a generalized label—an abstraction, more of a concept than a thing. We can now see that when Barlow spoke of the difference between knowledge and a horse, he was focusing on a single, particular horse: "If I sell you my horse, I can't ride him after that." And it is true that if the owner of a single, particular horse sells that horse, the (former) owner can no longer ride that horse. But it is not true that if Barlow sells you "a" horse, he cannot thereafter ride "a" horse. It just requires a different horse. In other words, if we raise the subject of our inquiry from a particular instance drawn from a larger category, to that of the larger category itself—from a particular horse to a more generalized category, such as "horses" or "animals" or "means of transportation"—then Barlow's observation about selling horses is no longer true.

In exactly the same way, commentators who talk about the shareability of "information" are keeping the topic of discussion at a high level of generality. But to the extent that commentators compare intellectual

---

<sup>37</sup> See 17 U.S.C. §102 (1994) (giving protection to "original works of authorship," and long interpreted as denying copyright to "facts" as such). See also *Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991).



property or “information” *in general* to tangible property by using *particular instances* of particular kinds of tangible property, then they, like Barlow, are comparing apples to oranges with results that are meaningless.

If we want to compare “apples to apples” in the context of horses and information, then we will need to put our terms on a continuum from “most abstract or general” to “most concrete or particular;” we might first think along these lines:

- “Transportation” is to “information” as
- “Horses” are to “books” and as
- “A particular horse” is to “a particular copy of a particular novel.”

Even that comparison though, needs a final adjustment. Intellectual property protection like that of copyright law, the real subject of our inquiry, does not apply to “a particular copy of a particular novel” or to any other tangible fixation of a type of work. Part of the genius of copyright law is that its subject matter is defined to be an abstraction: copyright protects “a literary work,” not “a book.” It applies to “an audio-visual work,” not to “a reel of film.” Copyright’s “works” are abstractions that can be fixed in any sort of medium. Fixation of some sort is a requirement of copyright’s protection.<sup>38</sup> Once fixed, the “thing” given protection is not the fixation itself but rather the abstract work embodied in the fixation. If we are to draw any conclusions about the subject matter of copyright law as a kind of public good, and distinguish that subject matter from the tangible objects in which such works might be fixed, then we need to amend the continuum shown above, more or less like this:

- “Transportation” is to “information” as
- “Horses” are to “books” (or perhaps “novels”), and as
- “A particular horse” is to “the copyright in a particular novel.”

Listing the comparison in this way shows plainly why the proposition that “information is a public good” is flawed and meaningless: if you give away your horse, you cannot ride him after that. *But it is also hornbook law that if you give away your copyright rights, you cannot exercise them after that.*

Once we make the comparisons in this more accurate fashion, coming closer to apples to apples instead of apples to oranges,<sup>39</sup> we can see that it is

---

<sup>38</sup> See 17 U.S.C. § 102.

<sup>39</sup> Readers may well disagree over what is the precisely right, accurate, or best comparison. Should it be “horses” to “books?” Or should it be “horses” to “novels?” Or “horses” to “literary

no more (or less) accurate to say things like "intellectual property laws confer a monopoly over or restrict the sharing of information,"<sup>40</sup> than it is to say that "personal property ownership laws confer a monopoly over or restrict the sharing of transportation." Personal property ownership simply does not apply to the highly generalized category of "transportation." It applies to particular objects like "horses" that make up that category. In the same way, intellectual property ownership does not apply to the highly generalized category of "information" either. It applies to particular copyrighted works.

Indeed, if we were to say that "information" is a public good, then we would be obliged to say also that "transportation" and "housing" and "food" and "recreation" or many other high-level, abstract categories are also "public goods." One can, after all, make use of "transportation" without depriving others of the ability to use "transportation." And if it makes any sense to say that someone produces or provides "transportation" in the abstract, then it would certainly be difficult for that producer or provider to exclude others from using "transportation" in that same abstract sense.

In sum, if asserted differences between intellectual property and tangible property are offered to justify differences in the application of a property-like legal regime to both things, the actual absence of those differences takes away any such justification. If it turns out, as I have shown here it does, that "horses" and "books," or "horses" and "copyrights," are very much alike, then there is no argument concerning "public goods" that would cause us to treat them differently in our legal system.

In other words, for purposes of applying property ownership laws, "intellectual property" and "tangible property" are no different whatever.

---

copyrights?" Or "four-legged beasts of burden" to "short stories?" My argument does not rest, however, on agreement over the best comparison. It is sufficient for me to show two things: that "a particular horse" compared to the abstract category of "information" is plainly the wrong comparison for the reasons explained in the text, and that "a copyright right," once given away or sold, cannot thereafter be exercised by its former owner, just as is true with ownership over tangible objects.

<sup>40</sup> The number of references in the legal literature to copyright as a "monopoly" is staggering. See, e.g., *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 429 (1984); *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975); *Herbert v. Shanley Co.*, 242 U.S. 591 (1917); *Kalem Co. v. Harper Bros.*, 222 U.S. 55, 63 (1911); *Esquire, Inc. v. Ringer*, 591 F.2d 796, 801 (D.C. Cir. 1978); *Fonotopia Ltd. v. Bradley*, 171 F. 951, 959 (E.D.N.Y. 1909); *INTELLECTUAL PROPERTY RIGHTS*, *supra* note 18, at 189 (quoting *MACAULAY*, *supra* note 18); Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 VA. L. REV. 149, 157 (1992); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111, 170 (1999) (stating: "[i]ntellectual property is a deliberate, government-sponsored departure from the principles of free competition, designed to subsidize creators and therefore to induce more creation."); Peter S. Menell, *Intellectual Property: General Theories*, in II ENCYC. L. & ECON., *supra* note 15 at 129, 131; Wendy J. Gordon & Robert G. Bone, *Copyright*, in II ENCYC. L. & ECON., *supra* note 15 at 189, 194.



#### IV. WHAT ABOUT DIGITAL MATERIALS?

One often hears that the problem with digital materials (things that can be stored and handled by computers) and copyright law is that unlike non-computerized things, such as books, paintings, and audio cassette tapes, digital materials can be perfectly copied with the press of a button. Isn't that what makes the challenge of the Internet era for copyright law so extraordinarily, even unprecedentedly, difficult? In a word, "no."

First of all, there has to be something more to the issues of digital materials than just the bare observation that they are "easy to copy." That phrase describes a whole lot of copying of copyrightable things, including the photocopying of magazine articles, the dubbing of audio tapes, and more. To a great extent, the whole *raison d'être* of copyright law is that all copyrightable materials would otherwise be too "easy to copy" relative to the difficulty of their creation.

The problem of digital materials must be more the fact that such materials are *much* easier to copy than to create. In fact, they can be copied with a perfection thought to be lacking in the world of non-digital materials like books and cassette tapes. Or to put it another way, we care about two things when we think about copyright and the copying of works of authorship: one is the cost of copying (where "cost" includes not only out of pocket monetary costs, but also time, trouble, nuisance, and skill) and the other is the quality of the resulting copy. Perhaps a medieval scribe could make an extraordinarily high quality copy of an illuminated manuscript, one that was equal or even better than the original, but the cost of making such a copy—the laborious and tedious handwork—was exceedingly high. No wonder the medieval age did not bother with copyright laws!<sup>41</sup>

But today's digital era might be considered profoundly new because making copies of digital works exhibits a more favorable cost-to-quality ratio (namely, perfect quality to nearly zero cost) than we see in the non-digital world.

The idea of "perfection" of copies refers to the fact that with most non-digital materials, multiple generations of copies results in steadily lower

---

<sup>41</sup> Western European copyright law is generally thought to be the outgrowth of Caxton's printing press, introduced to England in 1476, an invention that sharply lowered the cost of making copies. See generally, LYMAN RAY PATTERSON, COPYRIGHT IN HISTORICAL PERSPECTIVE 20 (1968). The medieval period saw something akin to copyright in the widely accepted right of the owner of a manuscript to grant or deny others permission to copy; but this right appears to be based almost entirely on possession of the tangible object alone, without any relationship to whether the owner was the "author" or not. See MARK ROSE, AUTHORS AND OWNERS 9 (1993) citing GEORGE HAVEN PUTNAM, BOOKS AND THEIR MAKERS DURING THE MIDDLE AGES 481-483 (1896-97).



quality. A typical non-digital work would be a cassette tape with music recorded on it. When that tape is copied, the quality of the second tape is lower than that of the original tape. Engineers would say that the signal-to-noise ratio goes down: there is more of what we do not want to hear, and less of what we do. If that second tape is itself copied, the quality of the third tape will be even lower. The same thing happens when you photocopy a page of text: the first copy is likely to be quite clear, but a second one will be a little worse, a third one even worse, and so on. Each generation of copies is inferior to the one that preceded it.

But take a digital work like a computer program residing on a computer's hard disk. If it can be copied at all, the copy will not have degraded in the slightest, but will be exactly like the original in every way—a perfect substitute for the original. Second and third and fourth generation copies will also be perfect substitutes. With digital works, in other words, repeated copying does not, at least for all practical purposes, seem to change the signal-to-noise ratio at all.

All of these assertions—that digital copies can be made with perfection, that multiple generations remain perfect, that the copying costs for digital works are essentially zero—are often put forward to show that digital and non-digital works are radically different.<sup>42</sup> As with the asserted differences between tangible and intangible things, all the assertions about digital and non-digital materials in fact miss the mark. For purposes of copyright law, the perfection of copies is not the point. The point is the *cost of making a copy of adequate quality*, that is, the cost of making a substitutable, saleable copy.<sup>43</sup>

As in the example of the photocopies and audio cassette tapes mentioned already, non-digital copies seem to “go downhill” rapidly in quality. But just how rapidly depends not only on the non-digital nature of the medium, but also on the quality and sophistication of the recording equipment used in making both the original and the copies. Very high quality non-digital recording equipment may be able to make several more generations of useful copies of an audio tape than lower quality equipment. If these higher quality copies are adequate for one's purposes and inexpensive, they

---

<sup>42</sup> See, e.g., OFFICE OF TECHNOLOGY ASSESSMENT, FINDING A BALANCE: COMPUTER SOFTWARE, INTELLECTUAL PROPERTY AND THE CHALLENGE OF TECHNOLOGICAL CHANGE 170 (1992) (discussing “major differences between digital information and information in more traditional forms” and citing Pamela Samuelson, *Digital Media and the Changing Face of Intellectual Property Law*, 16 RUTGERS COMPUTER & TECH. L.J. 323-40 (1990)).

<sup>43</sup> Cf. AUGUSTINE BIRRELL, SEVEN LECTURES ON THE LAW AND HISTORY OF COPYRIGHT IN BOOKS 16 (1899) (stating “it is as easy to print from a copy as from the original, makes no real difference in the nature of the right, though it may make it more difficult of enforcement.”).

can be “perfect enough” to be substituted for the original copy even though both original and all copies are in non-digital form.

As usual, when the “quality” of something is at issue, it is often possible to obtain a higher quality result by spending more money. If we wanted a very high quality copy of a vinyl record album, for example, we might hire a group of NASA scientists<sup>44</sup> to do the job. They might use laser beams to trace around the curving sound tracks, along with digital sound filtering and editing to discard scratches, hiss, and other imperfections, and perhaps even end up with a copy that was superior to the original vinyl record. Multiple generations of copies would not, of course, get steadily better, but it might be possible to make quite a lot of generations of copies preserving more than adequate sound—copies that would be good market substitutes for the original. It would not be “impossible” to do so because of the non-digital nature of the original—it would just be expensive to do so.

An even better example to make this point—namely that the quality of copies is related to cost, not to the fact of being digital or non-digital—is material in textual form, such as books. Readers should ask themselves this question: Can a book—a traditional, non-digital, paper-and-ink-book—be perfectly copied, copy after copy after copy? Of course it can. All that is necessary is to:

- Re-type or scan the text,
- Proof-read it,
- Re-format it with word processing,
- Re-print it,
- Cut the sheets to size,
- Re-bind it, and . . .
- The result is a perfect copy.

It is not the technology of non-digital, paper-and-ink books that keeps anyone from making perfect copies of books, or copies of copies of books. It is, rather, the cost.

The implication of this observation—that the difference between digital and non-digital works relates almost entirely to reproduction costs and quality, not to anything inherent in their respective technologies—for tomorrow’s copyright issues is enormous. The implication is simply, but profoundly, this:

---

<sup>44</sup> “NASA scientists” is used here as a formal term for the informal category of archetypically well qualified persons, namely “rocket scientists.”



Assuming that the cost-to-quality ratio for copying non-digital works remains constant,<sup>45</sup> anything that has the effect of lowering (that is, improving) the cost-to-quality ratio for copying digital works will have the effect of increasing the difference between digital and non-digital works.

As a corollary: anything that has the effect of *raising* the cost-to-quality ratio for copying digital works has the effect of *reducing* the differences between such a digital work and the same work in non-digital form.

Finally, it follows that if the cost of duplicating a digital work reaches the *same level* as that for duplicating the same work in non-digital form at the same level of quality, then far from being radically different, for copyright purposes the digital and the non-digital editions will be, and should be treated as, exactly the same.

Now we need to ask: what could change those cost-to-quality ratios for digital works? The general answer is "almost anything," including changes in the applicable legal regime, in technology, in business models, in contractual agreements, in the state of the computing art, or in anything else.

#### A. *Technological Change*

Let us take technology as an example. How could a change in technology change the cost of copying digital works? To ask the question draws our attention to a host of activities being undertaken all around us. Many new technologies, such as encryption, digital watermarks, digital object containers, proprietary viewers, and the like, serve to raise the cost of unauthorized copies. Encryption, for example, makes it harder—hence more "costly"—to make unauthorized copies of digital works. For ordinary users who are not computer scientists or mathematicians or clever hackers, the cost of making an unauthorized copy of an encrypted work will likely be "infinite," making those works in a sense even "more non-digital" than non-digital works. Most people at least *understand* how a book could be copied, even if they do not want to undertake the copying themselves; whereas I doubt that most people have any understanding whatsoever of how an encryption algorithm could be broken. For such

---

<sup>45</sup> If the cost-to-quality ratio for copying non-digital works does not remain constant, then any such change will introduce another variable. We would have to compare two ratios to complete the analysis in the text: a changing cost-to-quality ratio for copying digital works, compared to a changing cost-to-quality ratio for copying non-digital works. This added variable makes the analysis seem more complicated, but does not change the results or my point, so I have made the simplifying assumption in the text.

people, it would be cheaper to copy a paper book than to copy an encrypted digital book.

### B. Business Models

Another thing that can change the cost-to-quality ratio for copying digital works is the use of different business practices or “business models.” To understand how business practices can have such an effect, we should first broaden our notion of what we mean by the cost-to-quality ratio for copying works. If you think about it, we do not just care about that ratio as a single factor. We also care about how that factor differs for making authorized and unauthorized copies, for the cost-to-quality ratio of copying may well not be the same for the one as it is for the other. For example, suppose that the cost to individuals of making an adequate unauthorized copy of some copyrighted work is low relative to the resulting quality of the copy—that is, suppose such copying exhibits a very favorable cost-to-quality ratio. Nevertheless, if that same ratio for making an *authorized* copy is more favorable still, most individuals will be encouraged to pay the cost of making the authorized copy.

We can put this notion in the context of a real-world example. Technology does not prevent anyone from making a copy of a *National Geographic* magazine. Color photocopiers now exist that will provide a reasonably good quality copy at a pretty reasonable price. Magazine issues are not “encrypted” or otherwise scrambled or encoded. In lieu of photocopying, one could also digitally scan each page and print new pages on a color printer, using high-gloss paper. No matter how favorable the cost-to-quality ratio of such copies proves to be, it is almost certain that the cost-to-quality ratio would be more favorable still for just buying another (authorized) copy of the magazine. Why scan and print each page to make a copy if you can buy another original—an authorized copy—for less?

Could this same situation occur in the digital world? Certainly it could—there is no particular requirement with digital works that their authorized copying (or use) always be priced “very high.” The price of anything is a function of many things, including supply and demand, which in turn depend on production costs, perceived value, and so on. Nothing in economics or common sense tells us, however, that the “price” of a work or product is a function of whether that work or product is “digital” or “non-digital.” That observation implies that if the price of making an authorized copy of some digital work is quite low, we might find, as with the *National Geographic* example, that it is cheaper to obtain an authorized copy than to make an unauthorized one.



The development of "micro-payments" is one way to reduce the cost or price of making authorized copies of digital materials. "Micro payments" is just a buzz word for the practice of dividing up a digital work into fairly small "pieces" for which billing is handled separately. For example, if a web site were to charge users to view its pages, it might charge something like half-a-penny per page viewed. Such a charge might feel like a great nuisance to the viewer (although very likely the charges would be accumulated or aggregated before the user actually rendered payment), but on the other hand, trying to hack around the web site's login and password system might be an even bigger nuisance—not worth the trouble just to avoid a half cent charge.

By sharply lowering the cost of authorized uses of copyrighted works, micro payments serve to make the cost of unauthorized uses relatively much larger. Hence, such payment schemes serve to increase the (relative) cost of copyright infringement and therefore to reduce the amount and extent of such infringements. If the relative cost of unauthorized-to-authorized uses for some particular digital work happens to coincide with that same ratio for the work in its non-digital form, then once again, for copyright purposes, there is no longer any difference between the non-digital and digital works whatsoever.

### *C. Penalties and Fines*

Technologies like encryption and payment systems like micro-payments are only two of many things that also affect the cost-to-quality ratio of making unauthorized copies of digital works. Another obvious "cost" for making unauthorized copies is that of paying a fine. If making an unauthorized copy costs, \$10 out-of-pocket, but inevitably will be accompanied by a court-imposed fine<sup>46</sup> of \$100, then the cost of making the copy is not really \$10, it is \$110. To be sure, most court fines (especially, perhaps, for making unauthorized copies in small numbers) are not in any realistic sense "inevitable." No doubt many people make unauthorized copies of computer software without ever being caught, let alone paying a fine, but that just means that the "expected" cost of the fine is not the amount of the fine itself. It is the amount of the fine multiplied by—or "discounted" by—the likelihood of ever having to pay the fine.

Suppose the likelihood of having to pay a given fine for making an unauthorized copy of some digital work is only one percent. That is, of

---

<sup>46</sup> I include "court imposed damage payments for infringement" in the conveniently shorter word "fine."

every one hundred cases of unauthorized copying, only one person will be caught and have to pay the fine. If the fine is \$100, then the real “cost” of the fine to any one person is about (.01) times (\$100), or one dollar. If the likelihood of having to pay the fine is only one in a thousand cases, then the real “cost” is (.001) times (\$100), or ten cents. That means that when we compare the cost-to-quality ratio of making unauthorized copies to making authorized copies, we should include as part of the “cost” of the unauthorized copies the possibility of having to pay a fine.

Could anything in the digital world change the expected cost of such a fine, or make it closer to the same cost for making authorized copies? Certainly it could. For one thing, making authorized copies carries no “cost” in the form of a possible fine at all. Even a small risk of a small fine is *some* cost. As soon as we realize that there is nothing inherent in digital materials that requires fines to be “small” for unauthorized copying, we see that these costs can in fact be anything that Congress or a court imposes. There is no technological reason and there is nothing inherent in the nature of digital materials, for example, that would prevent Congress from imposing a fine of \$100 million for making an unauthorized copy of a digital work. An unauthorized copy of the same type of work in non-digital form could carry a much lower fine. To be sure, there may be good *political* reasons that Congress would not choose to impose such a fine, but political reasons are political reasons, not reasons of technology, and more to the point, they are reasons that have nothing to do with whether a work is digital or non-digital.

For that matter, raising the fine on unauthorized copies is not the only way that the differences between non-digital and digital works could be eliminated. Remember that the real “cost” of a fine is a result of two things: the fine itself, and the chance of having to pay the fine.<sup>47</sup> If Congress chose not to make the size of a fine large enough that the expected cost of infringement for digital works was equal to or slightly higher than the cost of making non-infringing, authorized copies, then perhaps Congress—or technology or business model or anything else—could change the *likelihood* of any unauthorized copier’s ever having to pay the fine.

What could do that? Anything that lowered the cost of detecting the existence of, and enforcing rights against, unauthorized uses of copyrighted works could do that. Many people assume that detection and enforcement of copyrights are nearly impossible with digital works because the Internet

---

<sup>47</sup> See Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968). See also A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS 75-79 (2d ed. 1989). I am ignoring other factors such as the degree of risk aversion.



more or less "automatically" decentralizes<sup>48</sup> every use of every digital work. With millions of computers connected to the Internet in millions of locations, how can a copyright owner ever hope to discover, let alone enforce rights against, potentially millions of dispersed and unauthorized users of copyrighted works?

But here again, this possibility—that unauthorized uses will be too dispersed and decentralized to be detected—is not something that is inherent in the Internet itself; rather it is a function of various technologies. The ability to "detect" something is itself partly a matter of those technologies. If one technology (say, "the Internet") arises that allows the dispersal of activities like copying, there is every reason to assume that other technologies can also arise that will have the effect of making it easier to detect unauthorized uses.

Indeed, one such technology for detection is the Internet itself! Look at it this way. Is it easier to study what goes on in one thousand homes suspected of copyright infringement around the world, or to study what goes on with one thousand web sites suspected of copyright infringement around the world? I would say the latter—they are much easier to examine remotely, and it is less offensive to do so. In fact, the Recording Industry Association of America has already begun routinely scouring the web with automatic "robots" (software programs) that look for files containing unauthorized copies of digitized music.<sup>49</sup> Other companies search regularly for digitized photographic images that contain watermarks belonging to a given owner to see if the images are in fact in their rightful hands.<sup>50</sup> Of

---

<sup>48</sup> For an extended discussion of "decentralization" as it relates to copyright law, see I. TROTTER HARDY, *PROJECT LOOKING FORWARD: SKETCHING THE FUTURE OF COPYRIGHT IN A NETWORKED WORLD* 240, 259-76 (1998).

<sup>49</sup> New means have also developed to police the unauthorized duplication and dissemination of digitized music and video over the Internet. "New encryption technologies have been developed, such as digital watermarking and fingerprinting, which substantiate ownership and prevent unauthorized copying." Robert G. Gibbons & Lisa M. Ferri, *The Legal War Against Cyberspace Privacy*, N.Y. L.J., Aug. 5, 1999, at 3. Monitoring services utilizing specially tailored search technology scour the Web for sites containing music files.

For instance, Broadcast Music Inc.'s [BMI] Music Bot is an automated monitoring system, which searches for unauthorized use of its members' music. The American Society of Composers, Authors and Publishers employs software to locate sites containing the music of its members. Upon finding on-line infringers, rights holders may issue licenses or pursue the infringers with cease-and-desist letters and infringement actions.

*Id.* (footnotes omitted). See also Erich Boehm, *Online Offtrack At Midem*, VARIETY, Feb. 1, 1999–Feb. 7, 1999, at 20.

<sup>50</sup> See, e.g., Digimarc *MarcSpider® Image Tracking Service* (visited Dec. 5, 2000) <<http://www.digimarc.com/imaging/prspider.htm>>. "Digimarc® *MarcSpider* image tracking technology crawls the most highly trafficked public areas of the world wide Web, searching for Digimarc-watermarked images and reporting back details about when and where they are found." *Id.*



course, countervailing strategies and technologies can be (and are) developed to avoid or fool these robots, but that fact only reaffirms this more important fact: the state of technology at a given time determines how easy it is to detect unauthorized copying.

That technology can change over time, and is doing so now. In a world of such rapidly changing technology, it makes no more sense to say that “digital technology” and “the Internet” make detection of infringements hard, than it does to say that “non-digital technology” makes detection of infringements easy.

In sum, for copyright purposes, the significant difference between any two works is the difference in their ratios of cost-to-quality for reproduction, not whether the format of the works is digital or non-digital. A great many constantly changing factors, including technology and the law, can alter those cost-to-quality ratios. When those ratios change for different versions of works, the result may be that the works exhibit greater copyright differences or greater copyright similarities—but in neither case will the differences in ratios have any necessary relationship to whether the works are digital or not. Thus, there are no inherent differences between digital and non-digital works as far as copyright law is concerned. In a time of rapid technological change, copyright law should not be based on any other assumption.

## V. WHAT ABOUT BALANCING?

The topic of this symposium is *Copyright's Balance in an Internet World*. I understand the idea of “balance” to refer to the adjustment of the relative rights of copyright “producers” and copyright “consumers,” groups whose interests are presumptively at odds<sup>51</sup>—else there would be no need to “balance” them. Indeed, the notion of balance is often intertwined with

---

<sup>51</sup> *Accord*, INTELLECTUAL PROPERTY RIGHTS, *supra* note 18, at 187-88 (stating that policymakers must consider “1) what rights in information products and services should be granted to a proprietor and 2) what rights should be retained by the public. . . .”); Lemley, *supra* note 18, at 128 (stating: “[c]opyright law contains a number of compromises between the desires of authors and those of the consuming public.”); Neil Weinstock Netanel, *Copyright and a Democratic Society*, 106 YALE L.J. 283, 285 (1996) (beginning the article by noting that “[c]opyright law strikes a precarious balance”); David Nimmer, *A Riff On Fair Use In The Digital Millennium Copyright Act*, 148 U. PA. L. REV. 673, 681-82 (2000) (noting: “it is essential to appreciate Congress’s concern with balancing the interests of copyright proprietors, on the one hand, against the interests of the community of users, scholars, equipment manufacturers, and on-line service providers, on the other.”); Brad King, *Copyright Act Faces Big Test*, WIRED (Nov. 29, 2000), <<http://www.wired.com/news/technology/0,1282,40378,00.html>> (noting that “[a]t issue is whether the DMCA has properly balanced consumers’ rights with copyright-holders’ interests since its inception two years ago.”).

an assumption that it is Congress, the maker of copyright law, that is the only entity appropriately situated to effect the proper balance between copyright producers and consumers. Much of the "balance" debate currently centers therefore on whether Congress has already appropriately balanced those interests by enacting the Digital Millennium Copyright Act<sup>52</sup> or the Audio Home Recording Act<sup>53</sup> or in other enactments; or whether it has created a lop-sided balance in those and similar enactments;<sup>54</sup> or whether changing technology itself has already shifted the balance to a lop-sided state that Congress should now rectify.

All such questions reflect a starting presumption, that Congress should draw a balance between the rights of producers and the rights of consumers in the context of copyright law. Debate seems to start at that point and go forward. But the presumption itself needs to be questioned more closely. Why is it that "Congress" must draw the appropriate balance? We do not, after all, say that Congress should draw the appropriate balance between the interests of "toothbrush producers" and "toothbrush consumers." We assume rather that producers and consumers will reach a largely market-driven balance without much ado by Congress. If tangible objects like toothbrushes can be handled by creating an initial property-like right in toothbrushes, without further involvement by Congress, why is it that "copyright rights" are different? Why is it not the case that after the initial creation of some sort of property-like rights in works of authorship, Congress can withdraw and leave a balance to be achieved by the ordinary transactions between producers and consumers that happen millions of times each day outside the copyright context in the realm of tangible objects?

One answer might be that intellectual property is different from tangible property. But insofar as this difference is thought to be based on concepts of externalities and public goods, that answer is precisely what this essay refutes. Copyright protection is what *overcomes* those differences and corrects what would otherwise be market failures. Another answer might

---

<sup>52</sup> Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2863 (1998) (codified as amended at 17 U.S.C. chap. 12 (YEAR)).

<sup>53</sup> Audio Home Recording Act of 1992, Pub. L. No. 102-563, 106 Stat. 4237 (1992), (codified as amended at 17 U.S.C. chap. 10 (YEAR)).

<sup>54</sup> See, e.g., *Windy City Wrap-up*, AMERICAN LIBRARIES, Sept. 1, 2000 (covering the American Library Association's annual meeting in July, 2000).

Copyright specialist Carrie Russell of ALA's Office for Information Technology Policy said the DMCA has created a 'muddled and problematic' environment for libraries since it was signed into law two years ago (*AL*, Nov. 1998, p. 16). [Russell called] the law a 'dramatic shift in copyright policy' that tips the balance in favor of the copyright holders. . . .

*Id.*



be that digital and non-digital works are inherently different, and the evolution of digital technology has affected copyright rights to such an extent that additional intervention by Congress is essential. Again, this essay refutes that notion almost entirely, with the exception that Congress has a possible role in increasing the fines on digital materials—but even here, only if one thinks that infringement of such materials will always be harder to detect than infringement of non-digital materials, an assumption that I do not myself share.

Another answer might take this form: Congress makes copyright law as a matter of positive law, not natural rights. If authors have no natural rights, and Congress makes copyright law, then Congress can establish or terminate, expand or contract, those rights in whatever ways and for whatever reasons it sees fit.

This latter argument is that Congress is empowered to make whatever decisions it wants to make, any time it wants to make them, about the scope and extent of copyright rights. If my initial presumption about the role of collective versus individual decision-making is valid, though, this latter view gets it backwards. As I began this essay, I return now to the observation that by United States tradition as well as the structure of the Federal Constitution, decisions are presumptively made by individuals unless a good argument can be made that a decision is better made collectively. The burden of proving as a threshold matter that some form of collectively-sanctioned intellectual property protection is a good idea seems to be met by the threshold creation of intellectual property rights to help overcome the basic quality of informational products as having “positive externalities.” Beyond that, further decisions about the scope and extent of rights can be made by individuals in the form of contracts reached through individual market transactions. There is no requirement or need for Congress to be involved in any further balancing (and there are reasons beyond those of “tradition” for it not to be).<sup>55</sup>

---

<sup>55</sup> An on-going process of congressional balancing is itself likely to be harmful, and so would require especially strong justifications. A call for continued “balancing” in the copyright arena means a call for Congress to continually re-evaluate the copyright rights of various parties. This in turn entails considerable costs in the collective decision-making process, costs that property rights are designed to prevent. See I. Trotter Hardy, *Property (and Copyright) in Cyberspace*, 1996 U. CHI. LEGAL. F. 217, 255 (1996). Cass Sunstein has put the matter more strongly, at least in regard to tangible property rights. (I cannot tell if he means to include intellectual property rights in his discussion, or if not, whether he would agree that his same observations would apply to intellectual property rights—though obviously I think that they do.)

[O]ne of the best ways to destroy a democratic system is to ensure that the distribution of wealth and resources is unstable and constantly vulnerable to reevaluation by the political process. A high degree of stability is necessary ... to prevent the political process from breaking down by attempting to resolve enormous, emotionally laden issues about who is

Hence, the burden falls on its proponents to justify further Congressional intervention in the form of balancing interests, and more particularly, to justify the need for Congress to provide any balancing beyond the initial provision of property-like rights whatsoever. I readily acknowledge that arguments in favor of such an intervention can and will be made, and I make no attempt here to address, let alone confirm or refute, such arguments. I note only that the arguments cannot rest on the belief that intangible property is inherently different from tangible property, or on the belief that digital materials are inherently different from non-digital materials.

## VI. CONCLUSION

Is "intellectual property" different from "tangible property?" No. The usual arguments about these differences compare apples to oranges by comparing general abstract categories such as "information" or "knowledge" to far more particular instances of larger categories such as "horses," hence these comparisons reach faulty conclusions.

Are "digital materials" different from other forms of intellectual authorship? No. The usual arguments ignore the role of cost and quality of copying, and the role of both changing technology and of copyright law itself in affecting that cost-to-quality ratio. If technology or copyright law itself can raise the cost of making a digital reproduction of some work to the same level as that for making a non-digital reproduction of comparable quality, then there is no difference for copyright purposes between the digital and non-digital formats.

Must Congress balance the interests of information producers and information consumers? No. All that is necessary, to overcome the widely recognized problem of positive externalities, is for Congress to create an unadorned right of ownership in authors. A balance will thereafter necessarily be drawn through individual market transactions. For Congress

---

entitled to what. . . . A system in which property rights are open to continuous readjustment will produce serious harm.

CASS R. SUNSTEIN, *FREE MARKETS AND SOCIAL JUSTICE* 210 (1997). An on-going Congressional balancing of copyright interests is a system of continuous readjustment of property rights. Anyone who has watched Congress deal with changes in the copyright law should agree that the process is one of "resolv[ing] enormous, emotionally laden issues about who is entitled to what." *Id.* Additionally, on-going re-adjustment of copyright rights usually implies a more complex copyright statute. This complexity can also raise costs inasmuch as "more detailed laws tend to be more costly for the government to promulgate, for parties to interpret, and for enforcers to apply." Louis Kaplow, *General Characteristics of Rules*, in *ENCYCLOPEDIA OF LAW AND ECONOMICS V: THE ECONOMICS OF CRIME AND LITIGATION* 502, 504 (Boudewijn Bouckaert & Gerrit De Geest eds., 2000).



to become more deeply involved in the allocation of rights to copyrighted materials—to be more involved in a balancing of interests—calls for some sort of justification. Many such justifications can doubtless be offered; this essay demonstrates only that the notion of “public goods,” or the notion that there are inherent differences between tangible and intangible property, or the notion that there are inherent differences between digital and non-digital works, do not provide that justification.