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THE BRENDAN BROWN LECTURE*

COPYRIGHT IN THE NEW INFORMATION AGE

*Paul Goldstein***

Copyright law is the child of technology. To be sure, copyright in the United States traces to the first English copyright act and, arguably, to the preceding two centuries of Crown licenses, patents and privileges. But, in the most important sense, the story of copyright begins with the invention of movable type and William Caxton's press at Westminster. For the first time, humankind could disseminate its store of knowledge and creativity widely and at ever decreasing costs. Copyright's place in this revolution has been to mediate between those who produce and those who consume this information.

If copyright is indeed technology's child, is there anything new about the law's encounters with such modern versions of the printing press as photocopying machines, audio- and videocassette recorders and computer downloading of databases? I believe there is. Copyright law finds itself today in the midst of an information revolution that differs dramatically from the revolution that Gutenberg wrought, a revolution whose ultimate dimensions we can now perceive only dimly, if at all.

Consider just one facet of this revolution. Vast information facilities are beginning to evolve, systems that will soon dwarf the legal and financial databases that we marvel at today. Sooner than you expect, systems may evolve that can store a digital version of every motion picture and sound recording ever created, enabling individuals around the world to summon up these works on command, through satellite or some yet unforeseen communications vehicle. Consider, too, that these digital databases—this eventual

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** Stella W. and Ira S. Lillick Professor of Law, Stanford University. The author thanks the Columbus School of Law, at The Catholic University of America, for its invitation to address the faculty and students.

celestial jukebox¹—will be increasingly rich and malleable, enabling users to craft their own information and artistic environments out of the system's raw but highly accessible materials. In some quarters, the line between author and user may entirely disappear.

What problems and prospects do these technological developments pose for copyright in the coming age? Copyright itself is a simple, indeed elegant, concept. Copyright is a property right. Like real property, copyright encourages private investment in productive activity by giving its owner the right to exclude, and thus extract revenues from, anyone who wishes to make a use of her work that falls within the law's prescribed boundaries. But copyright differs from real property in at least one consequential respect. Where physical limits bound the use of real property, copyright subject matter can be consumed—in the sense that a book can be read or a motion picture viewed—by an indeterminate number of users without any one user diminishing the enjoyment of the other. Copyright subject matter is in this sense a classic public good.

What guideposts should copyright policymakers seek out in navigating this new information environment? Some of the principles that policymakers have followed in the past will offer sure guides for the future. But statutory and decisional precedent may in other respects lead lawmakers down blind, possibly dangerous, avenues.

My remarks today divide into three parts, each concerned with guideposts. First, will traditional legal approaches to the rights conferred by copyright thwart desired investment in creative activity? In other words, where should Congress and the courts place copyright law's "No Trespassing" sign? Second, will the application of traditional copyright approaches to new forms of subject matter draw investment down accustomed but undesired paths? How should policymakers decide which subject matter to bring within copyright and which subject matter to lodge in other intellectual property systems or to leave entirely unprotected? Finally, do the new information technologies themselves portend a new legal environment for producer and consumer choice? How can policymakers ensure that copyright law does not get in the way of new market imperatives?

In framing my inquiry this way I am rejecting a common, but mistaken, approach to these issues. It is customary in public policy discussions to ask whether copyright will survive the new information technologies. I think it makes more sense to ask whether the new information technologies will survive copyright. Copyright is a means, not an end. At least within the An-

1. This wonderful metaphor is, alas, not mine. I tip my hat to the unknown poet who conceived it.

glo-American copyright tradition, there is only one criterion for copyright policy: Does the law promote consumer welfare by making the broadest possible array of creative products available to consumers at the lowest possible price? The pertinent question is not whether home taping or copyright protection for computer programs will wrench age-old copyright principles out of all recognition. Rather, the important question is whether copyright will remain able to foster the new sources of creativity desired by consumers.

I. RIGHTS

Picture for a moment an idealized legal world. In this never-never land, copyright owners would control and be able to extract revenues from every use of their works that has value to the user, at the value that the consumer places on the use. Publishers would collect not only from sales of copies of their books, but also every time pages from the book are photocopied and, indeed, every time the book is read. Motion picture producers would not only collect revenues each time a patron entered a theater, but each time a viewer turned on a television set, made a copy of the film off the air, or dubbed it from a videocassette. Sound recording producers would collect not only from the sale of phonorecords, but also when the sound recording is performed or copied off the air.

Why do I call this an idealized world? The answer is that, at least in a market economy, the price mechanism—charging consumers according to the value of their use—is the best means for giving producers the incentive to produce the right amount of the right kinds of work. I should add that not everyone agrees that the view I have depicted represents an ideal. Some would argue that to entitle the copyright owner to extract revenues from all uses of his work would give him returns that far exceed his needed investment incentives and that, since information is a public good, rights should be extended no farther than incentives require. I will not take the time here to detail the flaws in this position.² I will just note that the position overlooks the high degree of substitutability among most copyrighted products and ignores, too, the effects of risk and competition in the copyright industries.

In any event, we live in a less than ideal world. One reason is the problem of transaction costs—the fact that the cost of policing and negotiating licenses for such dispersed uses as private photocopying will often exceed the value of the use. Consider, for example, a law teacher who decides a day before class to distribute copies of an excerpt from a law review article, one per student. The teacher or her school would not be unhappy to pay fifty

2. For analysis of this position, see Paul Goldstein, *Copyright*, 38 J. COPYRIGHT SOC'Y 109, 112-14 (1991).

dollars for the use, and the publisher would be happy to have it. But the effort of locating and negotiating with author and publisher will in all likelihood consume more than fifty dollars. Consequently, the teacher will not make the effort. Recognizing the impracticability of payment in such circumstances, the 1976 Copyright Act sometimes settles for half a loaf, allowing use without payment. Because the teacher's students will be worse off without copies, while the copyright owner will be no better off, copyright law's fair use defense will probably allow the teacher to make the copies without liability.³

The current policy dilemma posed by the problem of transaction costs is that the new information technologies are consistently moving economically valuable uses of copyrighted works away from an easily policed and licensed center—organized publishing, for example—to the margins of private copying and performance, where enforcement costs will often disable negotiated transactions, thus depleting the revenues and incentives flowing to producers. As these uncompensated uses displace the compensated sales of books and periodicals, publisher revenues will decline. So, too, will motion picture revenues, with the theater market reduced by uncompensated home videotaping and rentals; sound recordings, their markets reduced by home audiotaping and performances; and computer programs, their market reduced by home and office copying.

What steps has Congress taken to ensure that copyright law effectively keeps pace with this decentralization of copyright uses? Thomas Olson, formerly counsel to the Senate Subcommittee on Patents, Copyrights and Trademarks and now a Washington lawyer, has cautioned us not to look to Congress for copyright relief, at least not where the imposition of liability would disrupt entrenched industry interests. "Congress' difficulty in dealing with controversial copyright issues flows from its deeply felt reluctance to impose concentrated losses on any 'respectable' group, even if 'good policy' dictates the result."⁴

One example will suffice. In 1983, a bill that would have given motion picture producers the right to earn revenues on rentals of their videocassettes went down to defeat because of grass roots opposition from the well-estab-

3. See 2 PAUL GOLDSTEIN, COPYRIGHT § 10.2.2 (1989).

4. Thomas Olson, *The Iron Law of Consensus: Congressional Responses to Proposed Copyright Reforms Since the 1909 Act*, 36 J. COPYRIGHT SOC'Y 109, 116 (1989) (footnote omitted). If what Olson meant is that Congress will not step on industry toes by extending *absolute* rights, he is largely correct. But I think Olson understates Congress' willingness to achieve exigent compromises, as it has through carving out narrow exemptions and compulsory licenses—for example, in the field of cable television. Indeed, the 1976 Copyright Act is a complex skein of such compromises.

lished video rental industry and its customers.⁵ By contrast, two proposals—one barring the unauthorized rental of phonorecords,⁶ the other barring the unauthorized rental of computer programs⁷—passed with little difficulty because in each case Congress could act before a rental industry—and entrenched interests—had taken root.

Have the courts been any more adventurous than Congress in extending rights against new technological uses of copyrighted works? The judiciary is, Olson notes, the relatively less fettered branch. But, traditions of judicial restraint also make it the less aggressive branch. When the Copyright Act is silent on whether it covers a particular use, the principle of judicial restraint should cut neither one way nor the other. Nonetheless, the United States Supreme Court has fairly consistently over the course of this century skewed judicial restraint against the imposition of liability.

From the Supreme Court's 1908 decision that a player piano roll is not a copy of the musical composition it embodies⁸ through its decisions that cable retransmission of television broadcasts were not actionable performances under the 1909 Copyright Act,⁹ the Court has shown a clear disposition to construe the statute against copyright liability. The Court's four-four split that let stand a Court of Claims decision that certain library photocopying did not infringe copyright under the 1909 Act¹⁰ and its five-four decision that Congress intended to excuse home videotaping off the air for certain purposes¹¹ point in the same direction. At least in the latter two cases, many observers—I count myself among them—believe that the Copyright Act imposed liability.

II. SUBJECT MATTER

From the first copyright act, which protected only maps, charts and books, to the 1980 amendments bringing computer programs within the scope of copyright, the history of legislation on copyright subject matter has been almost uniformly in the direction of expansion. If any single principle can be distilled from two hundred years of legislative history, it is this: So

5. S. 33, Consumer Video Sales/Rental Amendment of 1983, 98th Cong., 1st Sess. (1983).

6. Record Rental Amendment of 1984, Pub. L. No. 98-450, 98 Stat. 1727 (1984) (codified as amended at 17 U.S.C. §§ 109, 115(c)).

7. Computer Software Rental Amendments Act of 1990, Pub. L. No. 101-650, §§ 801-805, 104 Stat. 5134, 8516-19 (codified at 17 U.S.C.A. § 109 (West 1977 & Supp. 1991)).

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

9. *Teleprompter Corp. v. Columbia Broadcasting Sys., Inc.*, 415 U.S. 394 (1974); *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390 (1968).

10. *Williams & Wilkins Co. v. United States*, 420 U.S. 376 (1975).

11. *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

long as a new form of subject matter bears some surface similarity to subject matter that is already under copyright, Congress will bring the subject matter within the Act. Computer programs and databases are two contemporary examples. The strings of ones and zeroes that make up a computer program's object code may appear to resemble the code books that copyright law has long protected. The facts assembled in sources ranging from telephone book white pages to Lexis and Westlaw databases may appear to approximate the facts embodied in the maps and gazetteers that have commanded protection since the first act.

Yet, time and experience may prove these extensions of copyright subject matter to be a bad bargain. Computer programs are an example. At least since *Baker v. Selden*,¹² everyone agrees that copyright's province is not to protect functionality—historically the domain of patent law. But the line between a work's copyrightable expression and its uncopyrightable, functional ideas will not always be easy to draw. Because a computer program may combine nonfunctional expression with functional ideas, copyright may give the program all of the law's tactical, procedural and remedial advantages, with functionality enjoying *de facto* protection that it might not receive if it were tested under the Patent Act's more rigorous standards. The result may disserve consumer welfare by blocking competition in functional products and by channeling investment in the wrong directions.

Databases offer another example of a copyright bargain that may have gone sour. As databases grow in size and utility, copyright may lead both to underinvestment and over-rewards. Copyright law's originality requirement, which the Supreme Court told us this term in *Feist Publications, Inc. v. Rural Telephone Service Co.*¹³ imports some degree of creativity, means that there will be scant protection—or copyright incentive—for the drudgework of fact-gathering. Trade secret law may provide a small corner for protection, as may state misappropriation doctrine. But neither body of state law offers an orderly or comprehensive system of protection for these efforts; as a result, important facts may go ungathered. At the same time, copyright—particularly its lengthy term, which is typically seventy-five years for databases—may give the first assembler of a copyrighted database a degree of market power out of proportion to its investment incentives.

From a policy perspective, the knee-jerk extension of copyright protection to products like computer programs and databases that bear only surface similarities to more traditionally protected works presents a slightly different timing problem than Congress and the courts face when they confront new

12. 101 U.S. 99 (1880).

13. 111 S. Ct. 1282 (1991).

technological uses of copyrighted works. There we saw Congress disinclined to extend protection against new technological uses if established interests and expectations made extension politically infeasible. In the case of subject matter that turns out to have been brought improvidently within the copyright realm, we find that those who have for many years enjoyed the benefits of copyright protection can effectively block the subject matter's removal from copyright. The two situations have one fact in common: the unlikelihood of congressional response. Further, where Congress has extended copyright protection to a new form of subject matter, courts understandably have been loath to reject it. This is one reason why the Supreme Court's decision in *Feist*, denying copyright protection to telephone directory white pages, so startled many observers.

III. TECHNOLOGY AND LAW

As the economic locus of copyright uses migrates from easily policed centers of activity, such as motion picture theaters and printing establishments, to decentralized activities at the margins of the marketplace, such as photocopying, home taping and computer downloading, transaction costs may make it increasingly difficult for producers to collect the revenues that they need to produce these works.

But there is in this context an even greater threat than the problem of transaction costs: Congress' perception that such transaction costs as may exist are irreducible and consequently require an exemption from liability or, at the least, a compulsory license. In fact, institutional and technological innovation will often be capable of reducing transaction costs to acceptable levels. The American Society of Composers, Authors and Publishers, founded in 1914 by Victor Herbert and his colleagues to collect royalties for the performance of their musical compositions in dance halls across the country, and later on radio and television, is a seminal example of institutional innovation. The Copyright Clearance Center, founded in 1978 to license photocopying of members' works, is a more recent example.

Paradoxically, many of the same dissemination technologies that have enabled decentralized uses of copyrighted works promise in the future to solve the problem of transaction costs on even better terms than those offered by the CCC and, possibly, ASCAP. Consider the celestial jukebox that I described earlier. This digitally-based system will not only give consumers access to a vast store of literature, art, music, motion pictures and sound recordings on command, at any hour of the day; it will also have the capacity to debit the user for each use she makes of a copyrighted work—at a price agreed on between the user and the system—and will credit the ac-

count of the distributor or producer, all at little more than the cost of electricity. Indeed, transaction costs in this sector of the information marketplace may virtually disappear.

What new forms of subject matter are likely to come knocking at copyright's door? On the assumption that Congress, state legislatures, or the courts will fashion some alternative to copyright as a vehicle for attracting investment to database assembly, databases will become—to some extent they already are—the sources of the creative stuff out of which authors and artists, and sometimes the user himself, will devise new creative products. With data gathering ejected from copyright, I believe that copyright policy will be forced to focus on the question of protection for the new technologies, such as artificial intelligence, that will be employed to order these data.

Artificial intelligence—or whatever its successor technology is called—will present a fundamental challenge to copyright as a vehicle for organizing private investment in creative works. Artificial intelligence may one day be harnessed to digital databases to create entertainment and information products that approximate, and perhaps exceed, the value of products that now require intense human labor and capital investment. Today's computer-generated weather maps may soon be joined by far richer, more elaborate products. Because the economics of this sort of production—with investment focused on the production of the generative program, rather than the resulting product—may well differ from the economics of more traditional, labor-intensive forms of creativity, consumer welfare may in some of these instances be best served by entirely new legal regimes.

IV. CONCLUSION

Traditional copyright subject matter, and traditional means for its distribution, will not disappear overnight. Books and bookshops, motion pictures and movie theaters will be with us for a long time to come. But there is little doubt that emerging information technologies, driven by perceptions of consumer demand, will tug and pull the information marketplace into new configurations. What principles should Congress and the courts follow in shaping copyright law to accommodate and foster these new directions? I appreciate that it may appear quixotic to offer principled guidelines, given the real world of practical politics that members of Congress encounter when they confront entrenched interests and given the judiciary's limited role in making substantive copyright policy. Yet, I can see no more productive alternative.

Timeliness poses the principal challenge to Congress in accommodating a centuries-old copyright law to the emerging realities of the information mar-

ketplace. Delay in extending rights against economically valuable uses of copyrighted works, and the consequently entrenched habits of free use may as a practical matter foreclose principled action. Haste in bringing new forms of subject matter within the copyright fold may foreclose the removal of this similarly entrenched subject matter from copyright when more complete information reveals the desirability of some alternative form of protection or of no protection at all.

Empiricism—the weighing of the costs and benefits of expanding or contracting copyright liability and subject matter—may be desirable in the abstract, but it grinds slow and will offer Congress little timely guidance in dealing with new rights and subject matter. Principle offers the only practical guide. I have sought to describe two relevant principles in my remarks today. First, Congress should extend rights against all economically valuable uses of copyrighted works, except where demonstrably unalterable transaction costs will block negotiated licenses. Second, Congress should withhold copyright protection from new forms of subject matter where, as in the case of artificial intelligence and certain elements of databases, the economics of investment and competition depart from those that have traditionally justified copyright protection.

