University of Chicago Law School

Chicago Unbound

Coase-Sandor Working Paper Series in Law and Economics Coase-Sandor Institute for Law and Economics

2002

From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright

Randal C. Picker
dangelolawlib+randalpicker@gmail.com

Follow this and additional works at: https://chicagounbound.uchicago.edu/law_and_economics

Part of the **Law Commons**

Recommended Citation

Randal C. Picker, "From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright" (John M. Olin Program in Law and Economics Working Paper No. 159, 2002).

This Working Paper is brought to you for free and open access by the Coase-Sandor Institute for Law and Economics at Chicago Unbound. It has been accepted for inclusion in Coase-Sandor Working Paper Series in Law and Economics by an authorized administrator of Chicago Unbound. For more information, please contact unbound@law.uchicago.edu.

CHICAGO

JOHN M. OLIN LAW & ECONOMICS WORKING PAPER NO. 159
(2D SERIES)

From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright

Randal C. Picker

THE LAW SCHOOL
THE UNIVERSITY OF CHICAGO

This paper can be downloaded without charge at The Chicago Working Paper Series Index:

<http://www.law.uchicago.edu/Lawecon/index.html>

The Social Science Research Network Electronic Paper Collection:

http://ssrn.com/abstract_id=329340

From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright

*Randal C. Picker**

Encryption propertizes copyright. Prior to the rise of encryption, intellectual property wasn't really property. Instead, these rights consisted of rights to sue to block use or seek damages for after-the-fact use. Encryption makes possible before-the-fact limits on use of the sort that we associate with physical property. Copyrighted works are becoming real property in a way that will never happen for trademarks or patents.

This essay traces the role of consent and refusal for copyrighted works in the context of mass media entertainment. Early phonograph and movie projector manufacturers sought to limit the use of the equipment to specified music or films, almost certainly in an effort at price discrimination. With the rise of radio, we see similar use restrictions imposed by the record companies, but these restrictions should be seen first as a form of raising rival's costs. The fight over home-taping use of the VCR should be seen in consent terms as well, where entry was clearly facilitated by the absence of any requirement of advance consent from copyright holders.

Now with the current dispute over a possible broadcast flag for digital TV, we may complete the path started by Edison and his contemporaries. In considering the extent to which we should embrace full propertization of copyrighted works through encryption, we should expect transaction forms to vary with transaction costs and technological possibilities and should not somehow privilege a narrow set of institutional arrangements that arose under different constraints.

Rules of consent to and refusal of use have loomed large for copyrighted works over the last century. In some cases of product innovation, the rules of use do concern copyrighted works, but the fact that the control is exercised over a copyrighted work is merely a happenstance, a fluke of the nature of the product innovation. So patent holders over phonographs try to limit which music cylinders can be played¹ or film projector manufacturers do the same with movies,² just as A.B. Dick tried to limit the ink that could be used with its mimeograph machines.³ These are typically cases of price discrimination—an effort to charge different users different prices depending on intensity of use—and the control over the used good is just a crude approach to measuring how much the consumer values the relevant technology. This type of price discrimination can be socially helpful or harmful.

In other cases, the limits are more directly strategic, as when record companies sought to bar play of records on radio. How radio influences purchasing decisions for recorded media—LPs

* Copyright © 2002, Randal C. Picker. All Rights Reserved. Paul and Theo Leffmann Professor of Commercial Law, The University of Chicago Law School. Senior Fellow, The Computation Institute of the University of Chicago and Argonne National Laboratory. I thank the John M. Olin Program in Law and Economics at The University of Chicago Law School for its generous research support, and through the Olin Program, Merck & Co., Inc.; Microsoft Corp.; and Pfizer, Inc.

¹ See *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 301, 312-13 (1909); *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 325 (1909).

² *Motion Picture Patents Co. v. Universal Film Manufacturing Co.*, 243 U.S. 502 (1917).

³ *Henry v. A.B. Dick Co.*, 224 U.S. 1 (1912).

and 45s, later 8-tracks and cassettes and now CDs—was and is hotly disputed, but the record companies have routinely sought to limit how radio stations could use “records.” These limits can be most naturally understood as a form of raising rival’s costs, as a way of making it more expensive for radio to compete with the record companies. These disputes continue today with the emergence of webcasting: “radio” stations that play music over the Internet rather than over-the-air.⁴

In yet other cases, consent to use of copyrighted works need not be obtained upfront or perhaps even ever, and this shapes product innovation importantly. VCR manufacturers didn’t need prior consent from copyright holders to enable home time-shifting. This gave the VCR a substantial advantage over the competing video innovation, the videodisc or the laser disc, which relied on prerecorded content. We know what happened: the VCR producers didn’t ask for consent, were sued, and ultimately prevailed in *Sony* on a 5-4 vote in the U.S. Supreme Court on the ground that home time-shifting was a fair use, a form of mandatory license under copyright law—a mandatory consent to use.⁵ We also see a related path in cable television, but there, a legislative deal replaced fair use rights with statutory licenses and royalties.⁶

We now have reached a new point. The shift from analog to digital is in full-swing and again questions of consent and refusal are at the forefront. Napster inaugurated digital distribution of copyrighted music, most of it ripped from CDs. As the CDs in the hands of consumers were not encrypted, Napster was able to enter without the prior consent of rights holders. Napster was sued and lost⁷ and now has largely been replaced by entities with names that your kids know and you don’t. In video, the VCR is on the way out—Sony has officially killed the Betamax⁸—to be replaced by the DVD, certainly for prerecorded playback and perhaps for recording, and maybe the digital video recorder, where analog tape is swapped for the digital hard disk. Unlike music CDs, where encryption of content has come very late, DVDs came with content controls from the getgo, and the question is whether those schemes can be enforced.⁹ Television itself is to switch from analog waves to digital 1s and 0s, and the question before the Federal Communications

⁴ See Randal C. Picker, Copyright as entry policy: the case of digital distribution, *The Antitrust Law Bulletin*, Summer-Fall, 2002.

⁵ *Sony Corporation of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

⁶ See Picker, *supra* note 4, at 441.

⁷ *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001).

⁸ “Sony Pulls Plug on Betamax VCRs,” *The New York Times*, August 27, 2002.

⁹ *Universal City Studios, Inc. v. Corley*, 273 F.3d 429 (2d Cir. 2001).

Commission is how the mechanism of consent and refusal—denominated here as the “broadcast flag”—should be built into the technology from the ground up.¹⁰

With encryption, we are on the verge of a significant step in copyright: we will actually turn copyrighted works into property. While we frequently speak of copyright, patents and trademarks as “intellectual property,” this is casual, a classificatory short-hand that we think helps us to understand these three distinct bodies of law. But the term itself is quite misleading, as in some basic way, to date, intellectual property has lacked one of the key characteristics of tangible property: absent taking by force, use of tangible property requires prior consent of the owner. This isn’t true for intellectual property: I can sing copyrighted songs in the shower to my heart’s content. Intellectual property has been protected by something more akin to the torts system: a right to sue for the violation—meaning use without consent of course—of a specified right.

Note also that this type of propertization is distinctive for copyright. We should not see this for trademarks or patents. The swoosh that appears on my Nike running shoes is one of the most visible symbols in the world. If I wanted to start attaching the swoosh to my papers in a bid for cachet, without advance notice—and it would not have that—Nike has no way to stop me, and can only sue after-the-fact seeking damages and an injunction. The swoosh is not locked up; Nike can use it, but so can I, and trademarks generally don’t have the exclusive control that we associate with physical property.

The same is true for patents. The core of the U.S. patents scheme is public disclosure of the invention in exchange for exclusive use rights for 17 years. Once I pay my \$3 to download a patent from www.uspto.gov, I can put it to use immediately. Of course, that will be patent infringement, subjecting me to after-the-fact suit for damages and injunction, but again, with our system of public filing of patents, the patent holder does not have exclusive control over the content described in the patent. I have as much access to it as she does. It is only in copyright that we can imagine a rights holder asserting exclusive control through encryption.¹¹

The propertization of copyright through encryption means that the owner of a copyrighted work will be able to control access to the work through prior consent or refusal. No means no, just as it does for tangible property. If breaking the encryption scheme to gain access to a copyrighted work is treated as breaking into my home to steal my computer—and the controversial

¹⁰ See In the Matter of Digital Broadcast Copy Protection, Notice of Proposed Rulemaking, FCC 02-231 (August 9, 2002).

¹¹ This ignores trade secrets obviously, where secrecy and exclusive control are the defining characteristic of the valuable asset.

Digital Millennium Copyright Act largely embraces this scheme¹²—we further vindicate the consent and refusal choices of the owner of the copyrighted work. Had such a scheme been in effect in the 1970s, both the VCR and cable TV might have developed quite differently. Just to get going, both would have required advance consent from copyright holders, and that might have been quite difficult to obtain.

This essay sketches these cases of consent and refusal for the use of copyrighted works over the roughly 100-year path that has taken us from the age of Edison to the age of encryption and the propertization of copyrighted works. For Edison and his contemporaries, no didn't mean no, even if they wanted it to—and they did—and that has been true for most of the 20th Century. That is changing and this essay then turns briefly to considering the implications of this change.

I. Control over the Equipment: The Phonograph and the Film Projector

In the early 20th century, Victor Talking Machines Co. was one of the Big Three in the new phonograph industry (the others were Edison's National Phonograph Company and the Columbia Phonograph Company).¹³ As is often the case in new industries, competing technical approaches created some natural separation in the market. Edison's early work in 1877 on the phonograph used tin foil wrapped around a metal cylinder, and he eventually relied on wax cylinders when he sought to commercialize his invention around 1888. Other producers emphasized discs—flat circles—which, of course we know, is the dominant format today, as seen in CDs and DVDs.¹⁴

Victor went beyond technical separation to try to ensure that its players played only Victor records. It did this in part through patent litigation, successfully arguing that a producer of records that could be played on the Victrola violated the combination patent represented by the re-

¹² Codified in relevant part at 17 U.S.C. §§ 1201 – 1205.

¹³ See Andre Millard, *America on Record: A History of Recorded Sound* 49-50 (Cambridge Univ. Press 1995).

¹⁴ In this early standards battle, momentum quickly moved in favor of discs. Columbia dropped cylinders entirely by 1912, and with U.S. Phonograph Co.'s exit in 1913, Edison's then phonograph company, Thomas A. Edison, Inc., was left as the last producer of cylinders. Even Edison seemed to recognize the inevitable, introducing its Diamond Disc Phonograph in 1912. Edison sold cylinders until 1929. See Oliver Read & Walter L. Welch, *From Tin Foil to Stereo: Evolution of the Phonograph* 175 (Howard W. Sams & Co., Inc., 1959); U.S. Library of Congress, "The History of the Edison Cylinder Phonograph," (<http://memory.loc.gov/ammem/edhtml/edcylldr.html>). The success of the disc came from the ease of production; the cylinder actually played a superior sound. Id. Even when the market coalesced around discs, manufacturers achieved some technical separation by using different spindle-and-hole systems, giving rise to a market in adaptors. See Chuck Miller, *Aretino Records: The "Hole" Story* (<http://members.aol.com/clctrmania/cm-aretino.html>).

cord and the reproducing stylus matched to the record. (The Victor record used a spiral line of even depth, while the approaches by Edison and Bell/Tainter used a groove of uneven depth.)¹⁵

Victor also tried to limit play through contract and license. Each Victrola came with a plate attached to it setting forth a lengthy “License Notice.” The License Notice addressed many issues, but it started by addressing the question of licensed uses:

This machine is manufactured by us under our patents hereinafter noted, and is licensed for use only for the term of the patent having the longest term to run, and only with sound records, sound boxes and needles manufactured by us; and our records and sound boxes are licensed only for use with our machines.¹⁶

It is not crystal clear who this was aimed at. As the Supreme Court noted, it was unlikely anyone actually read the full License Notice or that anyone who read it, understood it. The Victor contract stood little chance of being enforced against end-users. Victor needed to go after the middlemen facilitating the violation of the License Notice, and they did in chasing Leeds & Catlin, but Victor did that in reliance on patent law, and not through the protections of the License Notice.

These restrictions might have been more useful in the other new, turn-of-the-century device-based entertainment medium, namely motion pictures. The early history of motion pictures is dominated by the Motion Pictures Patents Co., a patent pool organized as a “subterfuge” to control the motion pictures industry.¹⁷ Movie projectors licensed under its patents came with the following plate attached:

The sale and purchase of this machine gives only the right to use it solely with moving pictures containing the invention of reissued patent No. 12,192, leased by a licensee of the Motion Pictures Patents Company ...¹⁸

Here, the end-users were not consumers, as was the case the phonograph, but instead were exhibitors of movies, for-profit businesses.

Limitations of the sort used by Victor and the Motion Pictures Patents Co. are probably best explained as attempts at price discrimination. Here, the idea is that the Victor would like to charge more to individuals who place a higher value on the phonograph. With modern technol-

¹⁵ See *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 301, 312-13 (1909); *Leeds & Catlin Co. v. Victor Talking Machine Co.*, 213 U.S. 325 (1909).

¹⁶ *Victor Talking Machine Co. v. Strauss*, 230 F. 449, 451 (2d Cir. 1916), reversed on other grounds, 243 U.S. 490 (1917).

¹⁷ See Floyd L. Vaughan, *The United States Patent System* 46 (Greenwood Press ed. 1977).

¹⁸ *Motion Picture Patents Co. v. Universal Film Manufacturing Co.*, 243 U.S. 502, 506-07 (1917).

ogy, it might just do that through direct metering of the amount of use, say the hours of music played. Play 10 hours of music per month, pay \$10 per month to Victor for the use of the phonograph, play 20 hours pay \$20.

Absent the ability to engage in direct metering—and Victor probably couldn't have done this at a reasonable price—a natural alternative is to try to collect more from those who place a high value on music through the records themselves. People who like music more will buy more of it, so the purchase of records themselves might operate as an indirect way of metering use. The key to this, though, is the ability to charge more-than-competitive prices for the record, as otherwise this accomplishes little for Victor. Victor can't do that if the record market is competitive, unless it has a means—legal or technical—to insist that only Victor records be played on Victor phonographs, hence the limitation. Again, had Victor been able to meter directly, the price discrimination rationale would have given Victor little reason to tie Victor phonographs with Victor records.

II. Control over Competition: Radio and the VCR

The restrictions used by Victor and the Motion Pictures Patents Co. appear to be efforts at price discrimination rather than efforts at controlling more, subtle strategic interactions. A second reason to use restrictions of this sort is more strategic, an effort to alter competition. Consider radio and the VCR.

A. Radio

The record/radio interaction lends meat to a possible strategic angle for restrictive legends. Whether radio complements record sales or is instead a substitute for them remains a hotly-contested question. Do I buy fewer records when I can listen to music for free—over the air in the beginning and over the web today—or is radio free advertising for record sales? This is hardly a new question: sheet music sellers faced the same conundrum when the phonograph emerged and the new phonograph companies started producing content without the consent of copyright holders.¹⁹

This question still looms large today. The continuing fight over payola—the practice of paying for play of songs, either directly or indirectly—is precisely about the way in which radio play influences what listeners hear and buy.²⁰ The radio/record intersection is also at the heart of the fight over how much webcasters should pay when they “broadcast” CDs over the Internet.²¹

¹⁹ See Read & Welch, *supra* note 14, at 391.

²⁰ For the history, see R.H. Coase, *Payola in Radio and Television Broadcasting*, 22 J. Law & Econ.

These issues need not detain us here, but consider instead the legends used by record manufacturers in the 1930s. Judge Learned Hand's important 1940 opinion in *RCA Manufacturing Co. v. Whiteman*,²² mentions two legends used by RCA, the simple "Not Licensed for Radio Broadcast," and the more complex:

Licensed by Mfr. under U.S. Pats. 1625705, 1637544, RE. 16588 (& other Pats. Pending) Only for Non-Commercial Use on Phonographs in Homes. Mfr. & Original Purchaser Have Agreed This Record Shall Not Be Resold Or Used for Any Other Purpose. See Detailed Notice of Envelope.

Whiteman rejected the efforts by record producers to limit broadcast use by notices affixed to the records themselves.²³ These legends barring radio play are easily understood in strategic terms, as an effort to raise rival's costs. Record companies feared that radio would operate as substitute for records. Radio stations could just use live performances—and did, of music, dramatic shows such as *The Shadow*, and comedy classics such as Fibber McGee and Molly. Switching from live music to recorded music obviously held the promise of lowering one key input cost, and records were the natural source of the music. It is easy to see record owners making an initial move to limit use by radio companies as a way to reduce music competition and to set themselves up for a subsequent attempt at price discrimination, by licensing records for specific broadcast use to the radio networks.

B. The VCR

With color TV reaching a saturation point, a number of companies were pursuing research programs to create the next great consumer video device. Indeed, some companies, such as RCA, were pursuing multiple approaches simultaneously. Two paths were seen as particularly promising, magnetic tape and prerecorded disks, the video equivalent of the Compact Disc for music. The success of the VCR and the failure—at least in its first incarnation—of the prerecorded video CD can be traced in part to the role of consent as to copyrighted works.

Sony launched a freestanding VCR in the U.S. in February, 1976.²⁴ Early purchasers of the VCR looked to it for time-shifting of TV broadcasts, not play of prerecorded tapes.²⁵ This con-

269 (1979), and for current disputes, see Anna Wilde Mathews & Jennifer Ordonez, Music Labels Say It Costs Too Much to Get On Radio, *The Wall Street Journal*, June 10, 2002, p. B1.

²¹ I offer a more detailed discussion of webcasting in Picker, *supra* note 4.

²² 114 F.2d 86 (2nd Cir. 1940).

²³ *Id.* at 89-90.

²⁴ John Nathan, Sony 106 (Houghton Mifflin, 1999).

²⁵ Michael A. Cusumano, Yiorgos Mylonadis & Richard S. Rosenbloom, Strategic Maneuvering and

siderably simplified the consent and refusal process. VCR manufacturers didn't need to coordinate with copyright owners to get access to broadcasts—didn't need to get their consent—but could instead just litigate with them and win or lose.

Not that Sony actually played this through in advance of releasing the VCR. Of course, Sony made the standard lawyerly moves of its entertainment predecessors. A predecessor to the Betamax, the Sony U-Matic, came with an attached plate bearing the legend "This videotape recorder is not to be used to record copyrighted works." The Betamax itself did not bear such a plate, but the operating instructions addressed the copyright question: "Television programs, films, videotapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the United States copyright laws."²⁶

Much more to the point is that it appears that Sony hadn't considered whether there would be a real copyright problem and even dismissed the likelihood of a lawsuit in the face of direct allegations of copyright infringement from Sidney Sheinberg, then the president of MCA/Universal.²⁷ But the VCR producers didn't have to get consent before the fact to access the broadcasts—more precisely, to allow their customers to record broadcasts—and didn't. The manufacturers also didn't need to induce the copyright owners to issue prerecorded tapes, which would have required the owners to wrestle with the standard question of how distribution on the new medium might undercut revenue streams from other media, such as movies, pay TV, cable and broadcast TV. In contrast, the main competition in next-generation video—think the video record or the video CD, as capturing the idea of a prerecorded video disk technology—depended precisely on careful coordination of hardware and content.²⁸

Barely six months after the Betamax was introduced in the U.S., Sony was sued for copyright infringement.²⁹ The lawsuit sought money damages, as well as an injunction against the Betamax. One of the issues that the case addressed was the question of copyright owner consent to time shifting. At the Supreme Court, the majority understood the copyright owners to contend that

Mass-Market Dynamics: The Triumph of VHS over Beta, 66 *Bus. Hist. Rev.* 51, 84-85 (1992); *Universal City Studios, Inc. v. Sony Corp. of America*, 480 F.Supp. 429, 439 (C.D. Calif. 1979), *aff'd in part and rev'd in part*, 659 F.2d 963 (9th Cir. 1981), *rev'd*, 464 U.S. 417 (1984).

²⁶ *Id.* at 436.

²⁷ See Nathan, *supra* note 24, at 106-08.

²⁸ See Margaret B.W. Graham, *The business of research: RCA and the VideoDisc* 113-14 (Cambridge Univ. Press, 1986).

²⁹ See Nathan, *supra* note 24, at 108.

they had the exclusive right to distribute VCRs.³⁰ This flowed from the view that the copyright owners could insist on advance consent to the taping of their copyrighted works.

In his dissent, Justice Blackmun was sensitive to the design decisions made about the VCR and what the future might hold. The decision to allow recording, rather than just playback of pre-recorded tapes, was of course the key design choice. That gave the product a decided advantage over competing playback only systems, such as the RCA VideoDisc, and of course it was the recording feature that raised the hackles of the copyright owners. Justice Blackmun also understood that new technology might allow the VCR to permit or bar recording based on a signal sent by the broadcast, and suggests that the Court should have left open the possibility the Sony would have had the duty to respect such a signal.³¹

Why did some copyright owners oppose the VCR? One possibility, of course, is that they didn't oppose it at all, but that they were simply looking to maximize their bargaining position by ensuring that their consent was required before programs could be recorded. This is to give copyright owners a consent right and might have resulted in a copyright tax system, with royalties on VCR and tape sales. Indeed, we embraced such a scheme for digital recording devices in the Audio Home Recording Act of 1992.³²

Putting to one side the hold up value of having to consent to copying, for copyright holders, the critical question was whether the VCR was seen as a competitor or as another means of content distribution. This depended largely on how consumers would use the VCR: playback of self-recorded tapes, mainly from TV or purchase or rental of prerecorded tapes? Play of prerecorded tapes made the VCR a new channel of distribution, one that, with the benefit of hindsight, we know to have become extraordinarily valuable. But if purchasers had focused instead on play of recorded programs over TV—and this is what early VCR purchasers did—the VCR might have altered video competition in important ways.

Greater consumer control over broadcast TV might have shifted the mix between consumption of free video (TV) and fee video, such as movies seen in movie theaters. Suppose that I love soap operas and would watch them over anything else, but work during the day. At night, when I can consume video, the soaps aren't on, so I go to movies instead. When the VCR was introduced, fee video was less time-constrained than free video, which you had to watch when it aired

³⁰ See Sony, 464 U.S. at 441 n. 21.

³¹ See Sony, 464 U.S. at 494 (“Sony may be able, for example, to build a VTR that enables broadcasters to scramble the signal of individual programs and ‘jam’ the unauthorized recording of them”).

³² See P.L. 102-563 (Oct. 28, 1992), codified at Chapter 10 of Title 17 of the United States Code.

or it was gone, so a VCR used for recording might have shifted the consumption mix in favor of TV to the determinant of movie producers.

The second thought is raised in *Sony* itself and now in the litigation over the digital video recorder is that the ability to skip commercials would kill free TV entirely. On this line, consumers will stop watching commercials, given the power to do so. Commercials are the way we “pay” for free TV, so if advertisers know no one is watching the commercials, they won’t buy ad time. Free TV dies. Efforts by copyright owners to control home-taping then becomes an effort to protect the financing mechanism for free broadcast TV, and a hope to solve the collective action problem consumers might otherwise face (we each want the other guy to watch the commercials).

III. Control Perfected: Digital TV and the Broadcast Flag

This essay has tracked roughly the 20th century development of the devices of mass entertainment: the phonograph and movies; radio; and the VCR. The glaring omission of course is television.³³ The technical invention of TV occurred amidst the almost prototypical competition between the loner—Philo T. Farnsworth—and the industrial behemoth—RCA.³⁴ But “inventing” TV technically was in some sense the easy part; the hard part was putting together the integrated platform of complements that commercialized the invention: manufacturing, distribution, and most importantly, content. Here, RCA was uniquely situated to drive TV forward, notwithstanding enormous uncertainties, and did so under David Sarnoff’s leadership. As a vertically integrated entity—with R&D, manufacturing and, most importantly, ownership of the National Broadcasting Co.—RCA had the power to create black-and-white TV.³⁵

Switching from black-and-white to color was almost as complex. The move from monochrome to color involved a struggle over standards—where the FCC, after hemming and hawing, chose a CBS-backed system, only to reverse course three years later and adopt a system RCA was pushing. The Korean War prevented manufacture of color sets, while allowing production of black-and-white sets, and this created a deeper installed base of TV sets. This mattered, as RCA’s

³³ And cable of course. On cable entry, early case law favored the copyright owners, but two key Supreme Court decisions established that cable operators were more like viewers than broadcasters and therefore did not perform the works that they carried. *Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390, 400-01 (1968); *Teleprompter Corp. v. Columbia Broadcasting System, Inc.*, 415 U.S. 394 (1974). That regime lasted less than two years, as the Copyright Act of 1976 reset the rules for so-called secondary transmissions, treating some unauthorized transmissions as a copyright infringement but coupling that with a statutory mandatory licensing scheme. See 17 U.S.C. § 501, 17 U.S.C. § 111.

³⁴ Evan I. Schwartz, *The Last Lone Inventor* (Harper Collins 2002).

³⁵ See Kenneth Bilby, *The General: David Sarnoff and the Rise of the Communications Industry* Ch. 6

system was backward compatible, meaning that monochrome sets could receive color broadcasts without an adaptor, while the CBS system would have required retrofitting with adaptors. The war also gave RCA the chance to improve its all-electronic system, while CBS's combined mechanical-electronic system didn't move forward substantially during that time due to inherent limitations in the core mechanical technology.³⁶

We are now in the midst of our second TV standards switch, a move from the NTSC color standard set in 19xx to digital TV. The FCC established a new over-the-air broadcast standard on December 27, 1996.³⁷ Digital TV promises greater definition, better sound, and more flexibility, plus digital over-the-air broadcast uses spectrum more efficiently.

Any standards switch is hard. This one is complicated by the fact that we do not have an RCA today, a vertically-integrated private entity that can benefit across the platform—hardware and content—from the switch (Sony might be the best match, but seems to play no special role in this standards switch). The presence of cable and satellite TV further complicate matters. It is not merely a question of synching digital broadcasts with digital tuners—though this is hard and controversial enough³⁸—but also getting the digital content into the pipes—whether coaxial cable or beams from satellites—that actually deliver TV content to most viewers. Cable and satellite TV were not a bottleneck in the prior TV standard settings.

Were these problems not enough, we finally get to the “broadcast flag.” Justice Blackmun's dissent in *Sony* recognized that in the future, a copyright owner's consent to home-taping might be embedded in the broadcast signal. The FCC has commenced a rule-making to consider precisely this question as part of the switch to digital TV, to consider to what extent the FCC should embrace some sort of broadcast flag.³⁹ This comes on the heels of an industry process under the guise of the Broadcast Protection Discussion Subgroup, which vetted many of the issues relating to a broadcast flag.⁴⁰ If consumer electronics devices were designed to recognize the consent or refusal represented by the broadcast flag, the path started by Victor and the Motion Pictures Pat-

(Harper & Row, 1986).

³⁶ See *id.* at chs. 8 and 9.

³⁷ In the Matter of Advanced Television Systems and Their Impact on the Existing Broadcast Service, FCC 96-493 (December 27, 1996).

³⁸ In a ruling that is sure to be challenged, the FCC has set a schedule pursuant to which consumer electronics manufacturers must include digital tuners in a variety of devices, including TV sets. See In the Matter of Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, FCC 02-230 (August 9, 2002).

³⁹ In the Matter of Digital Broadcast Copy Protection, Notice of Proposed Rulemaking, FCC 02-231 (August 9, 2002).

⁴⁰ See *id.* at ¶ 2.

ent Co. would be completed. Copyright owners could control use at the end-user level and copyright would be more fully propertized.

IV. Understanding the Propertization of Copyright

The move towards the propertization of copyright through encryption—turning copyrights into *real* intellectual property—is quite controversial. The flashpoint is the Digital Millennium Copyright Act—a complex statute—but which, in the simple version, places limits on the extent to which encryption schemes can be defeated. Again, as copyright holders can lock content in a way that patent holders and trademark owners cannot, encryption propertizes copyright and the DMCA vindicates those locks and keys.

One of the critical battlegrounds of digital consent is the question of the scope of rights that a consumer should have in a copyrighted work and whether producers can set those rights through a combination of contract and technology limits. In these settings, technology just operates as contracts with end-users that can, in the main, be enforced. The legends used by Victor, the Motion Pictures Patent Co. and RCA can be implemented through technology. No means no.

What of course is driving this, is that the technology of consent has changed and this now makes richer licensing structures possible, thereby allowing greater product diversity (meaning more licensing options here). If copyrighted works—in the main, music and video—are delivered over the Internet, the use rights can be quite tailored. The changing technology of consent makes it possible to unbundle the rights heretofore associated the grant of access to a copyrighted work.

The criticism of the propertization of copyright through encryption is both doctrinal and more theoretical. At the level of doctrine, much of the discussion focuses on copyright's idea of fair use.⁴¹ A critical question here—if not *the* critical question—is the interaction between copyright and contract. If I as a copyright holder attempt through contract to specify a set of use rights that would be more restricted than those that a user would otherwise have under fair use, is that contract enforceable as written or is it void against public policy? More simply, are fair use rights waivable or non-waivable? A detailed doctrinal discussion is outside the scope of this essay, so I will leave that for another day.

Focus instead on the theoretical criticism, and pursue two angles on this. The first is to consider whether certain use access forms—rental and ownership, for example—that arose in one particular technological context should have any special status when the technology context

⁴¹ Codified at 17 USC § 107.

changes completely. The second is to focus on the consequences of insisting that consumers must receive a mandatory “bundle” of fair use rights that cannot be altered through contract or technology.

On the first, I find it difficult to understand why we should privilege a set of packages of use rights that arose in a different transactions costs and technological setting. To date, we have lived with two main modes of access—per use typically through rental and full, unvarnished ownership. There certainly is an undercurrent suggesting that any attempt to package use rights in a way that deviates from those modes is necessarily out of bounds.⁴² So if a content owner sells you a music CD but limits your ability to play it to just music CD players and bars play on computer CD player or space-shifting to an MP3 player, this restriction—be it through contract or through technology—is somehow illegitimate.

This is difficult to understand. The narrow set of institutional arrangements for access to content that have been supported to date reflect the transaction costs and technological difficulties of implementing alternative arrangements. As technology changes and the transactions costs of creating richer access rights drops, we should expect to see many new institutional arrangements.

One key conception of fair use looks to transaction costs.⁴³ This conception of fair use means fair use rights should change with the times, that fair use rights depend on the technological and institutional context in which transactions take place. As transaction costs drop, through a combination of institutional arrangements, such as the [copyright clearinghouse] and as the Internet creates a ubiquitous structure for micro-transactions—microconsents with micropayments—fair use might cease to play a meaningful role. Note that this means that we would not end up with “underutilized” copyrighted works. Microconsent, as it were, would make it possible to charge users small amounts for small uses, and we could march down the demand curve for a particular work.⁴⁴

A second perspective on fair use is less concerned with the transactions costs of consented to use and more focused on the allocative choices that we appear to make when we allow producers to hand out narrow slices of permitted uses.⁴⁵ On this perspective, even if dropping transactions

⁴² See, e.g., the consumer bill of rights at DigitalConsumer.org (<http://www.digitalconsumer.org/bill.html>).

⁴³ 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 (1982).

⁴⁴ For a more detailed description of this idea, see Stan Liebowitz, Policing Pirates in the Networked Age, Cato Policy Analysis No. 438, at 17-18 (May 15, 2002).

⁴⁵ See, e.g., Julie E. Cohen, *Lochner* in Cyberspace: The New Economic Orthodoxy of “Rights Management,” 97 Mich. L. Rev. 462 (1998).

costs allowed us to price discriminate perfectly and thereby maximize the use of a copyrighted work, all of the surplus from the work would be allocated to the producer. If your allocative tastes run differently, then you might favor a set of non-waivable fair use rights, and hope that any diminution in returns to producers doesn't reduce the incentive to produce creative works in the first place.

Even this turns out to be tricky to make work. If a music CD must come with the right to make an MP3 copy, producers may just raise the price for the bundle, and this may squeeze out some consumers.⁴⁶ Moreover, this approach to fair use limits product diversity. Each consumer has to be sold the same bundle of attributes, regardless of whether a particular consumer wants to be able to move songs to an MP3 player. In many ways, a mandatory fair use bundle runs contrary to the history of blanket licenses in ASCAP and BMI, where each has offered a blanket license giving full access to the ASCAP or BMI library and where rights users have sought a richer set of licenses allowing for more piecemeal use.⁴⁷

The other issue of interest here is the question of whether the propertization of copyright will induce greater creativity by allowing producers to capture a greater return on their works. While the technology of consent has changed dramatically as we have moved from Edison's phonograph to the broadcast flag of digital TV, we probably have not moved forward substantially on this key question. In 1940, Judge Learned Hand offered this perspective in considering RCA's effort to limit the radio use of records:

If the talents of conductors of orchestras are denied that compensation which is necessary to evoke their efforts because they get too little for phonographic records, we have no means of knowing it; and it is idle to invoke the deus ex machina of a "progress" which is probably spurious, and would not be for us to realize, if it were genuine.⁴⁸

⁴⁶ See Liebowitz, *supra* note 44, at 4-6

⁴⁷ *Broadcast Music, Inc. v. Columbia Broadcasting, Inc.*, 441 U.S. 1 (1979).

⁴⁸ *RCA Manufacturing Co.*, 114 F.2d at 90.

Readers with comments should address them to:

Professor Randal C. Picker
University of Chicago Law School
1111 East 60th Street
Chicago, IL 60637
r-picker@uchicago.edu

Chicago Working Papers in Law and Economics (Second Series)

1. William M. Landes, Copyright Protection of Letters, Diaries and Other Unpublished Works: An Economic Approach (July 1991)
2. Richard A. Epstein, The Path to *The T. J. Hooper*: The Theory and History of Custom in the Law of Tort (August 1991)
3. Cass R. Sunstein, On Property and Constitutionalism (September 1991)
4. Richard A. Posner, Blackmail, Privacy, and Freedom of Contract (February 1992)
5. Randal C. Picker, Security Interests, Misbehavior, and Common Pools (February 1992)
6. Tomas J. Philipson & Richard A. Posner, Optimal Regulation of AIDS (April 1992)
7. Douglas G. Baird, Revisiting Auctions in Chapter 11 (April 1992)
8. William M. Landes, Sequential versus Unitary Trials: An Economic Analysis (July 1992)
9. William M. Landes & Richard A. Posner, The Influence of Economics on Law: A Quantitative Study (August 1992)
10. Alan O. Sykes, The Welfare Economics of Immigration Law: A Theoretical Survey With An Analysis of U.S. Policy (September 1992)
11. Douglas G. Baird, 1992 Katz Lecture: Reconstructing Contracts (November 1992)
12. Gary S. Becker, The Economic Way of Looking at Life (January 1993)
13. J. Mark Ramseyer, Credibly Committing to Efficiency Wages: Cotton Spinning Cartels in Imperial Japan (March 1993)
14. Cass R. Sunstein, Endogenous Preferences, Environmental Law (April 1993)
15. Richard A. Posner, What Do Judges and Justices Maximize? (The Same Thing Everyone Else Does) (April 1993)
16. Lucian Arye Bebchuk and Randal C. Picker, Bankruptcy Rules, Managerial Entrenchment, and Firm-Specific Human Capital (August 1993)
17. J. Mark Ramseyer, Explicit Reasons for Implicit Contracts: The Legal Logic to the Japanese Main Bank System (August 1993)
18. William M. Landes and Richard A. Posner, The Economics of Anticipatory Adjudication (September 1993)
19. Kenneth W. Dam, The Economic Underpinnings of Patent Law (September 1993)
20. Alan O. Sykes, An Introduction to Regression Analysis (October 1993)
21. Richard A. Epstein, The Ubiquity of the Benefit Principle (March 1994)
22. Randal C. Picker, An Introduction to Game Theory and the Law (June 1994)
23. William M. Landes, Counterclaims: An Economic Analysis (June 1994)
24. J. Mark Ramseyer, The Market for Children: Evidence from Early Modern Japan (August 1994)
25. Robert H. Gertner and Geoffrey P. Miller, Settlement Escrows (August 1994)

26. Kenneth W. Dam, Some Economic Considerations in the Intellectual Property Protection of Software (August 1994)
27. Cass R. Sunstein, Rules and Rulelessness, (October 1994)
28. David Friedman, More Justice for Less Money: A Step Beyond *Cimino* (December 1994)
29. Daniel Shaviro, Budget Deficits and the Intergenerational Distribution of Lifetime Consumption (January 1995)
30. Douglas G. Baird, The Law and Economics of Contract Damages (February 1995)
31. Daniel Kessler, Thomas Meites, and Geoffrey P. Miller, Explaining Deviations from the Fifty Percent Rule: A Multimodal Approach to the Selection of Cases for Litigation (March 1995)
32. Geoffrey P. Miller, Das Kapital: Solvency Regulation of the American Business Enterprise (April 1995)
33. Richard Craswell, Freedom of Contract (August 1995)
34. J. Mark Ramseyer, Public Choice (November 1995)
35. Kenneth W. Dam, Intellectual Property in an Age of Software and Biotechnology (November 1995)
36. Cass R. Sunstein, Social Norms and Social Roles (January 1996)
37. J. Mark Ramseyer and Eric B. Rasmusen, Judicial Independence in Civil Law Regimes: Econometrics from Japan (January 1996)
38. Richard A. Epstein, Transaction Costs and Property Rights: Or Do Good Fences Make Good Neighbors? (March 1996)
39. Cass R. Sunstein, The Cost-Benefit State (May 1996)
40. William M. Landes and Richard A. Posner, The Economics of Legal Disputes Over the Ownership of Works of Art and Other Collectibles (July 1996)
41. John R. Lott, Jr. and David B. Mustard, Crime, Deterrence, and Right-to-Carry Concealed Handguns (August 1996)
42. Cass R. Sunstein, Health-Health Tradeoffs (September 1996)
43. G. Baird, The Hidden Virtues of Chapter 11: An Overview of the Law and Economics of Financially Distressed Firms (March 1997)
44. Richard A. Posner, Community, Wealth, and Equality (March 1997)
45. William M. Landes, The Art of Law and Economics: An Autobiographical Essay (March 1997)
46. Cass R. Sunstein, Behavioral Analysis of Law (April 1997)
47. John R. Lott, Jr. and Kermit Daniel, Term Limits and Electoral Competitiveness: Evidence from California's State Legislative Races (May 1997)
48. Randal C. Picker, Simple Games in a Complex World: A Generative Approach to the Adoption of Norms (June 1997)
49. Richard A. Epstein, Contracts Small and Contracts Large: Contract Law through the Lens of Laissez-Faire (August 1997)

50. Cass R. Sunstein, Daniel Kahneman, and David Schkade, *Assessing Punitive Damages (with Notes on Cognition and Valuation in Law)* (December 1997)
51. William M. Landes, Lawrence Lessig, and Michael E. Solimine, *Judicial Influence: A Citation Analysis of Federal Courts of Appeals Judges* (January 1998)
52. John R. Lott, Jr., *A Simple Explanation for Why Campaign Expenditures are Increasing: The Government is Getting Bigger* (February 1998)
53. Richard A. Posner, *Values and Consequences: An Introduction to Economic Analysis of Law* (March 1998)
54. Denise DiPasquale and Edward L. Glaeser, *Incentives and Social Capital: Are Homeowners Better Citizens?* (April 1998)
55. Christine Jolls, Cass R. Sunstein, and Richard Thaler, *A Behavioral Approach to Law and Economics* (May 1998)
56. John R. Lott, Jr., *Does a Helping Hand Put Others At Risk?: Affirmative Action, Police Departments, and Crime* (May 1998)
57. Cass R. Sunstein and Edna Ullmann-Margalit, *Second-Order Decisions* (June 1998)
58. Jonathan M. Karpoff and John R. Lott, Jr., *Punitive Damages: Their Determinants, Effects on Firm Value, and the Impact of Supreme Court and Congressional Attempts to Limit Awards* (July 1998)
59. Kenneth W. Dam, *Self-Help in the Digital Jungle* (August 1998)
60. John R. Lott, Jr., *How Dramatically Did Women's Suffrage Change the Size and Scope of Government?* (September 1998)
61. Kevin A. Kordana and Eric A. Posner, *A Positive Theory of Chapter 11* (October 1998)
62. David A. Weisbach, *Line Drawing, Doctrine, and Efficiency in the Tax Law* (November 1998)
63. Jack L. Goldsmith and Eric A. Posner, *A Theory of Customary International Law* (November 1998)
64. John R. Lott, Jr., *Public Schooling, Indoctrination, and Totalitarianism* (December 1998)
65. Cass R. Sunstein, *Private Broadcasters and the Public Interest: Notes Toward A "Third Way"* (January 1999)
66. Richard A. Posner, *An Economic Approach to the Law of Evidence* (February 1999)
67. Yannis Bakos, Erik Brynjolfsson, Douglas Lichtman, *Shared Information Goods* (February 1999)
68. Kenneth W. Dam, *Intellectual Property and the Academic Enterprise* (February 1999)
69. Gertrud M. Fremling and Richard A. Posner, *Status Signaling and the Law, with Particular Application to Sexual Harassment* (March 1999)
70. Cass R. Sunstein, *Must Formalism Be Defended Empirically?* (March 1999)

71. Jonathan M. Karpoff, John R. Lott, Jr., and Graeme Rankine, Environmental Violations, Legal Penalties, and Reputation Costs (March 1999)
72. Matthew D. Adler and Eric A. Posner, Rethinking Cost-Benefit Analysis (April 1999)
73. John R. Lott, Jr. and William M. Landes, Multiple Victim Public Shooting, Bombings, and Right-to-Carry Concealed Handgun Laws: Contrasting Private and Public Law Enforcement (April 1999)
74. Lisa Bernstein, The Questionable Empirical Basis of Article 2's Incorporation Strategy: A Preliminary Study (May 1999)
75. Richard A. Epstein, Deconstructing Privacy: and Putting It Back Together Again (May 1999)
76. William M. Landes, Winning the Art Lottery: The Economic Returns to the Ganz Collection (May 1999)
77. Cass R. Sunstein, David Schkade, and Daniel Kahneman, Do People Want Optimal Deterrence? (June 1999)
78. Tomas J. Philipson and Richard A. Posner, The Long-Run Growth in Obesity as a Function of Technological Change (June 1999)
79. David A. Weisbach, Ironing Out the Flat Tax (August 1999)
80. Eric A. Posner, A Theory of Contract Law under Conditions of Radical Judicial Error (August 1999)
81. David Schkade, Cass R. Sunstein, and Daniel Kahneman, Are Juries Less Erratic than Individuals? Deliberation, Polarization, and Punitive Damages (September 1999)
82. Cass R. Sunstein, Nondelegation Canons (September 1999)
83. Richard A. Posner, The Theory and Practice of Citations Analysis, with Special Reference to Law and Economics (September 1999)
84. Randal C. Picker, Regulating Network Industries: A Look at *Intel* (October 1999)
85. Cass R. Sunstein, Cognition and Cost-Benefit Analysis (October 1999)
86. Douglas G. Baird and Edward R. Morrison, Optimal Timing and Legal Decisionmaking: The Case of the Liquidation Decision in Bankruptcy (October 1999)
87. Gertrud M. Fremling and Richard A. Posner, Market Signaling of Personal Characteristics (November 1999)
88. Matthew D. Adler and Eric A. Posner, Implementing Cost-Benefit Analysis When Preferences Are Distorted (November 1999)
89. Richard A. Posner, Orwell versus Huxley: Economics, Technology, Privacy, and Satire (November 1999)
90. David A. Weisbach, Should the Tax Law Require Current Accrual of Interest on Derivative Financial Instruments? (December 1999)
91. Cass R. Sunstein, The Law of Group Polarization (December 1999)
92. Eric A. Posner, Agency Models in Law and Economics (January 2000)

93. Karen Eggleston, Eric A. Posner, and Richard Zeckhauser, *Simplicity and Complexity in Contracts* (January 2000)
94. Douglas G. Baird and Robert K. Rasmussen, *Boyd's Legacy and Blackstone's Ghost* (February 2000)
95. David Schkade, Cass R. Sunstein, Daniel Kahneman, *Deliberating about Dollars: The Severity Shift* (February 2000)
96. Richard A. Posner and Eric B. Rasmusen, *Creating and Enforcing Norms, with Special Reference to Sanctions* (March 2000)
97. Douglas Lichtman, *Property Rights in Emerging Platform Technologies* (April 2000)
98. Cass R. Sunstein and Edna Ullmann-Margalit, *Solidarity in Consumption* (May 2000)
99. David A. Weisbach, *An Economic Analysis of Anti-Tax Avoidance Laws* (May 2000, revised May 2002)
100. Cass R. Sunstein, *Human Behavior and the Law of Work* (June 2000)
101. William M. Landes and Richard A. Posner, *Harmless Error* (June 2000)
102. Robert H. Frank and Cass R. Sunstein, *Cost-Benefit Analysis and Relative Position* (August 2000)
103. Eric A. Posner, *Law and the Emotions* (September 2000)
104. Cass R. Sunstein, *Cost-Benefit Default Principles* (October 2000)
105. Jack Goldsmith and Alan Sykes, *The Dormant Commerce Clause and the Internet* (November 2000)
106. Richard A. Posner, *Antitrust in the New Economy* (November 2000)
107. Douglas Lichtman, Scott Baker, and Kate Kraus, *Strategic Disclosure in the Patent System* (November 2000)
108. Jack L. Goldsmith and Eric A. Posner, *Moral and Legal Rhetoric in International Relations: A Rational Choice Perspective* (November 2000)
109. William Meadow and Cass R. Sunstein, *Statistics, Not Experts* (December 2000)
110. Saul Levmore, *Conjunction and Aggregation* (December 2000)
111. Saul Levmore, *Puzzling Stock Options and Compensation Norms* (December 2000)
112. Richard A. Epstein and Alan O. Sykes, *The Assault on Managed Care: Vicarious Liability, Class Actions and the Patient's Bill of Rights* (December 2000)
113. William M. Landes, *Copyright, Borrowed Images and Appropriation Art: An Economic Approach* (December 2000)
114. Cass R. Sunstein, *Switching the Default Rule* (January 2001)
115. George G. Triantis, *Financial Contract Design in the World of Venture Capital* (January 2001)
116. Jack Goldsmith, *Statutory Foreign Affairs Preemption* (February 2001)

117. Richard Hynes and Eric A. Posner, *The Law and Economics of Consumer Finance* (February 2001)
118. Cass R. Sunstein, *Academic Fads and Fashions (with Special Reference to Law)* (March 2001)
119. Eric A. Posner, *Controlling Agencies with Cost-Benefit Analysis: A Positive Political Theory Perspective* (April 2001)
120. Douglas G. Baird, *Does Bogart Still Get Scale? Rights of Publicity in the Digital Age* (April 2001)
121. Douglas G. Baird and Robert K. Rasmussen, *Control Rights, Priority Rights and the Conceptual Foundations of Corporate Reorganization* (April 2001)
122. David A. Weisbach, *Ten Truths about Tax Shelters* (May 2001)
123. William M. Landes, *What Has the Visual Arts Rights Act of 1990 Accomplished?* (May 2001)
124. Cass R. Sunstein, *Social and Economic Rights? Lessons from South Africa* (May 2001)
125. Christopher Avery, Christine Jolls, Richard A. Posner, and Alvin E. Roth, *The Market for Federal Judicial Law Clerks* (June 2001)
126. Douglas G. Baird and Edward R. Morrison, *Bankruptcy Decision Making* (June 2001)
127. Cass R. Sunstein, *Regulating Risks after ATA* (June 2001)
128. Cass R. Sunstein, *The Laws of Fear* (June 2001)
129. Richard A. Epstein, *In and Out of Public Solution: The Hidden Perils of Property Transfer* (July 2001)
130. Randal C. Picker, *Pursuing a Remedy in Microsoft: The Declining Need for Centralized Coordination in a Networked World* (July 2001)
131. Cass R. Sunstein, Daniel Kahneman, David Schkade, and Ilana Ritov, *Predictably Incoherent Judgments* (July 2001)
132. Eric A. Posner, *Courts Should Not Enforce Government Contracts* (August 2001)
133. Lisa Bernstein, *Private Commercial Law in the Cotton Industry: Creating Cooperation through Rules, Norms, and Institutions* (August 2001)
134. Richard A. Epstein, *The Allocation of the Commons: Parking and Stopping on the Commons* (August 2001)
135. Cass R. Sunstein, *The Arithmetic of Arsenic* (September 2001)
136. Eric A. Posner, Richard Hynes, and Anup Malani, *The Political Economy of Property Exemption Laws* (September 2001)
137. Eric A. Posner and George G. Triantis, *Covenants Not to Compete from an Incomplete Contracts Perspective* (September 2001)
138. Cass R. Sunstein, *Probability Neglect: Emptions, Worst Cases, and Law* (November 2001)
139. Randall S. Kroszner and Philip E. Strahan, *Throwing Good Money after Bad? Board Connections and Conflicts in Bank Lending* (December 2001)

140. Alan O. Sykes, TRIPs, Pharmaceuticals, Developing Countries, and the Doha "Solution" (February 2002)
141. Edna Ullmann-Margalit and Cass R. Sunstein, Inequality and Indignation (February 2002)
142. Daniel N. Shaviro and David A. Weisbach, The Fifth Circuit Gets It Wrong in *Compaq v. Commissioner* (February 2002) (Published in *Tax Notes*, January 28, 2002)
143. Warren F. Schwartz and Alan O. Sykes, The Economic Structure of Renegotiation and Dispute Resolution in the WTO/GATT System (March 2002, forthcoming *Journal of Legal Studies* 2002)
144. Richard A. Epstein, HIPAA on Privacy: Its Unintended and Intended Consequences (March 2002, forthcoming *Cato Journal*, summer 2002)
145. David A. Weisbach, Thinking Outside the Little Boxes (March 2002, forthcoming *Texas Law Review*)
146. Eric A. Posner, Economic Analysis of Contract Law after Three Decades: Success or Failure (March 2002)
147. Randal C. Picker, Copyright as Entry Policy: The Case of Digital Distribution (April 2002, forthcoming *The Antitrust Bulletin*)
148. David A. Weisbach, Taxes and Torts in the Redistribution of Income (April 2002, Coase Lecture February 2002)
149. Cass R. Sunstein, Beyond the Precautionary Principle (April 2002)
150. Robert W. Hahn and Cass R. Sunstein, A New Executive Order for Improving Federal Regulation? Deeper and Wider Cost-Benefit Analysis (April 2002)
151. Douglas Lichtman, Copyright as a Rule of Evidence (May 2002)
152. Richard A. Epstein, Steady the Course: Property Rights in Genetic Material (May 2002)
153. Jack Goldsmith and Cass R. Sunstein, Military Tribunals and Legal Culture: What a Difference Sixty Years Makes (June 2002)
154. William M. Landes and Richard A. Posner, Indefinitely Renewable Copyright (July 2002)
155. Anne Gron and Alan O. Sykes, Terrorism and Insurance Markets: A Role for the Government as Insurer? (July 2002)
156. Cass R. Sunstein and Adrian Vermeule, Interpretation and Institutions (July 2002)
157. Cass R. Sunstein, The Rights of Animals: A Very Short Primer (August 2002)
158. Cass R. Sunstein, Avoiding Absurdity? A New Canon in Regulatory Law (with Notes on Interpretive Theory) (August 2002)
159. Randal C. Picker, *From Edison to the Broadcast Flag: Mechanisms of Consent and Refusal and the Propertization of Copyright* (September 2002)