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COPYRIGHT LAW AND PRICE DISCRIMINATION

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Abstract

I show that copyright law is intimately connected to price discrimination. First, price discrimination is common in markets for copyrighted works. Second, many features of copyright law affect *resale* or *personal* arbitrage and so influence the profitability of price discrimination. For example, the first sale doctrine and the fair use doctrine often facilitate arbitrage and discourage discrimination, while the derivative and public performance rights impede arbitrage and promote discrimination. Third, optimal copyright policy requires attention to the social costs and benefits from price discrimination.

I use models of price discrimination to unify the analysis of a wide range of copyright policy issues. I argue that public performance rights are desirable because they support fine-grained price discrimination and displace other forms of price discrimination that have greater social cost. I argue against a broad definition of the derivative right that includes movie merchandise. Movie merchandising usually imposes allocative and implementation costs with little offsetting benefit in terms of creative incentive. I show that personal copying and other activities possibly covered by fair use have mixed effects on price discrimination and social welfare. Finally, I argue that the importation right should not cover gray market goods and should not be used to facilitate geographic price discrimination.

Copyright Law and Price Discrimination

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I. INTRODUCTION

II. THE NATURE OF PRICE DISCRIMINATION IN MARKETS FOR COPYRIGHTED WORKS

- A. *First Degree Price Discrimination – A Benchmark*
- B. *Third Degree Price Discrimination – Observable Buyer Characteristics*
- C. *Second Degree Price Discrimination – Hidden Buyer Characteristics*
- D. *A Comparison of Second and Third Degree Price Discrimination*

III. THE EFFECTS OF COPYRIGHT LAW ON PRICE DISCRIMINATION

- A. *Copyright as a Source of Market Power*
- B. *Copyright and Resale*
- C. *Copyright and Personal Arbitrage*

IV. SOCIAL WELFARE ISSUES

- A. *Distribution of Surplus*
- B. *Efficiency*
 - 1. Incentives to Create Copyrighted Works
 - 2. Diffusion of Copyrighted Works
 - 3. Rent-Seeking

V. COPYRIGHT POLICY TOWARD PRICE DISCRIMINATION

VI. APPLICATIONS

- A. *Performance Right Licenses*
- B. *Tying, Merchandising, and Bundling*
- C. *Sharing Copyrighted Works*
- D. *The Importation Right and Gray Market Goods*

VII. CONCLUSION

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I. INTRODUCTION

In this Article I use economic models developed to analyze price discrimination and apply them to copyright law.¹ The price discrimination perspective helps me unify the analysis of seemingly unrelated copyright policy issues. Some of the issues I analyze include: (1) What is the proper scope of the public performance right? (2) Should a copyright owner be allowed to use the importation right to exclude gray market goods? (3) Should movie copyright owners have the exclusive right to make and merchandise goods based on movie characters? (4) Is systematic photocopying of scientific journal articles by a corporate library a fair use? And (5) should copyright law preempt a consumer use restriction included in a contract written by the producer of a digital database? My answers to all of these questions hinge on whether the price discrimination practiced by the copyright owner is socially desirable or undesirable.

Even though copyright law is intimately connected to price discrimination, copyright theorists neglected the subject until recently² because many discriminatory practices are hard to recognize. This problem is compounded because few copyright commentators are familiar with the broad-ranging treatment of price discrimination in microeconomic theory. The neglect also follows from the predominant, but mistaken belief that discrimination has mostly positive effects on social welfare. I work to integrate

¹ Some early work in this field by economists was neglected until recently. Demsetz wrote the first economic analysis of price discrimination and copyright law that was cited by law professors. *See generally* Harold Demsetz, *The Private Production of Public Goods*, 13 J. L. & ECON. 293 (1970). His article makes the general normative point that price discrimination may increase profit and allocative efficiency. Later Liebowitz noted the role of price discrimination in markets for academic journals, *see generally* Stanley J. Liebowitz, *Copyright Law, Photocopying, and Price Discrimination*, in 8 *Research in Law and Economics: The Economics of Patents and Copyrights* 181 (John Palmer & Richard O. Zerbe, Jr. eds., 1986), and Besen and Kirby discussed price discrimination by music performance rights societies, *see generally* Stanley M. Besen & Sheila N. Kirby, *Private Copying, Appropriability, and Optimal Copyright Royalties*, 32 J. LAW & ECON. 255 (1989). *Cf.* Louis Kaplow, *The Patent Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813 (1984) (price discrimination and patent law).

² The first authors to identify links between copyright doctrine and price discrimination were William W. Fisher, *Reconstructing the Fair Use Doctrine*, 101 HARV. L. REV. 1661 (1988) (hereinafter *Fisher Fair Use*) (the fair use doctrine and compulsory licensing may impede the practice of price discrimination); Stanley M. Besen, Sheila N. Kirby & Steven C. Salop, *An Economic Analysis of Copyright Collectives*, 78 VA. L. REV. 383 (1992) (discussion of price discrimination by performance rights organizations); and Glynn Lunney Jr., *Reexamining Copyright's Incentives-Access Paradigm*, 49 VAND. L. REV. 483, 630 (1996) (the adaptation right facilitates price discrimination). My article in 1997 was the first to note the wide range of copyright doctrines that facilitate or impede price discrimination. I argued that price discrimination was a crucial factor in evaluating the impact of copyright in the digital world. Michael J. Meurer, *Price Discrimination, Personal Use and Piracy: Copyright Protection of Digital Works*, 45 BUFF. L. REV. 845 (1997). Wendy Gordon went one step further. She observed that we could restate the basic free-rider problem in terms of price discrimination. Wendy Gordon, *Intellectual Property as Price Discrimination: Implications for Contract*, 73 CHI-KENT L. REV. 1367, 1369 (1998) (arguing that “all intellectual property law operates by fostering price discrimination.”) For other recent commentary on price discrimination and copyright see William W. Fisher, III, *Property And Contract On The Internet*, 73 CHI-KENT L. REV. 1203 (1998) (hereinafter *Fisher Internet*); Julie E. Cohen, *Copyright and the Perfect Curve*, 53 VAND. L. REV. 1799 (2000); James Boyle, *Cruel, Mean, or Lavish? Economic Analysis, Price Discrimination and Digital Economic Property*, 53 VAND. L. REV. 2007 (2000); Yochai Benkler, *An Unhurried View of Private Ordering in Information Transactions*, 53 VAND. L. REV. 2063 (2000).

microeconomic analysis of price discrimination into copyright analysis and show that: price discrimination is common in markets for copyrighted works; many features of copyright law facilitate or impede the practice of price discrimination; and price discrimination has significant negative as well as positive effects on social welfare.

Let me begin by defining price discrimination and citing two examples in markets for copyrighted works.³ A seller price discriminates by charging different prices to buyers when the price difference cannot be explained by a cost difference in supplying the copyrighted work. Given identical versions of a work that have identical production and distribution costs, any price difference amounts to price discrimination. A familiar example is a movie ticket price discount for senior citizens. Given two versions of works that are not identical, price discrimination occurs if the price difference between the versions exceeds the cost difference in making the versions. An example is the relatively high price of hardcover books. Publishers normally set a price difference between hardcover and paperback books that exceeds the cost difference in publishing the two formats.⁴

Although price discrimination is common in markets for copyrighted works,⁵ it is far from inevitable. Discrimination is not feasible unless three conditions are satisfied:

³ Price discrimination is difficult to define. The law offers an implicit definition through the operation of the Robinson-Patman Act which prohibits price discrimination (in some fairly limited circumstances). 15 U.S.C. §13. The Robinson-Patman definition generally conforms to the intuitive notion that price discounts to favored customers that are not justified by cost differentials constitute discrimination. But there is a clear mismatch between the economist's definition and the Robinson-Patman definition. See Jonathan B. Baker, *Product Differentiation through Space and Time: Some Antitrust Policy Issues*, 42 ANTITRUST BULL. 177, 180 n.5 (1997). Economists point out that sometimes charging a uniform price is discriminatory, (e.g., when delivery costs vary, a uniform delivered price discriminates in favor of distant customers) and that product quality or other differences between sales should be accounted for in the definition. A rough economic definition links price discrimination to differences in the mark-up of price over marginal cost across sales. See JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 133-34 (1988).

I am not interested in precisely how the label is used. Outside of the Robinson-Patman Act there is no legal significance to the characterization of certain conduct as price discrimination. I am interested in applying (sometimes quite dissimilar) economic models that are grouped together as price discrimination models to problems in copyright policy.

⁴ See Fisher *Fair Use*, *supra* note 2, at 1709, 1793 (soft and hard cover books implement price discrimination between eager and patient readers).

⁵ Price discrimination is widespread in the market for copyrighted works. Movie tickets, magazine and book prices, computer software prices, and music performance licenses are a few examples. Magazine subscribers pay much less than newsstand buyers. Movie theaters offer cheaper tickets for daylight or mid-week showings. Software is sold at a discount to students and educators. Establishments offering public music performances pay widely varying fees for identical blanket licenses. See Fisher *Fair Use*, *supra* note 2, at 1788 (price discrimination in movie market); Edwin Baker, *Giving the Audience What It Wants*, 58 OHIO STATE L. J. 311, 325 (1997) (describes media firms ability to price discriminate in the sale of books, magazines, and movies); TIROLE, *supra* note 2 at 73 (discussing price discrimination over time in book and movie market); Stanley Besen & Leo Raskind, *An Introduction to the Law and Economics of Intellectual Property*, 5 J. ECON. PERSPECTIVES 3 (1991) (price discrimination occurs when journals charged different rates to institutions and individuals, through computer site licenses, and because of soft and hard cover books); Gordon, *supra* note 2, at 1375-77 (raising and dismissing arguments that the price discrimination label should not be applied to copyright dependent markets).

(1) the seller has market power; (2) the seller can somehow link prices to individual customers' preferences; and (3) customers cannot arbitrage away price differentials.⁶ Market power is required because otherwise the disfavored customers of a price discriminator would find another supplier who would offer a better deal. Assuming market power, a price discriminator needs information about individual demand so that prices and product features can be tailored to maximize the return from different customer classes. Market power and information are not enough. It must also be unprofitable for favored customers to arbitrage away price differentials by reselling to disfavored customers. In most markets, price discrimination is either infeasible or feasible only to a limited degree since these requirements are not fully met.

Copyright law is a key factor affecting the feasibility and profitability of price discrimination in markets for copyrighted works.⁷ The best way to understand the relationship between copyright and price discrimination is to start with the observation that the copyright owner is given rights against three different groups: competing producers, distributors, and users. Each of these groups plays a role in my analysis of copyright and price discrimination. Competing producers can disrupt price discrimination by attracting customers who otherwise must pay a high discriminatory price to the copyright owner. Distributors can disrupt price discrimination by acting as intermediaries in the arbitrage process. Users can disrupt price discrimination by disguising their preferences or looking for opportunities for arbitrage.

The market power of the copyright owner reins in competing producers who might undermine discriminatory prices. Copyright creates market power by precluding unauthorized copying of the expressive elements of a copyrighted work.⁸ That market

Price discrimination may be even more common in markets for digital copyrighted works. See Meurer, *supra* note 2, at 876-880; CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 53-81 (1999). Amazon.com and other online retailers reportedly link price discounts to certain characteristics contained in digital buyer profiles. See Jill Morneau, *Dynamic Pricing: Who Really Wins?* CMP TECHWEB, (September 29, 2000); Michael J. Martinez, *Pricing Errors Hurting Amazon.com*, AP ONLINE, (September 28, 2000); Martin Stone, *Amazon.com Calls Price Test 'A Mistake'*, NEWSBYTES NEWS NETWORK, (September 28, 2000).

⁶ See generally TIROLE, *supra* note 2, at 133-52 (describing conditions for effective price discrimination).

⁷ The seller of a copyrighted work looks to copyright law, contract law, and antitrust law in deciding whether to price discriminate. Antitrust is less important than copyright and contract law in terms of influence on price discrimination. The central antitrust provision related to price discrimination is the Robinson-Patman Act. The Robinson-Patman Act outlaws price discrimination in certain cases, but "it will not apply to just those cases in which systematic price discrimination is most likely to exist and to have potent economic effects." MILTON HANDLER, *et al.*, TRADE REGULATION: CASES AND MATERIALS 1222 (4th ed. 1997). The courts have been reluctant to apply the Robinson-Patman Act rigorously. Fisher explains that they find the law "economically senseless." See Fisher *Internet*, *supra* note 2 at 1254-55. Three important limitations are: it applies only to physical commodities; it applies to sales but not leases; and it does not cover discrimination involving quality variations. *Id.* at 1222, 1229. Outside of the Robinson-Patman Act, the few antitrust cases involving intellectual property and price discrimination do not have much bite. In *BMI v. CBS*, 441 U.S. 1 (1979), the Court allowed BMI to discriminate in the blanket licensing of musical compositions. Discrimination was implemented by charging a royalty that varied with a buyer's revenues. See HERBERT HOVENKAMP, *ECONOMICS AND FEDERAL ANTITRUST LAW* 123 (1985).

⁸ Wendy Gordon observes that a copyright owner might license rather than exclude a competing producer. See Gordon *supra* note 2, at 1370.

power is limited though, because competing producers are free to copy the functional elements of a work.⁹ Market power is further limited because entry barriers are usually low in markets for copyrighted works. In the language of economics, these markets exhibit monopolistic competition. Monopolistic competition exists when entry barriers are low and producers sell differentiated products that are imperfect substitutes. A mistaken impression that lingers in the economic analysis of the law holds that price discrimination requires substantial market power – near monopoly power. In fact, recent economic theory and evidence shows that monopolistic competition is sufficient to support price discrimination.

Copyright has mixed effects on a distributor playing the role of arbitrageur. The law could make arbitrage difficult by blocking unauthorized distribution of works. In fact, the first sale doctrine grants a distributor who acquires authorized copies the freedom to lend or resell those copies.¹⁰ That freedom is constrained by legislation that prohibits unauthorized rental of software and music.¹¹ Imports are another category in which distribution is affected by legislation.¹² The Supreme Court recently decided against a copyright owner who tried to use importation rights to block arbitrage against international price discrimination.¹³

The allocation of rights under copyright between producers and users is complicated, but the relationship between rights and price discrimination is simple – broad users rights impede price discrimination.¹⁴ Compulsory licenses and fair use are two doctrines that contribute to broad user rights and create obvious obstacles to price discrimination. Compulsory licensing is inconsistent with price discrimination because it strips authority over pricing from the copyright owner.¹⁵ Fair use is a multi-faceted doctrine that obstructs price discrimination in a variety of ways.¹⁶ The royalty-free copying privilege bestowed on certain uses by certain kinds of users is the most obvious way. Fair use impedes price discrimination in other ways that I will discuss below in Part III.

Various features of copyright law restrict the types of use or quantitative aspects of the use of copyrighted works. One example is the public performance right.¹⁷ The copyright owner can stop unauthorized public performance of a musical composition. A record company can price discriminate in the sale of music CDs between home users and bar and restaurant owners. The performance right makes it easier to identify the high

⁹ See 17 U.S.C.A. § 102(b) (West 1998).

¹⁰ See generally 17 U.S.C.A. § 109 (West 1998).

¹¹ See 17 U.S.C.A. § 109(b) (West 1998).

¹² See 17 U.S.C.A. §§ 601-603 (West 1998).

¹³ See *Quality King Distributors, Inc. v. L'anza Research International, Inc.*, 118 S.Ct. 1125 (1998).

¹⁴ In other words, narrow copyright protection raises implementation costs and deters some marginally profitable price discrimination. Conversely, broader protection reduces implementation costs and promotes marginal discrimination. In addition, the law indirectly affects the magnitude of price differentials and the style of discrimination by directly affecting implementation costs.

¹⁵ See 17 U.S.C.A. § 115 (West 1998)

¹⁶ See 17 U.S.C.A. § 107 (West 1998)

¹⁷ See 17 U.S.C.A. §§ 106, 110 (West 1998).

value users (who intend to play the CD in public), and charge them a higher price. I will provide many other examples in Part III.

Instead of price discrimination, economics-minded analysts of copyright law currently rely on three other perspectives: foremost is the public goods perspective; the others are the cumulative creation perspective; and the transaction cost perspective. According to the public goods perspective, copyright is essential to assure that the work of authors is protected from appropriation by free-riders. The key insight from this perspective is that copyright law must trade-off the incentive to create and publish against the goal of broad access to copyrighted works.¹⁸ According to the cumulative creation perspective, creators of copyrighted works usually build on earlier expressive works. Copyright law should respond to this perspective by balancing the incentive to early creators against the need to provide incentives to later creators.¹⁹ According to the transaction cost perspective, copyright law should strive to clearly define property rights to facilitate transactions between various copyright owners, and between authors and publishers as they cooperate in bringing copyrighted works to the market.²⁰

These three perspectives on copyright are helpful in explaining the complex pattern of rights allocated by the copyright statute and case law, but they cannot explain certain features of copyright law, and give an incomplete understanding of many others. The various perspectives have limited domains in which they are relevant. Some copyrighted works are relatively immune from appropriation by free-riders. Some works

¹⁸ See *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975); *Sony Corp. of Amer. v. Universal Studios, Inc.*, 464 U.S. 417, 429 (1984). See generally Wendy Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors*, 82 COLUM. L. REV. 1600 (1982).

¹⁹ See generally William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325 (1989); Mark Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989 (1997); Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutory Impulse*, 78 VA. L. REV. 149, 223-24, 230-38 (1992). Cf. Susan Scotchmer, *Standing on the Shoulders of Giants: Cumulative Research and Patent Law*, 84 UCLA L. REV. 1293 (1996).

²⁰ The third perspective is an application of the Coase Theorem. It holds that one purpose of copyright law is to establish enforceable and clearly defined entitlements so that authors and publishers can coordinate their efforts to supply copyrightable works. The law specifies the term and scope of property rights and the allocation of rights between joint authors, and between employers and employees. Given some pattern of entitlements, the Coase Theorem states that when transaction costs are low the parties will bargain for contracts that efficiently organize the supply of copyrightable works. Given Coasean bargains, the precise assignment of entitlements becomes a matter of wealth distribution. See generally R.H. Coase, *The Problem of Social Cost*, 3 J.L. & Econ. 1 (1960); Rochelle Cooper Dreyfuss, *Collaborative Research: Conflicts on Authorship, Ownership, and Accountability*, 53 Vand. L. Rev. 1162, 1169-1182 (2000).

The Coasean perspective can be extended to apply to the relationship between publishers and users. In contrast to bargains between publishers and authors, bargains between publishers and users are likely to be afflicted by significant transaction costs. High transaction costs arise for various reasons including: the high number of parties; the difficulty identifying potential users; and informational problems. With low transaction costs the allocation of rights does not affect efficiency; given high transaction costs Coase recommends that rights be given to the party that would get them given a hypothetical bargain in a low transaction cost environment. See generally Ejan Mackaay, *Economic Incentives in Markets for Information and Innovation*, 13 HARV. J.L. & PUB. POL'Y 867 (1990); Ejan Mackaay, *Legal Hybrids: Beyond Property and Monopoly?*, 94 COLUM. L. REV. 2630 (1994).

do not generate any derivative works. And for some works property rights are relatively easy to define. The copyrighted work at issue in *Quality King Distributors, Inc. v. L'anza Research Int'l, Inc.*²¹ appears to fall outside of the domain of any of these perspectives.

The work at issue was the label on L'anza shampoo bottles. L'anza sold the product at a relatively high price in the U.S. and a relatively low price abroad. A retailer in California was able to undercut authorized distributors by getting a cheaper supply of L'anza shampoo by purchasing abroad. L'anza challenged the importation of shampoo that was intended for foreign markets. The legal question was whether the copyright owner's exercise of its importation right could withstand the application of the first sale doctrine.²² The first sale doctrine grants purchasers the right to resell authorized copies of a copyrighted work. The Supreme Court resolved a conflict between the circuits and held that importation of the copyrighted label (not to mention the shampoo) was allowed under the first sale doctrine.²³

This case is problematic for the standard economic perspectives on copyright.²⁴ Product labels defy analysis in terms of free-riding. In the absence of copyright protection no rival would pounce on the opportunity to copy and distribute the shampoo bottle labels.²⁵ Similarly, authors and artists have little interest in making derivative works based on a label.²⁶ Finally, it is hard to think of any significant transaction costs that might debilitate the market for labels. Although the other perspectives fail, the price discrimination perspective is clearly useful for understanding the function of copyright in this case. I will explain below that L'anza's goal was to practice geographic price discrimination. It is fairly obvious that the holding in *Quality King* will make discrimination harder because the decision removes one of the barriers to arbitrage.

The sparse commentary on price discrimination is surprising given the value of this perspective in analyzing copyright policy. I think there are two reasons the topic is under-analyzed. Until recently, copyright scholars failed to link specific copyright doctrines to the practice of price discrimination,²⁷ and when they have noticed price

²¹ 118 S.Ct. 1125 (1998).

²² *See id.* at 1129-30.

²³ *See id.* at 1133-34.

²⁴ The public choice perspective is often useful for analyzing international trade problems. According to the public choice perspective, powerful interest groups influence legislation. Legislators pass copyright statutes that benefit groups like the movie and music industries regardless of whether they benefit the public.

²⁵ L'Anza did not need the copyright incentive to produce its labels. The Supreme Court oral arguments revealed the sentiment of Justice Scalia on this matter. *See* Linda Greenhouse, *High Court Weighs 'Gray Market' Legality*, NEW YORK TIMES, C9, (Dec. 9, 1997). ("When [the Deputy Solicitor General] observed that the purpose of copyright law was to protect the 'incentive to create,' Justice Antonin Scalia interjected, 'We're talking about shampoo here!'")

²⁶ Save Andy Warhol.

²⁷ On the whole, commentary on price discrimination in markets for copyrighted works suffers several shortcomings. First, most commentary is abstract and diffuse; it is not applied to evaluate cases or statutory provisions. Second, it is usually couched in terms of third degree price discrimination even though second degree price discrimination is probably more common. (I will define these terms soon.) And third, many insights from information economics have gone completely unnoticed. For examples of work that does link

discrimination they tend to share a rosy view of its effect on social welfare. Since there has been little controversy about social welfare effects, there has been little commentary.

The generally positive view of the social welfare effects of price discrimination contrasts with heated debate over the social welfare effects of expanded copyright protection. Paul Goldstein divides copyright analysts into two camps: copyright optimists and copyright pessimists.²⁸ Optimists believe a producer is entitled to capture the entire economic benefit that flows from a copyrighted work. They favor broad producer rights as an incentive to create works of authorship. Pessimists believe the author's reward should be limited to the smallest amount adequate to stimulate creation of a work.²⁹ They worry that broad producer rights unduly limit access to works. Until very recently a similar divide was missing from analysis of price discrimination in copyright dependent industries.³⁰ Copyright optimists are optimistic about the social value of price discrimination because it allows copyright owners to appropriate more of the value associated with a copyrighted work. One might expect that copyright pessimists would be skeptical of the social value of price discrimination, but many are actually price discrimination optimists.³¹ For example, Terry Fisher approves of price discrimination because it increases access to copyrighted works,³² and because the extra profit from price discrimination can be used to justify withdrawing certain aspects of copyright protection to promote public interest activities.³³ In this Article I take a more skeptical

specific copyright doctrines to price discrimination *see* Fisher *Fair Use*, *supra* note 2, at 1709-10, 1742 (fair use); Lunney *supra* note 2 at 630 (adaptation right); Meurer, *supra* note 2 at 850-51 (reproduction right, fair use, first sale, preemption of contract terms); Fisher *Internet*, *supra* note 2, at 1241 (first sale); Gordon, *supra* note 2, at 1387, 1389 (reproduction right, first sale).

²⁸ See PAUL GOLDSTEIN, *COPYRIGHT'S HIGHWAY* 15-17 (1994).

²⁹ More precisely, an optimist believes that expanded copyright protection creates enough social benefit in the form of increased quality and quantity of expressive works to more than offset any increase in social cost from reduced diffusion of works. A pessimist believes the opposite.

³⁰ Beside myself, Professors Benkler, Boyle, Cohen and Gordon have expressed skepticism about the social value of price discrimination in copyright dependent industries. Citations are gathered *supra* in note 2. Wendy Gordon's dissent from the standard view is especially striking. She provokes a reassessment of the public goods perspective by claiming that "all intellectual property law operates by fostering price discrimination." *See* Gordon, *supra* note 2, at 1369. What she means is that the public goods perspective on the basic free-rider problem can be recast in terms of price discrimination. She observes that end users of a copyrighted work cannot reproduce the work without special permission, and if they want that permission they have to pay extra for it. In other words, copyright law facilitates price discrimination against potential free-riders. *See id.*, at 1370-75 (copyright and patent allow creators to charge different prices to end-users and copyists). Though I appreciate Gordon's point my goal in this Article is to emphasize the insights from the price discrimination perspective that are missing from copyright analysis that is dominated by the public goods perspective. Most of those insights pertain to consumer markets or other end-use markets. Thus, I have little to say about the free-rider problem.

³¹ *See e.g.*, Fisher *Internet*, *supra* note 2, at 1239-40 (price discrimination may have a beneficial effect on social welfare); J.H. Reichman and Jonathan A. Franklin, *Privately Legislated Intellectual Property Rights: Reconciling Freedom Of Contract With Public Good Uses Of Information*, 147 U. PA. L. REV. 875, 918 (1999). "If the panel reached the right result on the facts put forward in ProCD, as we think it did, it is because the contractual modalities at issue favored procompetitive forms of product differentiation and price discrimination that made the licensor's end-use restrictions and access restrictions appear reasonable."

³² *See* Fisher *Internet*, *supra* note 2, at 1239-40 (price discrimination increases access for poor consumers).

³³ *See id.*, at 1250-52 (larger profits attributable to price discrimination can be used to subsidize privileged uses through broad application of fair use).

view of the social value of price discrimination. I do believe that price discrimination may be desirable and in some cases copyright law should promote it, but there are other cases when price discrimination is undesirable and copyright law should discourage it.

My normative analysis of copyright law and price discrimination begins in Part IV with a description of the potential efficiency costs and benefits and distributional consequences of discrimination.³⁴ I evaluate specific cases and statutory provisions in Parts V and VI and provide answers to the questions at the beginning of the Article. Here is a preview of my answers. (1) The public performance right should have a fairly broad scope because it facilitates a desirable form of price discrimination that is likely to increase output. Furthermore, music and movie copyright owners would switch to a less efficient form of price discrimination absent the public performance right. (2) The importation right should not be used to control gray market goods and facilitate geographic price discrimination. This type of discrimination transfers wealth from American consumers to American producers while imposing significant implementation costs. I doubt these implementation costs are offset by social benefits flowing from output expansion or productive incentive. (3) The derivative right should be narrowed to exclude movie merchandise. Movie merchandising probably imposes allocative and implementation costs with little offsetting benefit in terms of creative incentive. (4) I am unable to decide whether systematic photocopying of scientific journal articles by a corporate should be a fair use. Finally, (5) I favor copyright preemption of consumer use restrictions applied to uncopyrightable database contracts, but I am unsure about the desirability of consumer use restrictions in copyright licenses.

II. THE NATURE OF PRICE DISCRIMINATION IN MARKETS FOR COPYRIGHTED WORKS

One problem with current discussion of price discrimination and copyright is the failure to appreciate the different methods of price discrimination. There are varied and subtle methods used by price discriminators to block arbitrage and measure preferences.³⁵ The failure to recognize price discrimination in all of its guises blinds commentators to

³⁴ The most basic problem is that price discrimination might cause output of a copyrighted work to fall. Even when output rises that is not sufficient to guarantee an increase in total surplus. A second problem is that the larger productive incentive provided by price discrimination is not necessarily desirable. The current incentive is probably too large—at least in certain categories of works. Large incentives in copyright dependent industries may lead to socially premature or duplicative investments and distorted product design choices. Price discrimination makes the problems worse by increasing incentives. A third set of efficiency problems falls under the rubric of rent-seeking costs. Price discrimination increases rents to firms. This generates costs as firms with dominant market positions make investments in lobbying, entry barriers, and litigation to preserve those rents. Price discrimination also leads to implementation costs associated with selling and enforcing price differentials. Specifically, a seller may invest in technology to monitor consumer behavior, use resources to enforce rights that limit arbitrage, and degrade product quality to make price discrimination more profitable.

³⁵ Price discrimination can be achieved by bundling or tying products, or simply through the exclusive rights to sell complementary products. I will discuss below how such price discrimination works, and how the derivative right, the fair use doctrine, the fixation requirement, the copyright misuse doctrine, and antitrust law all influence these marketing practices.

the many connections between copyright and discrimination. More importantly, this failure impairs the ability of commentators to draw appropriate normative conclusions regarding the social welfare effects of price discrimination. In this part of the article I will describe and categorize methods of price discrimination.

Economists use a three-way classification scheme for price discrimination depending on how preferences are measured.³⁶ In third degree price discrimination price differentials are tied to a characteristic of a buyer that is correlated with the buyer's valuation.³⁷ Movie exhibitors offer senior discounts and thereby use the age of the buyer to discriminate.³⁸ They assume that senior citizens have a weaker demand than other buyers do. Discrimination is still possible when the seller cannot observe a buyer's characteristics. In second degree price discrimination, price differentials are tied to choices by the buyer. The pattern of discrimination reflects the seller's belief that a certain choice will be made by a low valuation buyer and a different choice will be made by a high valuation buyer.³⁹ For example, movie exhibitors offer a discount for Tuesday movies to sort between movie patrons who are flexible about when they see a movie and those who are not. This hidden characteristic of flexibility is supposedly correlated with less intense demand for movies. In first degree price discrimination the seller knows or learns the exact valuation of all buyers. This of course is an idealized benchmark.

A. First Degree Price Discrimination – A Benchmark

In the idealized case of perfect (or first degree) price discrimination the seller can block arbitrage⁴⁰ and transact at a different price with each buyer. The seller also knows every buyer's valuation. The profit maximizing pricing strategy is to charge every buyer his or her valuation as long as the valuation exceeds marginal cost.⁴¹

Let me illustrate. Suppose that a seller offers a unique software product to business. The seller knows that the five potential buyers labeled V, W, X, Y, and Z have total valuations of 6, 2, 10, 8, and 4 for the product. The buyer valuations are listed in Table One. The table has some details that will be relevant to later discussion. Each

³⁶ See TIROLE, *supra* note 2, at 135 (three way scheme for classifying)

³⁷ Third degree price discrimination does not always depend on immutable characteristics like age. It can also depend on buyer attributes that cannot be changed easily. Textbook publishers discriminate between college and other bookstores. Movie distributors discriminate based on the size and location of a theater. These attributes reflect past choices of buyers that will not be altered just to avoid price discrimination.

³⁸ In the Buffalo area the Regal Cinemas charge senior citizens \$4.50 for an evening show compared to \$6.75 for most other patrons.

³⁹ Judge Easterbrook gives an example in ProCD: "An air carrier sells tickets for less to vacationers than to business travelers, using advance purchase and Saturday-night-stay requirements to distinguish the categories." Pro-CD, Inc. v. Zeidenberg, 86 F.3d 1447, 1450 (7th Cir. 1996).

⁴⁰ The profitability of resale may be blocked by a variety of exogenous factors. Transportation cost is a factor that supports geographic price discrimination for some products. For low value products the transaction costs of arbitrage may exceed the profit to resellers. Arbitrage of services is often physically difficult or impossible. Finally, if the seller can identify the resale activity, then it can stop making sales to the arbitrageur.

⁴¹ The seller should also arrange the buyers in order of valuation and serve all of the buyers with valuations above marginal cost.

buyer wants only one copy of the software. These valuations equal the cost savings to the businesses from using the software. The cost to the seller of distributing the software is 1 for each sale.⁴² Perfect price discrimination results in the sale of 5 units for a profit of 25.⁴³

Table One

	Group L		Group H		
Buyer	V	W	X	Y	Z
Task a	5	1	5	4	2
Task b	1	1	5	4	2
Total	6	2	10	8	4

If the seller charges a uniform price because price discrimination is not feasible, then the profit maximizing uniform price is 6. Profit is 15 and 3 units are sold. Both profit and total sales are higher under perfect price discrimination. Notably, any method of price discrimination is always profitable compared to uniform pricing because at worst, the seller can just replicate the profit maximizing uniform price, and usually the seller can find a more profitable pricing scheme. Furthermore, perfect price discrimination always yields sales that are at least as high as uniform pricing; the same is not true of imperfect forms of price discrimination.

Perfect price discrimination has two striking normative implications. First, it maximizes total surplus. In the example, the five buyers get a combined benefit of 30 at a distribution cost of 5; the difference of 25 is the total surplus. This is the same total surplus that would be achieved in a competitive market.⁴⁴ In contrast, uniform pricing gives a total surplus of $10 + 8 + 6 - 3 = 21$. Second, perfect price discrimination distributes the entire surplus to the seller, competition distributes the entire surplus to buyers, and uniform pricing divides the surplus between the parties.⁴⁵

B. Third Degree Price Discrimination – Observable Buyer Characteristics

Let me continue the software example to illustrate the operation of third degree price discrimination. As displayed in Table One, assume that buyers X, Y, and Z are in group H, and buyers V and W are in group L. If the seller can observe a buyer's group, then he can practice third degree price discrimination. The optimal price for group H is 8, and the optimal price for group L is 6. Three units are sold and the resulting profit of 19 is between the uniform pricing profit of 15 and the perfect price discrimination profit of 25.

⁴² The cost of making the software in first place is not relevant to the pricing decision as long as it is low enough so that the seller can make a profit. Here I assume that cost is zero.

⁴³ The total distribution cost is 5 and the total revenue is $30 = 10+8+6+4+2$.

⁴⁴ Competition yields the sale of 5 units at a competitive price equal to the marginal cost of 1. Total surplus depends on the quantity and not the price — so total surplus is again equal to 25.

⁴⁵ Despite the inefficiency, consumers are better off under a uniform price monopoly than perfect price discrimination.

In this example, price discrimination is effective because membership in group H is correlated with a relatively high valuation for the software. The optimal strategy is to charge a high price to members of group H, and favor group L with a lower price. The output and total surplus from third degree price discrimination in this example is the same as that for uniform pricing. In general, output and total surplus can be higher or lower with third degree price discrimination.⁴⁶

Examples of third degree price discrimination abound in copyright dependent industries. Senior citizen and student discounts are common for musical, theatrical, and movie performances. Many publishers offer software at a discount to students and other academic users.⁴⁷ Sometimes price discrimination is directed at retailers rather than consumers. Book publishers charge higher prices to college bookstores than to other bookstores.⁴⁸ Movie distributors discriminate against movie exhibitors in good locations with large capacities.⁴⁹ The same pattern is evident in the license fees charged for music performance rights to bars and nightclubs.

The price discrimination by L'anza that is described in *Quality King*⁵⁰ is an instance of third degree discrimination. The seller observed where the buyer was located: inside or outside America. The price charged to foreign buyers was discounted 35-40% compared to domestic buyers because L'anza believed that domestic buyers had a higher valuation for the product than foreign buyers.⁵¹ The market power required for price discrimination was based on investments made by L'anza to differentiate its product from other shampoos. In most cases that I will discuss below copyright is a source of market power. In this case, however, the copyright protection of L'anza's labels is a trivial source of market power. Instead, trademark is the intellectual property right that sustains L'anza's goodwill and market power. Since transportation costs for hair care products are fairly low, L'anza needed other means to stop arbitrage. In light of the Third Circuit case,

⁴⁶ Consider an example in which third degree price discrimination increases output. If the buyers with valuations of 10, 8, and 6 are in industry A, and the other two buyers are in industry B, then a price of 6 is charged to members of industry A, and a price of 4 is charged to members of industry B. In this case profit is 18 and output is 4.

⁴⁷ For example, Microsoft offers their products to students and educational institutions at a discounted rate with no change in the product or the product's functionality. (Compare Microsoft estimated retail pricing of \$339.00 per unit for Word 2000 to the estimated academic pricing at \$89.45) (Microsoft data gathered on 10/09/1999 from <<http://www.microsoft.com/catalog/display.asp?list=2&subid=22>>) In addition to Microsoft, other software publishers such as Corel, Apple & Adobe also provide "academic" pricing to students and educational institutions based on a model similar to the one used by Microsoft."

⁴⁸ The motivation is that the student customers of college bookstores have a fairly inelastic demand for required course books.

⁴⁹ Before television, there was enormous heterogeneity among movie exhibitors: ranging from luxurious movie palaces to sheds with benches. The different movie houses were classified as first-run, second-run, third-run, and even fourth- and fifth-run houses. Movie distributors used a multi-tiered price discrimination scheme.

⁵⁰ 118 S.Ct. 1125 (1998).

⁵¹ L'anza marketed its products as high quality and distributed exclusively through hair stylists in the United States. It did not advertise abroad, and discounted the price to foreign distributors by 35-40% compared to domestic distributors.

Sebastian Int'l Inc. v. Consumer Contacts (PTY) Ltd., L'anza had good reason to believe that copyright law could be used to control unauthorized importation.⁵² To the disappointment of L'anza and the business groups that filed amicus briefs⁵³ in its behalf the Supreme Court did not block the imports.⁵⁴

C. Second Degree Price Discrimination – Hidden Buyer Characteristics

The final variation on the software example illustrates second degree price discrimination. In addition to the previous assumptions, I now suppose that the software is used for two tasks that I denote *a* and *b*. In group H, the buyers derive equal value from each task.⁵⁵ In group L, the buyers derive one unit of value from task *b* and the remaining value from task *a*.⁵⁶ The information is presented in Table One. I assume third degree price discrimination is not possible,⁵⁷ and consider second degree price discrimination. The seller charges a price of 5 for software with a contractual restriction that precludes the buyer from performing task *b*. The seller charges 8 for software that is free from this contractual restriction.⁵⁸ Given these prices, buyers X and Y choose the unrestricted software, and buyer V chooses the restricted software. The resulting profit of 18 is less than the profit from third degree price discrimination but still greater than uniform pricing.

In this example, price discrimination is less efficient than uniform pricing. Both types of pricing result in three units sold, but second degree price discrimination yields less total surplus. The difference is attributable to the contract restriction. Buyer V, who purchases the software subject to the use restriction, gets a benefit of 5 rather than 6. Total surplus is only $20 = 10 + 8 + 5 - 3$ rather than the surplus of 21 from uniform pricing. I defer the main discussion of efficiency to Part IV where I explain that second degree price discrimination may also be more efficient than uniform pricing.

I now move to a more detailed description of second degree price discrimination. I will explain how sellers measure preferences, how they stop arbitrage, and how they set

⁵² See *Quality King* 118 S.Ct. at 1128; see also *Sebastian International, Inc. v. Consumer Contacts (PTY) Ltd.*, 847 F.2d 1093, 1098-99 (3d Cir. 1988).

⁵³ See *Quality King* 118 S.Ct. at 1125. (Amicus Brief in support of the respondent for The National Consumers League, The National Association of Manufacturers, The Cosmetic, Toiletry, and Fragrance Association, The Nonprescription Drug Manufacturers Association, and The Coalition to Preserve the Integrity of American Trademarks, 1997 WL 588898 (1997), and Amicus Brief in support of the respondent for The Recording Industry Association of America, The Motion Picture Association of America, The Association of American Publishers, American Film Marketing Association, Business Software Alliance, The Interactive Digital Software Association, National Music Publisher Association, and International Intellectual Property Alliance, 1997 WL 588827 (1997)).

⁵⁴ See *id.*

⁵⁵ In other words, the valuation of 10 is the sum of 5 from task *a* and 5 from task *b*. Similarly, $8 = 4 + 4$, and $4 = 2 + 2$.

⁵⁶ The buyer with the valuation of 6 gets 5 units of value from task *a* and 1 from task *b*, and the other buyer in industry gets 1 from both tasks for a total valuation of 2.

⁵⁷ Perhaps the seller cannot observe a buyer's industry or cannot stop resale.

⁵⁸ Maureen O'Rourke, *Drawing the Boundary Between Copyright and Contract: Copyright Preemption of Software License Terms*, 45 DUKE L.J. 479, 533 (1995)

prices. Sellers measure preferences by observing buyers' choices. The seller controls what choices are available to buyers by selecting product attributes. Economists use the term product differentiation to describe this marketing strategy. A clever seller differentiates a product in terms of an attribute that partitions buyers into high value and low value segments. For example, if all high value customers are eager to get a product quickly, and all low value buyers are indifferent to the delivery date, then the delivery date is the right attribute to use for product differentiation. Discrimination is implemented by charging a high price for early delivery and a low price for later delivery.

The possibilities for arbitrage depend on how second degree price discrimination is implemented — in other words, how products are differentiated. If delivery dates are used, then arbitrage is impossible. A favored buyer who purchases at a later date at a lower price cannot go back in time to arbitrage. If a contractual restriction is used to price discriminate, then arbitrage is possible. In the software example, buyer V might violate the restriction by using the software for both tasks. Alternatively, she might resell it to buyers X or Y who would use it for both tasks. The seller would prohibit resale in the contract, and try to enforce both the use and resale restriction to discourage arbitrage.

Pricing is complicated in second degree price discrimination. The first principle is that prices respond to marginal cost. If the product with the more attractive attributes is more costly, then its price should be higher. This relationship between price and marginal cost applies whether or not a seller price discriminates. The second principle is that market power allows a seller to mark-up price above marginal cost. A price discriminating seller is especially interested in marking-up the price to the high valuation segment of the market. The third principle is that prices are subject to a *sorting constraint*. If a seller is too aggressive and chooses a mark-up that is too large for the more attractive product, then high valuation buyers will switch to the other product. The sorting constraint keeps the difference between the two prices small enough so buyers will *sort* themselves. The second and third principles conflict. The profitability of second degree price discrimination is limited because the sorting condition limits the mark-up that can be levied against the high valuation buyers.

In markets for copyrighted works price discriminating sellers differentiate their products in terms of the following attributes: delivery date, quality, quantity, and contractual restrictions. The delivery date is used for movies and books. A movie viewer can choose between a first-run or second-run showing in the theater, or pay-per-view, premium cable, free cable, free broadcast, or videotape presentation on television. The price of these choices usually declines with the viewing date. Similarly, the price of novels declines over time. Eager readers pay a higher price for hard cover books, and more patient readers wait for the later publication of the cheaper soft cover version. For both movies and novels there are quality as well as timing differences that roughly correspond with the price and release date. Viewing quality is higher in a theater than on television, and first-run theaters are usually more pleasant than second-run theaters. Pay-per-view, premium cable, and videotapes do not have commercials. Hard cover books are more durable, more attractive, and have larger print.

Quality, quantity, and contractual restrictions are all important factors in software price discrimination. First, consider quality. Software publishers often discriminate between academic and non-academic users.⁵⁹ The educational version of some software is lower quality than the standard version. Software publishers disable features of the standard version and sell the degraded software as a lower priced educational version.⁶⁰ Another partition that supports price discrimination is between users of personal computers with the Windows operating system and users of more powerful computers that rely on a different operating system like Unix.⁶¹ In a sense, the Unix version of an application program is higher quality because it runs faster or handles more data than the personal computer version.⁶² Even if the cost of the two versions is about the same, a seller with market power would impose a higher price for the Unix version, because those users are likely to have a higher valuation.

Quantity discounts often reflect some kind of manufacturing or distribution cost saving, but in the markets for copyrighted works they are likely to reflect price discrimination.⁶³ Such discounts are common in software markets.⁶⁴ Software site licenses often provide discounted royalties as the number of networked machines or users grows.⁶⁵ On-line databases also offer discounts based on number of users as well as

⁵⁹ See *supra* note x.

⁶⁰ Also, software publishers offer “light” versions of software that come bundled with new computers and full versions that consumers may choose as a later upgrade. Intuit released a product known as Quicken® LT that has many functions of the full version of Quicken® disabled.

⁶¹ Compare Corel WordPerfect® 8 for UNIX at \$495.00 (<<http://www.corel.com/wpunix/price.htm>>, October 11, 1999.) to Corel WordPerfect® Suite 8 for Windows95® at \$395.00 (<http://www.corel.com/products/wordperfect/cwps8/pricing_upgrades.htm>, October 11, 1999.). Corel charges a higher price for the UNIX version of the program than it does for the Windows95® version even though both products have similar features with respect to WordPerfect® 8. (Note that some features available on the Windows95® version could not be accommodated on a UNIX operating system.)

⁶² Operating systems such as UNIX provide greater efficiencies than those such as Windows® when dealing with large volumes of data. These greater operating efficiencies may be translated into higher quality based on the time it would take the same program to process the same data in a UNIX environment as compared to a Windows® environment. (i.e. SAS® for Windows®, although a powerful statistical program, is limited in its calculation abilities and speed by the Windows® operating system. SAS® for UNIX is generally considered more powerful and in some cases of higher quality because the UNIX operating system has fewer limitations.)

⁶³ Sellers link price discrimination with large quantity purchases because marginal utility declines as quantity grows. This simply means that the incremental benefit from each additional purchase is less than the previous purchase. Alternatively, large buyers may hold a credible threat of upstream integration by creating their own software or purchasing custom-made software.

⁶⁴ There are many other examples of quantity based price discrimination for copyrighted works. Music performance licenses use factors like the number of square feet in a bar or store, or the size of the audience for a radio or TV station to set quantity-based royalties. Magazine and newspaper subscriptions feature quantity discounts. An interesting new form of quantity based pricing is made possible by DVD technology. A version of DVD movies are being sold in a format called Divx. Buyers are allowed a limited number of plays before the disk becomes unviewable. Buyers can pay for a code that allows additional viewing of the disk. Similar techniques can be used for computer games and other software.

⁶⁵ Microsoft offers open licensing which allows an organization to pay a lower price per user based on the total number of users in an organization or within a company. (See <<http://www.microsoft.com/office/order/license.htm>>, October 11, 1999). In addition “enterprise” licenses

discounts based on usage by a particular user.⁶⁶ For some quantity discounts, an arbitrage danger arises because a buyer might buy a larger quantity than she uses personally. She could resell to small quantity purchasers who otherwise would pay a higher price. Sellers include restrictions on resale to discourage this kind of arbitrage.

Generally, contractual restrictions that support price discrimination are common in software licenses. Many buyers accept a restriction to consumer, educational, or non-profit use in return for a lower price.⁶⁷ Use restrictions can also be imposed by the operation of copyright law. Public display and performance, and the creation of a derivative work are off-limits to a purchaser without permission from the copyright owner. The higher price associated with these permissions reflects second degree price discrimination.

D. *A Comparison of Second and Third Degree Price Discrimination*

I have distinguished second from third degree price discrimination because they must be treated distinctly under copyright law and policy. In this section I explain how they differ in preference measurement and arbitrage possibilities. Since copyright law can facilitate or discourage measurement and arbitrage, those differences have policy significance. Second and third degree price discrimination also differ in terms of their normative impact on efficiency and distribution. *ProCD v. Zeidenberg*,⁶⁸ a recent software licensing case, hints at the distinction but fails to fully analyze the normative effects of price discrimination. I will take up *ProCD* at the end of this section.⁶⁹

The starting point for a comparison is the different approaches to measurement that define the second and third degree methods. Third degree price discrimination requires a more knowledgeable seller; it is feasible only if the seller can identify the relevant buyer characteristic. The extra information held by the seller translates into higher profits from third degree compared to second degree discrimination.⁷⁰

are available in the industry which allow either an unlimited number of users at a specific location, or up to a fixed number (i.e. 500-1000 users) for a single flat fee for a limited period of time. (See <<http://www.microsoft.com/enterprise/licensing/Default.htm>>, October 11, 1999).

⁶⁶ There are other possibilities. Users might be charged for the number of searches they perform, the number of words or images that they access, the quantity that they download or print, etc.

⁶⁷ Since the use restriction does not follow a copyrighted work when it is resold, the seller must also prohibit resale by contract. A controversial subject of late is the circumstances under which copyright law preempts state contract law. See generally O'Rourke, *supra* note 60; Mark Lemley *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CALIF. L. REV. 111 (1999). Gordon links copyright preemption and price discrimination, see Gordon, *supra* note 2, at 1385.

⁶⁸ 86 F.3d 1447 (7th Cir. 1996).

⁶⁹ See *infra* text accompanying notes 78 – 86.

⁷⁰ This comparison holds if arbitrage is not possible. The comparison may be reversed if arbitrage is more difficult to control under third degree price discrimination compared to second degree.

The second point of comparison is arbitrage. Resale can be used to arbitrage against both types of price discrimination.⁷¹ But with second degree price discrimination there is another method of arbitrage; a low price buyer can engage in personal arbitrage. Personal arbitrage means the buyer recovers some or all of the benefit of the high priced product by “modifying” the low priced product. Personal arbitrage is feasible for many copyrighted products. Obviously, a buyer can violate contract or copyright restrictions on the use of a product. If the violation is not checked, then the buyer gets the benefit of a low price and unrestricted use. Sophisticated buyers may circumvent technology that limits how often a digital product can be used. In other words, hackers may arbitrage away quantity based price discrimination.⁷² Similarly, sophisticated buyers might modify software to restore features that were disabled in a lower quality version.⁷³

As the final point of comparison I will trace out the implications of the sorting constraint⁷⁴ that affects second but not third degree price discrimination. Recall that the constraint requires the price and attributes of the good intended for the low end of the market must not attract the high end, and the price and attributes of the good intended for the high end must not attract the low end. The sorting constraint imposes an implicit cost on the seller because it restricts the freedom of the seller to choose optimal attributes. With third degree price discrimination the seller can choose optimal attributes for the two classes of consumers independently. With second degree price discrimination the attributes are linked. Economic theory shows that a seller should set the optimal attribute for the high valuation consumers and a suboptimal attribute for the low valuation consumers. This inefficiency creates a hidden social cost of sorting.⁷⁵

⁷¹ Many copyrighted products subject to second and third degree price discrimination are services. Resale is difficult or impossible if the product is a service. For example, a buyer cannot purchase an extra viewing of a movie and resell it. It may be possible to resell the ticket, but inexpensive enforcement methods can limit that type of arbitrage. If the product is a good, then resale is more of a problem. Resale was used to arbitrage against geographic (third degree) price discrimination in *Quality King*. Resale can arbitrage against second degree price discrimination based on quality or contract restrictions. A high volume buyer can arbitrage quantity discounts by purchasing extra units at a discounted price and reselling to low volume buyers. A buyer can arbitrage contractual restrictions by purchasing a low price product and flouting the resale restriction.

⁷² Software distributed on floppy disk or other re-writeable media may have restrictions as to the number of uses after the software is initially installed on a computer. Hackers have been able to circumvent the security features to make the software think the program has never been installed before, or to reset the counter so the software always appears to be within the usage limit. The advent of software distribution on CD-Rom has made this a less common practice with software companies choosing to use time-use limitations (i.e. a 30 day trial period) in place of number of use limitations.

⁷³ An example of this would be a user of Microsoft Publisher 98® which was downloaded from the Microsoft web-site. This program had limited features during the “trial period” (30 days). After the trial period a user was forced to either purchase the software license from Microsoft or discontinue use of the program because all of the features of the program would be disabled 30 days after the program was installed. A sophisticated hacker could not only disable the 30-day limitation in the software, but could also remove the block on the full features of the program.

⁷⁴ Economists also call it a self-selection or incentive compatibility condition.

⁷⁵ The standard treatment of second degree price discrimination from information economics studies the characteristics of an optimal pricing mechanism and product design choice for a monopolist facing two types of customers. One type of customer has a higher marginal valuation of quality than the other. The results show that the socially optimal quality is offered to the high valuation customer. The low valuation

The sorting cost can be illustrated by returning to the software market represented in Table One. The optimal product for both groups is the unrestricted software. There is no cost savings from imposing the restriction (in fact the opposite), so a third degree price discriminator offers the unrestricted version to both groups. A second degree price discriminator cannot offer the unrestricted version to both groups because that would violate the sorting constraint. The seller implements discrimination by degrading the quality of the software offered to group L. The quality gap between the restricted and unrestricted software induces buyers X and Y to pay the higher price for the unrestricted version.

Let's now turn to *ProCD v. Zeidenberg* and analyze the price discrimination in that case.⁷⁶ The defendant Zeidenberg purchased a low priced version of a database that contained a contractual restriction to consumer use. Zeidenberg violated that restriction by setting up a web page that made commercial use of the database.⁷⁷ Judge Easterbrook recognized that the plaintiff, ProCD, relied on the consumer use restriction to discourage arbitrage and promote price discrimination.⁷⁸ He argued that this is a desirable purpose and enforced the restriction against Zeidenberg.⁷⁹

customer is provided with quality that is less than the social optimum. Furthermore, the low valuation customer is left indifferent between participating in the market or not. The high valuation customer gains positive surplus.

Since the seller cannot distinguish high and low valuation customers he or she has to offer one price and quality combination that attracts one type of customer and another combination that will attract the other type. An artful choice of quality and price pairs solves both the arbitrage and measurement problem. The high valuation customers prefer higher quality despite the higher price; the low valuation customers prefer lower quality and price. If the seller could distinguish high and low valuation customers and practice third degree price discrimination then the seller would choose the socially optimal quality level for both types of customers. Under second degree price discrimination the quality is degraded to low valuation customers to make it easier to sort the two types. When the quality gap is large, the seller can raise the price differential and gain a higher mark-up from the more profitable market niche containing the high valuation customers.

⁷⁶ 86 F.3d 1450.

⁷⁷ *See id.* at 1450.

⁷⁸ *See id.*

⁷⁹ I only consider the analysis of price discrimination in this case. There is a vast amount of commentary on other aspects of the case. *See, e.g.,* Gordon, *supra* note 2, at 1385; Maureen O'Rourke, *Copyright Preemption After the ProCD Case: A Market-Based Approach*, 12 BERKELEY TECH. L. J. 53 (1997). The extensive discussion of price discrimination in the opinion is a bit curious, because the merits of price discrimination as practiced by ProCD are not very relevant to the outcome of the case. The two issues decided by the Seventh Circuit are: whether the contract terms are enforceable under Wisconsin contract law; and whether federal copyright law preempts the terms. The plaintiff did price discriminate and probably did care about blocking personal arbitrage by enforcing the consumer use restriction. But ProCD was more interested in this case in enforcing a contract term that prohibited distribution of its database over the internet. In other words, ProCD was more worried about competition from Zeidenberg than arbitrage by Zeidenberg. (The district court did not even mention the consumer use restriction.) The question of whether ProCD could block Zeidenberg's distribution of the database through his web page would still have been present if ProCD charged a uniform price. The same two legal questions would still be present and Easterbrook probably would have ruled the same way. I suppose seized on this side issue because he understands the importance of price discrimination for copyright policy, especially in the digital world.

Even though Easterbrook's analysis is brief, it is among the most sophisticated comments on copyright and price discrimination in legal writing. Although he doesn't use the term, he lucidly describes the barrier to third degree price discrimination facing ProCD — anonymous buyers in a mass market.⁸⁰ He then explains the contract restriction allows discrimination between the consumer and business markets.⁸¹ He also notes in an aside that second degree price discrimination leads to sorting costs.⁸²

I agree with much of Easterbrook's analysis but disagree with his normative conclusions. Easterbrook claimed that price discrimination would raise profits for ProCD and also benefit consumers. The software example based on Table One provides some guidance in analyzing this case. Let task *a* represent consumer uses of ProCD's database and task *b* represent other uses. If the contractual restriction is enforced, then ProCD's profit grows from 15 attainable under uniform pricing to 18 from second degree price discrimination. Note however that consumer surplus and total surplus both decline from price discrimination. This is my first quarrel with Easterbrook's analysis: he fails to mention that price discrimination may reduce consumer surplus and total surplus.

I need to soften my criticism though, because it is quite possible that the pattern of demand specified in Table One is not correct for this market. The data presented in Table Two support a favorable view of price discrimination. The optimal uniform price is 6, profit is 15, and units are sold to buyers X, Y, and Z. Under second degree price discrimination a database with a restriction to task *a* is priced at 3, and the unrestricted database is priced at 6. The profit rises to 19 and all five buyers purchase a unit. Consumer surplus grows by one unit because the surplus of buyers in group H is unaffected, while buyer V gains one unit of surplus. Finally, total surplus grows by 5 because it is the sum of the increase in profit and consumer surplus.

Table Two

	Group L		Group H		
Buyer	V	W	X	Y	Z
Task a	4	3	5	4	3
Task b	0	0	5	4	3
Total	4	3	10	8	6

The key difference between the examples based on Tables One and Two is that price discrimination opens a new market in the second example. In the first example, sales are constant and consumer surplus declines because the seller captures more of the value from buyers X and Y. Total surplus falls because of the sorting cost. In the second example, consumer and total surplus grow because consumers (group L members) gain access to a market that was closed to them under uniform pricing. Notice that there is no sorting cost in this example because consumers only care about task *a*. If possible, the

⁸⁰ See *ProCD*, 86 F.3d at 1450.

⁸¹ *Id.*

⁸² *Id.*

seller would like to define task *a* to be equivalent to *consumer uses*, then sorting costs are avoided. Effectively, the seller turns second degree price discrimination into third degree price discrimination in the second example.

The boundary between second and third degree price discrimination is blurry in a case like *ProCD*. The database is combined with a use restriction and price discrimination is implemented by observing whether buyers *choose* the unrestricted database. A business could choose a database that is restricted to consumer uses, but it would not, assuming the selection constraint is satisfied. Counterfactually, if *ProCD* offered two products, one available only to consumers and another available only to businesses, then we would have third degree price discrimination.⁸³ Easterbrook implicitly defends the consumer use restriction because it approximates third degree price discrimination and avoids sorting cost. He notes that *ProCD* could have tinkered "with the product and [let] users sort themselves — for example, [by] furnishing current data at a high price that would be attractive only to commercial customers, and two-year-old data at a low price...."⁸⁴ His important message is that sellers can often choose among many methods for price discrimination. We must be careful not to discourage a relatively benign version only to have it be replaced by a less efficient version.

My disagreements with Easterbrook are partly based on empirical questions, and partly based on normative issues that I have not discussed yet. My first reservation about the consumer use restriction derives from my lack of confidence that Table Two accurately represents the market. Whether sorting costs can be eliminated depends on the homogeneity of consumer preference and the ability of the parties and courts to map the term *consumer use* onto the tasks actually performed with the database. I explain my other reservations in Part IV.

III. THE EFFECTS OF COPYRIGHT LAW ON PRICE DISCRIMINATION

In this section I will review the highlights of copyright law and show that most of the key provisions of the law affect the profitability of price discrimination. The content of case law is mixed with regard to promotion of price discrimination. Some provisions facilitate discrimination and others impede it.⁸⁵ Similarly, the history of copyright legislation records a recurring contest between publishers and users over elements of the law that impinge on discriminatory marketing practices.⁸⁶ Such conflicts probably reflect

⁸³ Publishers practice this kind of third degree price discrimination when they charge a higher rate to libraries for academic journals.

⁸⁴ See *ProCD* 86 F.3d at 1447, 1450.

⁸⁵ Copyright law offers an alternative to antitrust as an instrument for promoting or discouraging the discriminatory marketing of works of authorship. The limited scope of the Robinson-Patman Act is one important constraint on antitrust regulation of price discrimination. Another is that the regulation is always constraining, it cannot be used to promote price discrimination when that might be desirable. At most, antitrust abstains from control of price discrimination. The Sherman and Clayton Acts reach tying contracts and certain marketing practices of firms with a dominant market share. Actions against a particular practice of a particular defendant are hard to evaluate.

⁸⁶ See Jessica Litman, *Copyright, Compromise, and Legislative History*, 72 CORNELL L. REV. 857, 893-94 (1987) (users with significant bargaining power have been able to gain exceptions from copyright

an on-going contest in Congress and the courts between relatively powerful interests arrayed on the user as well as the producer side of copyright issues.⁸⁷

The copyright statute establishes a complicated bundle of property rights that are awarded to the creator of a copyrightable work.⁸⁸ The first in the bundle is the reproduction right, which gives the copyright owner the exclusive right to reproduce a protected work. The scope of this right is broad enough to encompass nonliteral copying.⁸⁹ The right is qualified in various ways including the fair use doctrine, compulsory licensing requirements, and the idea-expression dichotomy.⁹⁰ The second right gives the copyright owner the exclusive right to prepare derivative works based on the original work.⁹¹ Translations, abridgements, and dramatizations are examples of the types of adaptations covered by this right. The third right gives the copyright owner control over the distribution of embodiments of the copyrighted work.⁹² This right is substantially limited by the first sale doctrine, which states that the buyer of a copy of work has the right to dispose of the work as she chooses.⁹³ The fourth, fifth and sixth rights cover the public performance and display of a copyrighted work.⁹⁴ These rights do not extend to private performance and display. Furthermore, various exemptions and compulsory licensing provisions limit the public performance and display rights.⁹⁵

A. Copyright as a Source of Market Power

By definition, market power implies a seller can price above marginal cost and resist attempted incursions into its market by competing sellers. Market power means that a price discriminator can retain customers who are hurt by discrimination. Most economic and legal discussions of price discrimination are in the context of a monopolist supplier. This reflects both the dated view that a substantial amount of market power is required for price discrimination, and also the practical consideration that price

protection); Jessica Litman, *Copyright Legislation and Technological Change*, 68 OR. L. REV. 275, 283-88 (1989); Stewart Sterk, *Rhetoric and Reality in Copyright Law*, 94 MICH. L. REV. 1197, 1244-46 (1996) (interest group politics determines the content of copyright law). Cf. Thomas Ross, *Winners and Losers under the Robison-Patman Act*, 27 J. LAW & ECON. 243 (1984) (arguing that the purpose of the Robinson-Patman Act was to redistribute surplus from chain stores and grocery manufacturers to independent retailers)

⁸⁷ The software rental legislation allows importers of gray market video game circuit boards to use them in games in video arcades without violating the public performance or display rights. ROBERT A. GORMAN AND JANE C. GINSBURG, *COPYRIGHT FOR THE NINETIES: CASES AND MATERIALS* 492-93 (1993). The authors suggest this legislation was designed to favor domestic arcade owners over Japanese copyright owners. *Id.* at 493.

⁸⁸ See 17 U.S.C.A. § 106 (West 1999).

⁸⁹ See 17 U.S.C.A. § 106(1) (West 1999).

⁹⁰ See 17 U.S.C.A. §§107, 115 (West 1999); *see also* Baker v. Selden, 101 U.S. 99 (1879)(idea-expression dichotomy in copyright law).

⁹¹ See 17 U.S.C.A. § 106(2) (West 1999).

⁹² See 17 U.S.C.A. § 106(3) (West 1999) (right of distribution); cf 17 U.S.C.A. §109 (West 1999) (statutory embodiment of the first sale doctrine).

⁹³ See 17 U.S.C.A. § 106(4)-(6) (West 1999).

⁹⁴ See 17 U.S.C.A. § 106(1) (West 1999).

⁹⁵ See 17 U.S.C.A. § 110 (West 1999).

discrimination is much easier to analyze in monopolistic markets.⁹⁶ Recent advances in economic theory establish the conceptual basis for price discrimination in oligopoly markets.⁹⁷ Economists have modeled price discrimination in markets in which entry barriers assure that sellers earn positive economic profits, and also in markets without entry barriers in which sellers earn zero economic profit even though they do have market power and are price discriminating.⁹⁸

Market power has two effects on price discrimination in addition to its basic role in making discrimination possible. First, entry barriers limit the number of firms active in a copyright dependent market. This in turn influences the magnitude of discriminatory price differentials and other effects of price discrimination. As the number of firms in a market grows the effects of discrimination disappear. The second effect concerns the linkage between market power and arbitrage. One tactic for limiting arbitrage is self help by a seller who punishes distributors who allow or participate in arbitrage. If the seller and distributor have a valuable long-term relationship, the distributor may be reluctant to support arbitrage that will displease the seller. The ability of the seller to punish and deter arbitrage by distributors (or even customers) depends in part on the seller's market power. The seller has the greatest ability to punish when it is a monopolist.

Copyright fosters product differentiation and thereby creates market power. A copyright gives its owner exclusive rights to the protected expression. If that expression is particularly valuable and does not have close substitutes,⁹⁹ then the copyright owner gains considerable market power from the copyright. Disney derives most of its market power from copyright law. The reproduction and derivative rights covering images like Mickey Mouse are essential to protecting Disney's economic rents from movies and merchandise.¹⁰⁰ On the other hand, the shampoo maker L'anza does not derive any market power from copyright. Copyright protection on labels is thin and provides no significant advantages over competitors.¹⁰¹ Other shampoo makers are free to write equally effective labels. Instead, L'anza (and Disney as well) achieves product differentiation and market power with the aid of trademark law. L'anza differentiates its shampoo through product design, advertising, and other marketing strategies.

⁹⁶ See HERBERT HOVENKAMP, FEDERAL ANTITRUST POLICY: THE LAW OF COMPETITION AND ITS PRACTICE 424 (1999) (only a small amount of market power is required for price discrimination); Michael E. Levine, Price Discrimination Without Market Power, Harvard John M. Olin Disc. Paper Series, No. 276, 2 (Feb. 2000) (same).

⁹⁷ See Thomas Holmes, *The Effects of Third-Degree Price Discrimination in Oligopoly*, 79 AMER. ECON. REV. 9 (1989); Baker, *supra* note 3 at 180-81 (discusses the possibility of price discrimination in markets with differentiated products).

⁹⁸ Demsetz even shows that in special circumstances price discrimination is compatible with perfect competition. See Demsetz, *supra* note 1, at x.

⁹⁹ Alternatively, if there is broad scope to protection against infringement, then competitors would be excluded from offering close substitutes.

¹⁰⁰ See *US debates Mickey's future; The Specter of Copyright Loss has Disney Perturbed*, Timaru Herald, March 3, 1998 (1998 WL 8244466) (noting the value of copyright and intellectual property to Disney); *Focus the Battle for Mickey*, The Sunday Telegraph London, (February 15, 1998) (1998 WL 2997643) (estimating the yearly value of copyright for Disney at \$22 Billion).

¹⁰¹ Besides stopping piracy.

Although the main effect of copyright on market power comes from product differentiation, sometimes copyright law also works to create entry barriers to an industry. The fixed cost of creating a work is one factor limiting entry. Copyright raises the cost of creation when a new work depends on older copyrighted works in such a way that permission is required to create the new work.¹⁰² Alternatively, copyright affects entry in software markets when the use of copyrighted software code is necessary or at least desirable to make a compatible software product.¹⁰³

B. Copyright and Resale

The first sale doctrine authorizes a buyer to dispose of work she has purchased by resale, lease, or gift. The link between the first sale doctrine and arbitrage is obvious. If favored buyers can purchase a work and then sell or lease it to disfavored buyers then price discrimination is defeated. Previously, I emphasized that resale is the major route for arbitrage against price discrimination. Here I take a broader view and consider rental and gifts as well as resale. One tactic producers use to defeat the first sale doctrine is to characterize a sale as a license and include a contract term that prohibits transfer.¹⁰⁴ In another approach, producers skirt the doctrine by leasing a work instead of selling it.¹⁰⁵ In certain industries, copyright owners gained help from Congress through copyright amendments that modify the first sale doctrine and severely restrict the ability of buyers to lease their copies of software and sound recordings.¹⁰⁶

Besides playing a role in arbitrage, lending rights also diminish the market power of the copyright owner. Commercial lenders like video rental stores influence the demand for movie rental *and purchase*. Competition from rental stores limits the market power of the movie studios when they sell videotapes to the public. Public libraries are a

¹⁰² See Landes & Posner, *supra* note 19 at x.

¹⁰³ An example of this scenario is evident in the need for application program developers to have access to the source code for operating systems, and in many cases to incorporate part of the operating system code into the application to insure compatibility.

¹⁰⁴ The first sale doctrine and copyright preemption of contract law may limit use of this method. Proposed Article 2B section 507(a) would significantly aid publishers in warding off arbitrage. If a copyright holder licenses possession and use of a copyrighted work, but forbids transfer or sharing, the proposed UCC section would allow enforcement against the licensee and third parties. See David A. Rice, *Digital Information as Property and Product: UCC Article 2B*, 22 U. DAYTON L. REV. 621, 631 (1997).

¹⁰⁵ Some sellers try to stop arbitrage by limiting the number of units they deliver to a purchaser. An arbitrageur might respond to this tactic by reproducing copies for resale. The strong copyright remedies available to stop piracy help deter this route to arbitrage.

¹⁰⁶ The Record Rental Amendment of 1984 and the Computer Software Rental Amendments Act of 1990 limit the first sale doctrine. Section 109(b)(1)(A) prohibits a buyer from renting software for profit. The main concern of both industries was illicit copying by renters. Without the 1990 amendment the software industry probably would have turned to lawsuits for contributory infringement against rental stores and technological measures to prevent copying.

significant factor in book lending¹⁰⁷ and they have similar impact on the market power of book publishers.¹⁰⁸

Buyers are allowed to share copyrighted works with their friends and family under the personal use doctrine.¹⁰⁹ Personal use originates from the first sale doctrine, and is expanded by the fair use doctrine that allows some kinds of personal copying. Widespread small-scale copying of software alarms software publishers.¹¹⁰ They portray this phenomenon as a piracy problem. I think the real issue is arbitrage not piracy. It is not a piracy problem because sellers can respond to sharing by raising their price.¹¹¹ For example, if the average software purchaser shares the software with one other person, then the seller could just double the sale price (or make the optimal adjustment that is probably smaller). Sharing aggregates buyers into coalitions and thereby interferes with price discrimination. A price discriminator wants to disaggregate market demand and, to the extent possible, deal with each buyer as an individual.¹¹²

The importation right is the final feature of copyright law of interest in terms of resale arbitrage. In *Quality King*, the seller L'anza attempted to block resale by foreign distributors who undercut the higher domestic price.¹¹³ L'anza relied on a provision of copyright law that allows a copyright owner to block the importation of unauthorized copies into the U.S.¹¹⁴ The Supreme Court decided that the foreign distributors were reselling authorized copies and protected by the first sale doctrine.¹¹⁵ Justice Stevens remarked: "The whole point of the first sale doctrine is that once the copyright owner places a copyrighted item in the stream of commerce by selling it, he has exhausted his exclusive statutory right to control its distribution."¹¹⁶

C. Copyright and Personal Arbitrage

In this section I examine the relationship between copyright law and personal arbitrage. Recall that personal arbitrage refers to buyers' actions that subvert a scheme of product differentiation used to implement second degree price discrimination. Sellers differentiate copyrighted works with respect to delivery date, quality, quantity, and

¹⁰⁷ They also lend videotapes and audiotapes.

¹⁰⁸ Some European countries have a public lending right in which libraries make a payment to authors. In some countries it is a flat fee in others it is based on circulation. See GORMAN & GINSBURG, *supra* note 90, at 493.

¹⁰⁹ See Meurer, *supra* note 2, at x.

¹¹⁰ See Susan Tiefenbrun, *Piracy of Intellectual Property in China and the Former Soviet Union and Its Effects Upon International Trade: A Comparison*, 46 BUFF. L. REV. 1, (1998) (discussing the problem of widespread software piracy in Russia); see also Meurer, *supra* note 2, at x.

¹¹¹ *Id.* at x.

¹¹² But see Yannis Bakos, Eric Brynjolfsson, & Douglas Lichtman, *Shared Information Goods*, 42 J. LAW & ECON. 117 (1999). I discuss the relationship between consumer sharing and price discrimination in Part VI.C.

¹¹³ See *Quality King*, 118 S.Ct. at 1125.

¹¹⁴ See *id.* at 1127 (citing 17 U.S.C.A. § 602(a) restricting importation of copyrighted material).

¹¹⁵ To the extent that the importation right survives *Quality King*, copyright suits may still deter arbitrage against geographic price discrimination.

¹¹⁶ See *id.* at 1127.

permissible use. A buyer engaged in personal arbitrage tries to alter some characteristic that differentiates a work — specifically, a buyer of a low priced work might arbitrage by avoiding use restrictions or by increasing the quality or quantity of the work she consumes. Successful personal arbitrage gives the advantages of a high priced purchase at a low purchase price. Copyright law deters many forms of personal arbitrage and may affect the seller's pattern of product differentiation and price discrimination.

Let me start with the choice of delivery date, and consider an example of personal arbitrage from the movie industry. The movie industry discriminates between eager and patient viewers by letting movie prices decline over time. Before the days of videotape the group of eager viewers included people who worried they would miss a movie if they waited for it to appear on television. After the introduction of videotape these people could tape televised movies and not have to worry about being home when the movie was televised. Thus, the possibility of copying the broadcast of a movie meant that the group of eager (high valuation) buyers declined.¹¹⁷ The movie industry argued that such copying infringes the reproduction right, and companies that sell VCRs are contributory infringers.¹¹⁸ The Supreme Court ruled that home videotaping of televised movies was a fair use, and absent a showing of direct infringement by consumers there was no contributory infringement.¹¹⁹

Next let's consider arbitrage related to product quality. Usually, a buyer cannot alter product quality so personal arbitrage against quality discrimination might seem surprising. But alterations of software are possible. As I mentioned earlier, software publishers price discriminate between application programs that run on Windows and those that run on Unix.¹²⁰ The supposition is that Unix users will pay more because they have more powerful machines and get more value out of the application. Frustrated Unix users may be tempted to purchase a Windows version of the software and modify it so that it runs on a Unix platform. They are deterred from making such modifications by Section 106(2) of the Copyright Act. Software modifications of this sort violate the derivative rights of the copyright owner.¹²¹ This problem might not seem significant because of the cost of modification. It is a significant problem though if the first modifier can distribute the code that achieves the modification to other users. The sale of the "patch" might easily justify the expense. Under copyright law these sales violate the distribution right, and the purchasers of the patch would violate the derivative right when they implemented the modification.

Difficult copyright law issues arise from the complex strategies used to implement quantity based price discrimination. Digital technology has increased the

¹¹⁷ Videotaping has another impact on price discrimination. It allows a consumer to watch a televised program repeatedly. Home taping may displace sales of videotapes or repeat trips to the theater (e.g., to see a Disney movie). This interferes with quantity based discrimination.

¹¹⁸ See *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

¹¹⁹ *Id.*

¹²⁰ See O'Rourke, *supra* note 60 at 533 (software license fee varied with size of machine that would run the software).

¹²¹ Software licenses usually also contain a term that prohibits modification of the software.

profit from quantity based pricing. Publishers foresee the possibility of measuring and charging for each use of a digital work. New technology and new organizations like the Copyright Clearance Center and the Authors' Union make it easier to identify and charge users, but they will not be completely effective in achieving that purpose without complementary changes in copyright law. If a particular reading, listening or viewing is a protected personal use, then it does not matter whether the copyright owner can identify the use — payment cannot be compelled.¹²²

Copyright owners argue that each time a digital work is used a copy is made in a temporary memory.¹²³ They emphasize this fact to escape the application of the first sale doctrine.¹²⁴ If the reproduction right covers temporary copying of digital files, then usage sensitive pricing contracts are more likely.¹²⁵ Breaching the contract would expose the user to the copyright remedies of injunction, attorneys' fees, and treble damages, rather than mere contract damages.¹²⁶ The copyright owner could insist on reports about usage or install some technology to audit usage.

Such metering is not possible for traditional works. The first sale doctrine stands as a barrier to a contract provision that limits the number of times the buyer reads or views a work. Furthermore, a license or lease that imposed restrictions on viewing or reading might conform to the law, but practically, such restrictions would be unenforceable. At best the copyright owner could offer different lease periods to discriminate among buyers. Discrimination could work if high value buyers would systematically choose long lease periods. Of course, the administrative costs of such a marketing scheme are probably prohibitively high.¹²⁷

Tied sales present another sophisticated approach to quantity based price discrimination. A tied sale forces a buyer who is interested in one product, called the tying product, to purchase a second product, called the tied product, as a condition for receiving the first product.¹²⁸ Price discrimination is one explanation of the purpose of tied sales. The price discrimination story works when the tied product is used in variable

¹²² Of course, if the publisher can use technology to preclude access to users who would have a personal use privilege, then the value of that privilege is negated.

¹²³ See *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993).

¹²⁴ See Jessica Litman, *Revising Copyright Law for the Information Age*, 75 OR. L. REV. 19, 21 (1996). "Under one controversial view of the copyright statute, most of the activity that takes place in individuals' homes when they turn on their computers, cannot lawfully be engaged in without the authorization of the copyright owner in the material they see, hear, read, listen to or view." *Id.* at 24.

¹²⁵ See Meurer, *supra* note 2, at x; David E. Sorkin, *Unsolicited Commercial E-mail and the Telephone Consumer Protection Act of 1991*, 45 BUFF. L. REV. 1001, 1009 n.42 (1997) (indicating the shift from unlimited internet access to usage based charges to recover costs.); also note that West Group charges per transaction for its WestLaw® service, justifying this by noting that every time a user views or downloads a document they are making a "copy" on their computer.

¹²⁶ See Meurer, *supra* note 2, at 868 n.114 (1997); see also 17 U.S.C.A. §§ 501-511 (West 1999) (remedies for copyright infringement).

¹²⁷ The sorting constraint also hurts the profitability of this type of scheme.

¹²⁸ See *Tricom, Inc. v. Electronic Data Systems Corporation*, 902 F.Supp. 741 (E.D. Mich. 1995) (addressing issue of tying use of copyrighted software to purchase of time sharing on sellers computer system).

quantities in combination with one unit of the tying product.¹²⁹ The seller uses demand for the tied product to measure the intensity of use of (and intensity of demand for) the tying product. The mark-up on the tied product results in discrimination against high intensity users of the tying product. Antitrust economists have debated the merits of tying for years.¹³⁰ The antitrust question is whether these contracts are enforceable. A recent software copyright case makes it clear that tying is also now an issue of copyright law.

MAI v. Peak Systems Inc. concerns a tie between operating system software and software maintenance service.¹³¹ The copyright in the case protected a computer operating system. The defendant was providing software maintenance services to a party who had purchased the plaintiff's software and installed it on a computer. When the defendant turned on the computer to perform maintenance service a copy of at least a part of the operating system software was necessarily made in the computer's random access memory. The court found that copying infringed on the reproduction right.¹³² The plaintiff used the ruling to exclude the defendant from the maintenance market.¹³³ In contrast to antitrust tying cases, no contract is required to achieve tying. Copyright law is used to extend market power from the operating system software to the maintenance service.

Merchandising is a common marketing practice in copyright dependent industries that can play the same kind of metering role as tying. The derivative right is used to establish a tie between movies (or television programs) and merchandise inspired by the movie (or program). For example, Disney controls the right to manufacture clothing, lunch pails, toys, etc. that feature the likeness of a Disney movie character.¹³⁴ Disney can use the sale of merchandise to meter the intensity of demand of moviegoers. The optimal strategy for a price discriminator calls for a low movie price and a mark-up on the merchandise.

The final topic in this section is the relationship of copyright law to use restrictions. Copyright and contract determine the pattern of authorized uses available to a buyer. The copyright owner may grant or withhold rights to public performance or

¹²⁹ In a classic example, the sale of punch cards was tied the lease of an IBM tabulator machine.

¹³⁰ See generally Keith N. Hylton & Michael Salinger, *Tying Law and Policy: A Decision Theoretic Approach*, Boston Univ. School of Law Working Paper Series, No. 01-04, (2001) available at <http://www.bu.edu/law/faculty/papers> (commenting on post-Chicago tying theory); Warren S. Grimes, *Antitrust Tie-In Analysis After Kodak: Understanding the Role of Market Imperfections*, 62 ANTITRUST L. J. 263 (1994) (discussing the merits of product tying in various situation).

¹³¹ See *MAI Systems Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993).

¹³² Specifically, the court held that a computer's (RAM) satisfies the fixation requirement and a temporary RAM copy is a reproduction within the meaning of Section 106(1). See *id.* at 518.

¹³³ Congress reversed this result in the Digital Millennium Copyright Act. See 17 U.S.C.A. §§ 117(a),(c)-(d) (West 1999) (these sections reflect the amendments to 17 U.S.C.A. by §301 of the Digital Millennium Copyright Act).

¹³⁴ See *Entertainment Research Group, Inc. v. Genesis Creative Group, Inc.*, 122 F.3d 1211, 1218 (9th Cir. 1997) (discussing the fact that costumes based on a cartoon character were a derivative work within the meaning of 17 U.S.C.A. § 106(2), as defined in 17 U.S.C.A. § 101, and were therefore an infringement of the holder of the copyright in the cartoon.)

display, the right to reproduce, and the right to create a derivative work. When a contract is silent, a buyer in a typical transaction enjoys certain rights that derive from the first sale doctrine and implied contract terms. These rights include private viewing, reading, etc., the right to dispose of her copy of the work, and possibly limited reproduction rights. Certain high valuation users will seek a broader license that authorizes derivative uses, reproduction rights, or public performance or display uses. The copyright owner can fine tune licenses by including field of use restrictions, or restrictions on the duration or intensity of the use.

The fine divisions between rights under copyright law facilitate price discrimination.¹³⁵ Consider the case of recorded music. If the copyright owner did not have a public performance right, then he would have more trouble discriminating between a buyer interested only in personal use and a buyer who intended to play the music in a business. The seller might mimic book publishers and release an early version of the recording at a high price (targeting high valuation business customers) and release a later version at a low price. Alternatively, the seller might mimic ProCD and insert a contract limitation in the low priced recording. The limitation would insist on consumer use only. The copyright owner would rather rely on the performance right than either of the other approaches. The first approach gives rise to sorting costs. The second approach gives rise to greater enforcement costs. Discrimination might be possible without the performance right, but it is probably more profitable with it.

An example of copyright law working against price discrimination by the music industry is provided by *White-Smith Music Publishing v. Apollo Co.*¹³⁶ The case concerned infringement of the reproduction right for musical compositions. The Supreme Court held that a piano roll was not understandable to a human observer unassisted by a player piano, and thus the roll did not satisfy the fixation requirement.¹³⁷ Since the fixation requirement was not satisfied there was no infringing reproduction. As a consequence, copyright owners in musical compositions could not easily price discriminate between piano roll producers and other users of music. The 1976 Copyright Act reversed *White-Smith* and loosened the fixation requirement by recognizing that a work is fixed if it can be perceived with the aid of a device.¹³⁸

IV. SOCIAL WELFARE ISSUES

A. *Distribution of Surplus*

¹³⁵ See Lunney, *supra* note 2, at 630 (“...by granting the author the exclusive right to perform a copyrighted work publicly, to display a copyrighted work publicly, or to create a derivative work based upon a copyrighted work, we are essentially granting the author the right to engage in price discrimination”); *id.* at 635 (the user interested in derivative rights has a higher valuation than the typical user).

¹³⁶ 209 U.S. 1 (1908).

¹³⁷ See *id.* at 18.

¹³⁸ See 17 U.S.C.A. § 102(a) (West 1999).

Analysis of distributional effects is not the strong suit of microeconomics, but it is possible to make a few important observations about price discrimination and surplus distribution. First, economics *is* well suited to make descriptive claims about how price discrimination affects the distribution of economic surplus. I will comment on the impact of price discrimination on profit, consumer surplus enjoyed by high valuation buyers, and consumer surplus enjoyed by low valuation buyers. Second, economists agree on the Pareto principle as a normative approach. This principle endorses policy changes that make everyone better off. Some authors claim that in some cases price discrimination will lead to a Pareto improvement and should be facilitated.¹³⁹ In the usual case, no policy will make everyone better off, and economists resort to a social welfare function to judge policy change. A social welfare function permits an analyst to import his or her own sense of fairness when choosing between efficient policy outcomes.¹⁴⁰ Applied economists usually suppose that the winners and losers of a distributional contest are equally deserving; then the only issue is whether the gains to the winners outweigh the costs to the losers. This approach amounts to maximization of total surplus. In section II, I indicated the effect of price discrimination on total surplus. Though I wouldn't endorse it as an appropriate social welfare function,¹⁴¹ I do believe that it serves as a useful benchmark.

I will start with descriptive observations that help make a normative case in favor of price discrimination. As a first step I must identify who gains and loses. Recall the seller always gains from price discrimination. Discrimination is voluntary, the seller would not discriminate unless it was profitable. The disfavored buyers either experience no change or a decline in their consumer surplus. The favored buyers either experience no change or growth of their consumer surplus. The best scenario for proponents of price discrimination occurs when no consumer is made worse off and some consumers enter the market and are made better off by price discrimination.¹⁴² Even if some consumers lose from price discrimination it is possible that the net effect is to reduce wealth inequality. This would be true if the disfavored buyers are wealthy and the favored buyers are poor.¹⁴³ A non-economic argument relevant in this context is that price discrimination is desirable because it increases access to copyrighted works. Access to copyrighted expression can be valued as a token of participation in culture and politics.¹⁴⁴

¹³⁹ See *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1449-50 (7th Cir. 1996).

¹⁴⁰ See generally Louis Kaplow & Steve Shavell,

¹⁴¹ For criticism of economic measures of social welfare as applied to information see Cohen, *supra* note 2, at x; Boyle, *supra* note 2, at x; Julie E. Cohen, *Lochner in Cyberspace: The New Economic Orthodoxy of "Rights Management,"* 97 MICH. L. REV. 462, 538-59 (1998).

¹⁴² Judge Easterbrook argues that this occurred in *ProCD*, 86 F.3d at 1449: discrimination increases the amount of surplus generated by a transaction, leaving consumer welfare unaffected or even improved

¹⁴³ See TIROLE, *supra* note 3, at 137-139 (high elasticity customers benefit from third degree price discrimination and they are more likely to be poor); Neil Weinstock Netanel, *Asserting Copyright's Democratic Principles in the Global Arena*, 51 VAND. L. REV. 217, 323 (1998) ("price discrimination in international markets would give copyright owners an incentive to market expressive works in countries they might otherwise avoid").

See Fisher *Fair Use*, *supra* note 2, at 1788-89 (price discrimination helps the less affluent TV viewer); Kaplow, *supra* note 1, at 1876 (mentions distribution and equitable issues but does not analyze them).

¹⁴⁴ See Fisher *Internet*, *supra* note 2, at 1234-41 (social costs and benefits of price discrimination).

In this case, it is the total quantity sold not the consumer surplus that matters. Nevertheless, proponents of price discrimination still have to prove that discrimination will increase access. That is not always true.

Reversing my assumptions about output and consumer surplus leads to a gloomier price discrimination scenario. If quantity is unchanged or falls, then discrimination reduces total surplus.¹⁴⁵ High valuation buyers lose consumer surplus because they face a higher price, and low valuation buyers are unaffected because they continue to face the old uniform monopoly price.¹⁴⁶ One can still justify discrimination since the seller gains — the justification could be grounded on a social preference for the seller over the buyers, or a social desire to motivate seller investment through high profit.¹⁴⁷

In the hardest case, which is probably common, discrimination causes increased total surplus and decreased consumer surplus for high valuation buyers. One strategy that might lead to a normative judgment is to inspect the three interest groups and see whether any deserves special consideration.¹⁴⁸ The first question to ask is whether a link can be drawn between different buyer groups and different income or wealth classes. Such a link can be drawn in some markets. Let's consider price discrimination in a market for entertainment software. Software buyers might be fairly wealthy or at least wealthy in terms of human capital with favorable lifetime earnings prospects.¹⁴⁹ A shift of consumer surplus away from software purchasers to firms might be a wash in terms of wealth distribution because the software purchasers are also shareholders.¹⁵⁰ More likely, there will be an intergenerational transfer since shareholders tend to be old and software purchasers tend to be young.¹⁵¹ If I switch to business software, then it is very easy to argue that distributional concerns are a wash. Both the winners and losers from discrimination are businesses. In this case, total surplus maximization seems to be the best normative approach.¹⁵²

I might reach a different conclusion if the work falls in the realm of popular entertainment. It is likely that high valuation and low valuation buyers are both representative members of the public. Since the demand for popular entertainment is not

¹⁴⁵ This discussion is framed in terms of third degree price discrimination.

¹⁴⁶ If there are more than two categories of buyers, those with higher valuations (or more precisely lower elasticity) tend to lose and those with lower valuations (higher elasticity) tend to gain.

¹⁴⁷ The strongest social welfare argument for price discrimination arises if the buyers are firms and society does not care about the distribution of surplus between buying firms and selling firms. Then even though total surplus falls, this post-creation loss might be offset by the incentive effect of high profit from price discrimination on creative activities.

¹⁴⁸ An analyst might consider additional interest groups such as shareholders and employees.

¹⁴⁹

¹⁵⁰ Some of the rents accruing to firms are diverted to managers and workers at the firm.

¹⁵¹ cite.

¹⁵² If I assume that some of the rents from discrimination flow to authors, then it might even be appropriate to weigh profit (producer surplus) more heavily than consumer surplus (profit of buyers). This context creates the strongest distributional claim in favor of price discrimination. See Neil Weinstock Netanel, *Copyright and A Democratic Civil Society*, 106 YALE L.J. 283 (1996).

very sensitive to income,¹⁵³ there is no reason to expect high valuation buyers to be wealthier than low valuation buyers. Furthermore, since stock ownership is concentrated among the wealthy,¹⁵⁴ egalitarianism favors consumer surplus over profit. The redistribution caused by price discrimination is likely to increase inequality.¹⁵⁵

The final consideration is whether there is any special merit to the uses chosen by high valuation as compared to low valuation buyers. Perhaps the high valuation buyers create new works that yield positive externalities. Almost by definition the incentive to produce these works is too small. Forcing such users to pay high discriminatory prices amounts to a tax on virtue.¹⁵⁶ Of course, it's also possible that low valuation buyers create positive externalities; examples might include research, religious, educational, or political uses.¹⁵⁷

B. Efficiency

1. Incentives to Create Copyrighted Works

Copyright law creates exclusive rights that yield economic value to a copyright owner. The value associated with these rights contributes to the incentive to produce and distribute works. Without copyright law, the financial reward to authors and publishers would be substantially eroded because the economic value of intellectual property is easily misappropriated.¹⁵⁸ Lacking copyright protection, the creator of a work would face competition from free-riders who copy and sell the work. Competition would drive the price of the work toward the marginal cost of reproduction. The author and publisher might not be able to cover the fixed costs of publishing the original work. The main concern is that without the financial incentive provided by copyright the work might not be produced. A related concern is that misappropriation discourages high levels of

¹⁵³ check cite *Syufy Enterprises v. American Milticenima, Inc.*, 793 F.2d 990, 994-5 (9th Cir. 1986)

¹⁵⁴ cite

¹⁵⁵ See Niva Elkin-Koren, *Copyright Policy and the Limits of Freedom of Contract*, 12 BERKELEY TECH. L. J. 251 (1997) (a broad licensing regime even with price discrimination limits access too much); Netanel, *supra* note 150, at 295.

¹⁵⁶ See Fisher *Internet*, *supra* note 2, at 1239 n. 86 (raises the question of whether high valuation customers are likely to create transformative works); *id.* at 1251 (relying on fair use to promote transformative works).

¹⁵⁷ See Julie Cohen, *A Right to Read Anonymously: A Closer Look at "Copyright Management" in Cyberspace*, 28 CONN. L. REV. 981 n. 150 (1996) (expressing mixed feelings about price discrimination, but acknowledging the benefit of discriminatory prices favoring education and research). For similar views developed in the context of proposed database legislation see J. H. Reichman & Pamela Samuelson, *Intellectual Property Rights in Data*, 50 VAND. L. REV. 51, 116 (1997) (price discrimination in database markets might favor academic users); *id.* at 158 (suggesting legal uncertainty about whether academic use is fair use will lead database sellers to price discriminate in favor of academic users).

¹⁵⁸ See Sterk, *supra* note 89, at 1204 (copyright law is not easily explained by the incentive theory); *id.* at 1214 (photos are unlikely to respond to the copyright incentive since most of the reward comes from a contract with a particular buyer); *id.* at 1214 (no incentive is required for copyrightable advertising works); *id.* at 1226 (architectural works are like photos).

investment by authors and publishers.¹⁵⁹ Suboptimal investment means that the quality of the works is too low when the free-rider problem does not completely choke off production.¹⁶⁰

Commentators who support expanded copyright protection of authors and publishers are inclined to praise price discrimination and support facilitating policies.¹⁶¹ They make a pair of arguments concerning incentives to invest in copyrighted works. First, price discrimination raises profit to copyright owners and attracts more investment to copyright dependent industries.¹⁶² Second, broad property rights and widespread price discrimination will eliminate investment distortions within copyright dependent industries between different types of works.¹⁶³ The first claim is beyond dispute, and the second is difficult to evaluate without more empirical evidence.¹⁶⁴ What I find more interesting is the often unstated claim that current investment is too low and needs to be raised.

How do we know that current investment is too low? The standard argument posits:

- (1) firms will make the socially optimal investment if and only if they can appropriate all of the social value from the investment; and

¹⁵⁹ See PAUL GOLDSTEIN, COPYRIGHT LAW, §1.13.2 at 1:39 (1997) (Under copyright law a copyright owner is entitled to the whole consumer value of a work not just the minimum required to support investment.)

¹⁶⁰ See generally Jean-Jacques Laffont, FUNDAMENTALS OF PUBLIC GOODS (1988).

¹⁶¹ See Netanel, *supra* note 150, at 315-6. According to Netanel, legal scholars using standard economic analysis “maintain that copyright should lend blanket support to owner ability to engage in price discrimination among various users, so that owners can obtain their full complement of consumer surplus.” Besen & Raskind, *supra* note 5, at 5 (the extra reward created by price discrimination results in more works being produced); See Fisher *Fair Use*, *supra* note 2, at 1709, (1988) (price discrimination is desirable because it raises the reward to copyright holders while the allocative effects are ambiguous) [speaking about third degree]; Baker, *supra* note 4, at 325 (price discrimination solves the appropriability problem). *Id.* at 344 (price discrimination closes gap between social and private incentives regarding variety).

¹⁶² See Meurer, *supra* note 2, at 857 n.53 (1997).

¹⁶³ See GOLDSTEIN, *supra* note 28, at 200, 217 (The broadest copyright assures that allow authors get the largest possible share of the value they create. This eliminates distortions in investment decisions among possible copyrightable works).

¹⁶⁴ Increasing the reward to copyright holders by promoting price discrimination may distort the pattern of investment in intellectual property. Baker, *supra* note 5, at 344 (bias to investment relatively more in products that allow price discrimination) One reason is that copyright law gives broader protection to expressive content (entertainment) than to factual content (news). If the gains from increased price discrimination fall mostly to the entertainment industry, then relatively more investment will be targeted toward that industry. Baker, *supra* note 5, at 326 (copyright law tilts investment toward content with more expressive and less factual content -- more entertainment and less news). A second problem is that mass-market products distributed by multi-product firms are most likely to benefit, because those are the firms and products that are most likely to gain from price discrimination. Price discrimination is more likely for mass marketed products because they generate the large profit required to cover the fixed cost of price discrimination. Baker, *supra* note 5, at 346 (the fixed costs of price discrimination mean that it is more likely to be associated with blockbusters). Price discrimination requires a firm to produce multiple products to implement discrimination through quality differentiation, bundling, and tying. *Id.* at 346 (multiproduct firms are in a better position to price discriminate).

- (2) current investment is too low because firms appropriate less than all of the social value from a work.

Let me restate the appropriation problem in terms of some basic economic concepts. Total surplus defines in dollar terms the total social value of a copyrighted work. It reflects all costs and benefits to all members of society that are affected by the work. Total surplus is the sum of profits and consumer surplus. The social value of investment in a work is measured by the expected total surplus. The private value is measured by expected profit. The appropriation problem reflects the divergence between these magnitudes. In other words, if consumer surplus is positive then the investment incentive is too low.

Now I will apply the standard argument to three different copyright regimes. Absent any copyright protection, creators and distributors of works of authorship would have to rely on trade secrecy, technological measures to limit copying, contract law, and the marketing advantages from being first to the market¹⁶⁵ to capture part of the total surplus from their work.¹⁶⁶ These non-copyright tactics provide some investment incentive, but usually yield a profit far less than total surplus. Switching to a regime with copyright protection but no price discrimination, profit and investment incentive both grow, but profit still falls short of total surplus. Proponents of price discrimination observe that it allows copyright owners to capture more of the total surplus they generate by their effort.¹⁶⁷ In fact, perfect price discrimination allows copyright owners to capture the whole of total surplus, and thus they have a private investment incentive that matches the social incentive.

I disagree with the standard argument because I think both parts (1) and (2) are usually false. Regarding part (1), I think that the optimal incentive usually arises at some profit level that is less than expected total surplus.¹⁶⁸ The main reason is that consumer attention is a common resource. Consumer attention is an input that gets combined with expressive content to create value. Producers of copyrighted works over-harvest from that common — a particular producer does not account for the distraction his new work imposes on existing works or other new works. As a result, multiple producers sometimes race to get to the market first with essentially duplicative works. The race causes two related social harms: producers rush products to market too soon; and the duplicative investment by competing producers is wasteful.¹⁶⁹ Reducing the reward to the copyright

¹⁶⁵ See Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies and Computer Programs*, 84 HARV. L. REV. 281, 299-302 (1970) (lead time provides an incentive to create copyrighted works).

¹⁶⁶ *Id.* (incentives to produce works in the absence of copyright protection).

¹⁶⁷ See Netanel, *supra* note 150, at 315-317 (Neoclassicists support copyright owners ability to price discriminate in order to gain the greatest possible return from their works.)

¹⁶⁸ See Liebowitz, *supra*, note 1, at 187-88 (unclear whether copyright reward is too large or too small)

¹⁶⁹ See Baker, *supra* note 5, at 339 (repetitive media products cause a social loss from redundant production costs).

owner below expected total surplus alleviates the negative effects from the race to the market.¹⁷⁰

Regarding part (2) of the standard argument, I contend that the private incentive created by expected profit can easily exceed the expected social value of a work. My claim holds when there are close substitutes for a new work.¹⁷¹ I will illustrate the argument with an extreme case. A producer contemplates introducing a new product in a market niche already crowded with other similar products. The producer does not expect to attract any new buyers to this niche. But it believes that it will take substantial sales away from the current sellers. What do these assumptions imply for expected profit and expected total surplus? The diversion of sales from current sellers suggests large expected profit. The absence of new value for buyers means no new consumer surplus. Surprisingly, total surplus is zero at best and likely negative. In this example, total surplus is *not* the sum of profit and consumer surplus. It's the sum of the profit to the entrant plus the profit of the incumbents plus consumer surplus. The gain in profit to the entrant is matched by the decline in profit to the incumbents. This leads to zero total surplus. Total surplus becomes negative when the fixed costs of entry are considered. The gist of this argument still follows from less extreme assumptions. This explains why current investment in copyrighted works may be too high.¹⁷²

2. Diffusion of Copyrighted Works

The copyright goal of providing production incentives exists in tension with the goal of allocative efficiency. Allocative efficiency requires that the price of a copyrighted work be equal to the marginal cost of producing and distributing that work. Intuitively, efficiency calls for access to a work by all consumers with a valuation above the marginal cost of supplying a work. This outcome is achieved when the price equals marginal cost.¹⁷³ Ironically, free-riding is desirable from this perspective because it pushes the price toward marginal cost. Economists have long understood that an optimal copyright policy balances the dynamic efficiency concerns relating to the incentive to supply works with the allocative efficiency concerns relating to access.¹⁷⁴

¹⁷⁰ See Kaplow, *supra* note 1, at 1875 (price discrimination creates the possibility of rewards that are too high to the patentee). See Lunney, *supra* note 2, at 633 (if price discrimination is easier for copyrighted works than for other products it may lead to overinvestment in copyrighted works).

¹⁷¹ Copyrighted products usually do have close substitutes.

¹⁷² Avinash Dixit & Joseph Stiglitz, *Monopolistic Competition and Optimum Product Diversity*, 67 AMER. ECON. REV. 297 (1977). Baker, *supra* note 5, at 328-30 (divergence of private and social incentives to create product variety).

¹⁷³ Besides end users we also need to be concerned about authors of derivative works. Copyright causes allocative inefficiency because it raises the price of *inputs* used in the process of producing new copyrightable works. Allocative efficiency once again requires that the input price equal marginal cost. An optimal copyright law should balance the interests of current authors against those of future authors so continual investment in cultural growth is promoted. See Landes & Posner, *supra* note 19.

¹⁷⁴ The scope and duration of the reproduction right are instruments that can be used to achieve an optimal trade-off between the incentive goal, on the one hand, and the access and cumulative innovation goals on the other. The reproduction right deters free-riding by making copiers liable for copyright infringement. The longer the duration and the broader the scope of the copyright the greater the productive incentive. Conversely, narrow scope and brief duration promote the other two goals. In principle, these instruments can be fine-tuned to strike different accommodations with the goals of access and cumulative innovation.

Price discrimination enters the picture again because, according to price discrimination optimists, it has a desirable impact on the trade-off between incentives and access. The standard argument goes as follows. Compared to uniform monopoly pricing, price discrimination increases output and allocative efficiency as well as profit to the copyright owner. If true, this means that price discrimination allows us to escape the trade-off. The problem of course is that price discrimination may reduce output and total surplus.

As I noted earlier, most copyright pessimists are price discrimination optimists. They sometimes argue that the increased reward provided by price discrimination allows society to expand free usage of copyrighted material under the fair use privilege. The loss of profit and incentive caused by an expanded fair use doctrine can be balanced against the gains from price discrimination.¹⁷⁵

Price discrimination optimists present the positive output effect of price discrimination through four related arguments. The most common observation is that perfect price discrimination leads to the same output as the competitive benchmark: the output at which the marginal value to the buyer of the last unit produced equals the marginal cost of production.¹⁷⁶ Once this observation is made commentators usually add that perfect price discrimination is not feasible. Nevertheless, they rely on this theoretical result as a prediction that actual price discrimination will cause output to rise compared to a market with a uniform price.¹⁷⁷ The second observation is that the practice of price discrimination might open new market niches. Netanel contends that third degree geographic price discrimination might open markets in developing countries that

For example, an optimal copyright policy might have broad scope against end users but a narrow scope against input users. Further, an optimal policy might have shorter duration for one class of users.

¹⁷⁵ See Fisher *Internet*, *supra* note 2, at 1251-52 price discrimination creates high rents that allow an expansion of the fair use doctrine while maintaining current levels of reward Fisher 1240 n. 88 cites Kaplow, *supra* note 1 for the argument that the reward to deadweight loss ratio is better under price discrimination than simple monopoly pricing.

¹⁷⁶ See Fisher *Internet*, *supra* note 2, at 1234-1240 positive effects of price discrimination on the Internet Wendy Gordon, *Asymmetric Market Failure and Prisoner's Dilemma in Intellectual Property*, 17 U. DAYTON L. REV. 853 (1992) (Noting that perfect price discrimination could solve efficiency problems if it were practicable See Demsetz, *supra* note 1, at 300-06 (price discrimination and public good provision).

¹⁷⁷ See Kaplow, *supra* note, 1 at 1874-75. “[P]rice discrimination will sometimes result in increased output and thus in a more efficient allocation of resources. But contraction of output is also possible, although commentators occasionally argue (without much foundation) that expansion is more likely.” See Fisher *Internet*, *supra* note 2, at 1239-40 price discrimination leads to more output which means that more consumers have access to copyrighted works this serves the interest of distributive justice [This notion of distributive justice is based on an assumption that the new customers are getting positive surplus from entry into the market. They may get little or no surplus under schemes that approximate perfect price discrimination. On the other broad access does have social value that is not reflect in privately measured consumer surplus. The import question is which consumers are most likely to generate positive externalities. If the disfavored customers generate the majority of the positive externalities than the social impact of distribution may be bleak.] See TIROLE, *supra* note 3, at p. 145-146 Second degree price discrimination -- Two part tariffs always increase welfare over a linear tariff because the variable price falls for all types.

publishers would otherwise ignore.¹⁷⁸ Easterbrook suggests that second degree price discrimination in digital telephone directories opens the market to home users who would otherwise be excluded by a high price under a uniform pricing scheme.¹⁷⁹ The third and fourth observations present a customer effect and a quantity effect. One can argue that even if price discrimination does not open new market niches, it increases output because: new customers will be attracted in the favored market niche; or higher quantity will be demanded by customers already present in the favored niche.¹⁸⁰

There are two levels to the counterargument that price discrimination reduces allocative efficiency. A direct argument is that it actually reduces output.¹⁸¹ The explanation is that the customer and quantity effects mentioned in the preceding paragraph might easily move in the negative direction. In market niches that face higher prices because of discrimination the number of customers will fall, and the quantity demanded by those who remain will also fall. The net effect can go either way. A less direct argument holds that output expansion is not a sufficient condition for improved allocative efficiency.¹⁸² The reason is that price discrimination implies that consumers in different niches have different marginal rates of substitution for the product in question. Specifically, disfavored customers would get a greater marginal benefit from one more unit than favored customers would lose from giving up one unit. This presents an opportunity to raise total surplus through a trade, but this opportunity is lost because arbitrage is blocked. This foregone opportunity represents a source of allocative loss.

¹⁷⁸ See Netanel, *supra* note 144, at 224, 322-29 (discussing exhaustion by sale and international price discrimination).

¹⁷⁹ See *ProCD, Inc. v. Zeidenberg*, 86 F.3d 1447, 1449-50 (7th Cir. 1996). SEE KIP VISCUSI, JOHN VERNON, & JOSEPH HARRINGTON, *ECONOMICS OF REGULATION AND ANTITRUST* 279-283 (1992) (Discrimination may increase efficiency by increasing output. This is most clearly the case when discrimination results in new buyers entering a market who would be foreclosed from the market by a high uniform price.)

¹⁸⁰ TIROLE, *supra* note 3, at p. 145-146 Second degree price discrimination -- Two part tariffs always increase welfare over a linear tariff because the variable price falls for all types.

¹⁸¹ An example will demonstrate that possibility. Suppose three low valuation buyers each want one unit of some good and assign a value of 2 to the good. Suppose a single high valuation buyer assigns a value of 5 to the first unit of the good and a value of 2 to the second unit. Under uniform monopoly pricing the profit maximizing price is 2, output is 5, and revenue is 10. Under price discrimination the low valuation buyers are charged 2, the high valuation buyer is charged 5, output is 4, and revenue is 11.

¹⁸² Discrimination causes inefficiency because it makes the marginal rates of substitution differ across buyers. Disfavored buyers have a higher marginal valuation than favored buyers. If the marginal unit of output is taken from a favored buyer and given to a disfavored buyer then total value rises. See VISCUSI, VERNON, & HARRINGTON, *supra* note 176, at 279-283. TIROLE, *supra* note 3, at 137-139 Under third degree price discrimination a quantity increase is a necessary but not sufficient condition for a welfare increase, because discrimination leads to unequal marginal rates of substitution across consumers. Many lawyers using economic analysis seem to think that output increases are sure to create surplus increases. That linkage does not hold in general. With regard to price discrimination the positive efficiency effect from an increase in output may be offset by a negative efficiency caused by differences in the marginal rates of substitution between favored and disfavored buyers. See VISCUSI, VERNON, & HARRINGTON *supra* note 176, at 279-283 (Discrimination causes inefficiency because it makes the marginal rates of substitution differ across buyers. Disfavored buyers have a higher marginal valuation than favored buyers. If the marginal unit of output is taken from a favored buyer and given to a disfavored buyer then total surplus rises.)

Thus, an output decline assures price discrimination is allocatively inefficient, but the converse is not true.

3. Rent-Seeking

Economists apply the term rent-seeking to investments intended to attain or maintain rents. The rents of interest in this article are the extra profit attributable to price discrimination. Rent-seeking has negative connotations because the investments are usually socially wasteful. Price discrimination induces two types of wasteful rent-seeking costs. First, there are costs associated with preserving copyright-based rents. Firms engage in lobbying, litigation, and entry deterring practices that work to preserve their dominant position in a copyright dependent industry. Price discrimination is relevant because anything that increases rents increases the expenditures on preserving those rents.¹⁸³

Implementation cost is the second type of cost.¹⁸⁴ Social loss follows from the cost of measuring different customers' valuations, writing and enforcing contracts that prevent arbitrage, and designing special distribution systems.¹⁸⁵ Additionally, with second degree price discrimination there is the special problem of sorting cost. Under third degree price discrimination, a monopolist seller will treat each market niche separately. There is no product design distortion caused by monopoly market power, because the seller extracts its rents through the price. The sorting cost from second degree price discrimination causes inefficient choices of delivery date, quality, quantity, and permissible product use.¹⁸⁶ Let me briefly review my earlier comments on sorting cost. When delivery is the choice variable the sorting cost arises from the delivery delay for the patient buyers. For many products the optimal delivery policy is immediate availability. For example, with digital works transmitted over the Internet there are virtually no cost savings from postponing delivery.¹⁸⁷ For works that have to be

¹⁸³ Even perfect price discrimination might be inefficient because it creates bigger rents that may be offset by wasteful rent-seeking. See RICHARD POSNER, *ECONOMIC ANALYSIS OF LAW* 260 (1986); Meurer, *supra* note 2, at 857 n. 53 (positive and negative effects from rents to copyright holders).

¹⁸⁴ See Fisher *Internet*, *supra* note 2, at 1240 n. 87 Price discrimination implemented through the Internet will have low transaction costs [most copyright related price discrimination is not implemented through the Internet, although that may change. Furthermore, there wasteful design decisions concerning digital software and database products that could generate significant inefficiencies.]

¹⁸⁵ See generally, See HOVENKAMP, *supra* note 7, at 345.

¹⁸⁶ See Eric Maskin & John Riley, *Monopoly with Incomplete Information*, 15 *RAND J. ECON.* 171 (1984) (quality choice by a price discriminating monopolist). See Meurer, *supra* note 2, at 873 (the sorting condition makes second degree price discrimination less efficient than third degree) The following passage from DuPuit describes quality choice and price discrimination as practiced by nineteenth century French railroads. "It is not because of the few thousand francs which would have to be spent to put a roof over the third-class carriages or to upholster the third-class seats that some company or other has open carriages with wooden benches... What the company is trying to do is prevent the passengers who can pay the second class fare from traveling third-class; it hits the poor, not because it wants to hurt them, but to frighten the rich.... And it is again for the same reason that the companies, having proved almost cruel to third-class passengers and mean to second-class ones, become lavish in dealing with first-class passengers. Having refused the poor what is necessary, they give the rich what is superfluous." J. DUPUIT, *ON TOLLS AND TRANSPORT CHARGES* (1849). Translated in *International Economic Papers* (1952). Original version in *ANNALS DES PONTS ET CHAUSSÉES* 17. I found this quotation in TIROLE, *supra* note 3, at at 150.

¹⁸⁷ cite.

manufactured there may be some cost advantage to spreading out delivery over time, but certainly the main factor explaining the delayed release of a paper book is price discrimination not production and distribution efficiency. When quality is the choice variable the sorting cost arises because quality to low valuation buyers is degraded.¹⁸⁸ The most striking example is software with code added to disable certain features.¹⁸⁹ When quantity is the choice variable the sorting cost comes from rationing of low valuation buyers. The seller designs quantity discounts in such a way that low valuation buyers purchase less than they would under third degree price discrimination. The rationing is introduced to ease the sorting constraint and allow a higher price to the high valuation segment. When use restriction is the choice variable the sorting cost is the restriction itself. Consumer surplus is lost to low valuation buyers who are constrained in their use of a product.¹⁹⁰

V. COPYRIGHT POLICY TOWARD PRICE DISCRIMINATION

In the earlier sections I explained: the operation of price discrimination in copyright dependent industries; how features of copyright law promote or discourage price discrimination; and the normative effects of price discrimination. This section provides a bridge to the copyright policy analysis in the next section. I make general comments regarding how copyright policy should respond to concerns about price discrimination. I illustrate my comments using the *ProCD* case.

Copyright policy offers very different policy instruments from the traditional antitrust approach. The traditional approach tracks the Robinson-Patman Act: non-discriminatory pricing is mandated.¹⁹¹ The copyright approach relies on doctrinal changes that affect the market power of the copyright owner or arbitrage opportunities of buyers.¹⁹² Doctrinal changes that impede price discrimination generally involve

¹⁸⁸ See Maskin & Riley, *supra* note 186, at x (a price discriminating monopolist chooses the optimal quality for the high valuation customer and quality less than the optimal quality for the low valuation customer).

¹⁸⁹ See Raymond J. Deneckere & R. Preston McAfee, *Damaged Goods*, 5 J. ECON. & MGMT. STRATEGY 149 (1996) (code added to software to disable features in high quality version); Levine, *supra* note 97, at 15 (The Intel Celeron chip is a variant of the Pentium chip that has features disabled to reduce its clock speed.).

¹⁹⁰ I am most concerned about implementation costs when there are entry barriers and few sellers. Implementation costs are apt to decline as the number of discriminating firms in a market grows. See Lars Stole, *Nonlinear Pricing and Oligopoly*, 4 J. ECON. & MANAG. STRATEGY 529 (1995)

¹⁹¹ The Robinson-Patman Act allows deviance from uniform prices for various reasons including cost differences, and the need to meet competitive prices.

¹⁹² The compulsory license provisions of the copyright statute are exceptional however, because they regulate pricing directly. The main provisions are: Section 111 (applies to secondary transmissions by cable systems); Section 115 (applies to the reproduction and distribution of phonorecords); Section 118 (applies to non-commercial broadcasters); Section 119 (applies to satellite retransmission). A compulsory license policy may block price discrimination but does not always. If the royalty matches or exceeds the highest discriminatory price then discrimination can continue unabated. A royalty below the highest of the discriminatory prices will discourage price discrimination or at least constrict the range of discriminatory prices. See Fisher *Internet*, *supra* note 2, at 1250 n.115 opposes compulsory licensing because it discourages price discrimination.

restriction of the scope of the Section 106 rights;¹⁹³ expansion of fair use;¹⁹⁴ expansion of the first sale doctrine;¹⁹⁵ restriction of the scope of the DMCA,¹⁹⁶ and broad application of copyright misuse and preemption.¹⁹⁷

The first step in policy analysis is assessment of the direct effects of the policy instruments on social welfare. Recall that efficiency judgments are based on: (1) proper incentives to create; (2) efficient diffusion; and (3) attention to rent-seeking costs. Distributional judgments depend on identifying the winners and losers from price discrimination, and deciding how to balance the interests of the winners against the losers.

The second step in policy analysis is assessment of positive and negative collateral effects. Negative effects arise when copyright policy discourages practices that might be related to price discrimination, even though the practices have beneficial effects unrelated to discrimination such as risk sharing or productive efficiency.¹⁹⁸ For example, usage based pricing is valuable to both sellers and buyers because it removes uncertainty about valuation. A buyer has a better understanding of her valuation after she begins to use a work. If she learns she really likes it then she ends up paying more through repeated use. Positive collateral effects arise when copyright policy discourages practices that cause harm unrelated to price discrimination.¹⁹⁹ For example, digital technologies used to implement price discrimination may also pose a threat to privacy.²⁰⁰ To the extent that copyright policy is used to discourage price discrimination it might also discourage adoption of intrusive technology.²⁰¹

The final step in policy analysis is assessment of whether price discrimination can be controlled. The danger inherent in a policy that discourages price discrimination by

¹⁹³ For my policy analysis of the reproduction right and temporary digital copies *see* text accompanying notes x and *infra* note x. For my policy analysis of the derivative right *see* Part VI.B. For my policy analysis of the public performance right *see* Part VI.A.

¹⁹⁴ *See* Part VI.C.

¹⁹⁵ *See* Parts VI.C and VI.D.

¹⁹⁶ *See* Pamela Samuelson, *Intellectual Property and the Digital Economy: Why the Anti-Circumvention Provisions Need to Be Revised*, 14 BERKELEY TECH. L. J. 519 (1999); Glynn Lunney, Jr., *The Death of Copyright: Digital Technology, Private Copying, and the DMCA*, forthcoming VA. L. REV. (2001).

¹⁹⁷ For my policy analysis of preemption *see* text accompanying notes 210-19; David Nimmer, Elliot Brown, & Gary N. Frischling, *The Metamorphosis of Contract into Expand*, 87 CALIF. L. REV. 17 (1999) (preemption); Mark A. Lemley, *Beyond Preemption: The Law and Policy of Intellectual Property Licensing*, 87 CAL. L. REV. 111 (1999) (preemption and misuse).

¹⁹⁸ *See* GOLDSTEIN, *supra* note 28, at 218-19 Copyright holders can develop licensing schemes to reduce transaction costs. Creating a fair use right undercuts the incentives for the appropriate institutions to develop. *See* Merges.

¹⁹⁹ *See* Kaplow, *supra* note 1, at 1877-79 (territorial restrictions in patent licenses might implement price discrimination, but they might also be used to implement a cartel). Price discrimination supports collusive pricing because it supports localized competition for marginal customers and high prices for inframarginal customers. It weakens collusive agreements because cheating is harder to detect.

²⁰⁰ *See* Cohen, *supra* note 154, at 981.

²⁰¹ On the other hand, the intrusive technologies might be chosen as a substitute barrier to arbitrage if copyright law is too weak.

making arbitrage easier is that it might displace benign price discrimination into other more pernicious forms.²⁰² If a seller cannot rely on copyright law to block arbitrage it might rely instead on technology, product design, marketing methods, or vertical integration. Digital technology promises potent tools for control of both resale arbitrage and certain kinds of personal arbitrage.²⁰³ It is possible to limit the number of times a digital work is used,²⁰⁴ and limit its use to a particular machine or user.²⁰⁵ Differentiated product quality is often used to block arbitrage and support price discrimination. Earlier I explained book price discrimination and quality differentiation in the form of hard back versus paperback books,²⁰⁶ and quality degradation that promoted price discrimination in the software industry.²⁰⁷ Leasing and other marketing methods block arbitrage by converting durable goods into services that cannot be resold.²⁰⁸ Finally, a firm that sells intermediate products to a small number of downstream firms might integrate downstream. Price discrimination is achieved and arbitrage is avoided by setting an internal transfer price that differs from the external price.²⁰⁹ Of course, it is possible that

²⁰² One also has to consider the possibility that the current form of price discrimination will persist despite policy intervention. Even when copyright policy instruments impede price discrimination by promoting arbitrage, a seller may continue to discriminate despite the costs, because of the allure of higher profits. Conversely, even when aided by favorable copyright and contract law, sellers sometimes find that measurement costs are still large. If measurement is too costly, or the inferences that can be drawn from the measurements are too unreliable, then price discrimination may be unprofitable. Usually, changes in copyright law that impede price discrimination will discourage some new price discrimination, and will decrease the degree of price discrimination by some sellers, but many sellers will be unaffected.

²⁰³ It is now feasible to measure factors like frequency and duration of the use of a work. See GOLDSTEIN, *supra* note 28, at 200 (1994) Goldstein speculates that because new transmission technology will be able to “keep a record of every selection a subscriber makes, and the price he paid for it, copyright owners will have a far more precise measure of the demand for their products than they do today.” Netanel, *supra* note 150, at 295 (1996) (digital technology may make highly refined price discrimination possible). *Id.* at 384. “Digital content providers enjoy an unprecedented capacity, through a combination of contract, digital encryption, and electronic monitoring, to prevent unauthorized access to and uses of expression and information stored in computer databases.” Encryption, metering and on-line licensing offer the potential to perfectly protect digital works. White Paper at 219. Tom W. Bell, *Fair Use vs. Fared Use: The Impact of Automated Rights Management on Copyright’s Fair Use Doctrine*, 76 N. C. L. REV. 557 (1998) (automated rights management will encourage price discrimination).

²⁰⁴ It is possible to create software that can only be used a certain number of times or until a certain date. See *supra* note 65. See also Meurer, *supra* note 2, at x; Bell, *supra* note 198, at x.

²⁰⁵ *Id.*

²⁰⁶ See *supra* note 4.

²⁰⁷ See Raymond J. Deneckere & R. Preston McAfee, *Damaged Goods*, 5 J. ECON. & MGMT. STRATEGY 149 (1996) (explaining that profitable price discrimination might involve degrading a high quality product to create a lower quality product).

²⁰⁸ Use sensitive charges are possible under the status quo. One way is to combine hardware and software in such a way that the software cannot be copied. The combination is leased and the rental depends on the intensity of use. Intensity of use is measured directly by firms like Lexis and Westlaw who charge based on the duration of use of their databases and the number of documents that are downloaded. If the buyer purchases access to a remote database, each connection to the database and even the time spent viewing can be measured. Arbitrage is unlikely to have much impact on this type of discrimination. A disfavored buyer could log onto a favored buyer’s account, but there would be no cost savings as long as the price per view was constant or increasing.

²⁰⁹ TIROLE, *supra* note 3, at p. 141 Rules against price discrimination may lead to vertical integration. Teece explains that insecure intellectual property rights may lead to vertical integration. cite

the alternative price discrimination strategies are more efficient (even though less profitable). The key point is that eradicating price discrimination may be very difficult.

Now it is time to synthesize my policy analysis of the price discrimination practiced by *ProCD*.²¹⁰ Recall that ProCD sold two versions of digital telephone directories on CD-ROM. The low priced version included a consumer use restriction. The policy question is whether the consumer use restriction should be enforced.²¹¹ End-use restrictions are a firmly established feature of copyright licenses and violation of end-use restrictions results in copyright infringement.²¹² Since the database in *ProCD* was uncopyrightable, the consumer use restriction could only be enforced (if enforceable at all) with the aid of weaker contract law remedies.

Direct effects. Enforcement of the consumer use restriction facilitates a form of price discrimination that probably causes a loss of social welfare.²¹³ The distributional effects are probably a wash,²¹⁴ and the output effect could be positive or negative.²¹⁵ The main harm arises from increased profit yielding an excessive incentive to create directories. The socially optimum incentive for producing digital telephone directories is quite small. The incentive should be small because the nature of the product limits diversity. Multiple entrants would make redundant products and the fixed cost of creating the imitating products would be wasted. Refusing to enforce consumer use restrictions reduces the expected profit to directory producers, because it discourages price discrimination or at least makes it less profitable. With the benefit of hindsight we now

²¹⁰ I limit my analysis of *ProCD* to price discrimination aided by a license with a consumer use restriction. Price discrimination was discussed extensively by Judge Easterbrook, but the key issue in the case is really the license term that prohibited copying and Internet distribution of an uncopyrightable database. This license term raises a copyright preemption issue even in the absence of price discrimination. Whether this contractual barrier to horizontal competition should be preempted is outside the scope of this Article. For a discussion of horizontal competition in the database market *infra* note 81.

²¹¹ There is another copyright policy issue in the background that bears on price discrimination: the issue of whether a database is copyrightable subject matter. Copyrightable subject matter excludes facts and routine selection and arrangement of facts. *See Feist v. Rural Telephone*, 506 U.S. 984 (1992). Thus, the market power that a database creator can obtain through copyright law is limited, and so the potential for price discrimination is limited.

²¹² *See* MELVILLE B. NIMMER, DAVID NIMMER, NIMMER ON COPYRIGHT, §10.15[A] (19xx) Public performance and display uses are directly limited by Section 106.

²¹³ A definitive social welfare analysis is impossible due to the absence of empirical evidence. The social welfare loss I describe is in comparison to the alternative of a uniform price. I discuss forms of price discrimination that do not rely on end-use restrictions in the next paragraph.

²¹⁴ The distributional effects of price discrimination by ProCD are not very interesting. The disfavored buyers are business customers. Consumer users might benefit, but the analysis in Section II showed they might not gain anything. The consumer users are people who apparently make many long distance phone calls, own computers with CD-ROM drives (in the mid 1990s), and are sophisticated enough to locate and use a digital telephone directory. In other words, the consumers are probably well educated are relatively well off. I suspect that most software and databases that have dual consumer and business use appeal to fairly affluent consumers.

²¹⁵ I discussed the impact of consumer use restrictions and price discrimination on output and total surplus in Section II. The examples refer to software but they are also applicable to the digital directory in *ProCD*. The example presented in Table One shows that total surplus may fall, and Table Two shows the opposite result is possible. I am not sure which result is applicable.

know that digital telephone directories flourish on the Internet without price discrimination—funded by advertising revenue.²¹⁶ Further harm arises from the implementation costs associated with the restrictive contract terms. One implementation cost is the monitoring and litigation cost associated with enforcement against buyers like Zeidenberg. There is also a cost borne by customers who choose the consumer product and whose usage is constrained.²¹⁷

Indirect effects. I do not see any collateral effects from a refusal to enforce the consumer use restriction, but a shift to other forms of price discrimination is possible. Price discrimination was the main (and perhaps only) purpose of the consumer use restriction in the ProCD contract.²¹⁸ At the Seventh Circuit, the restriction was pressed into service to bar Zeidenberg's posting of ProCD's data. That was not necessary, since the ProCD contract explicitly prohibited posting the directory on the Internet. If consumer use restrictions are prohibited, a company like ProCD might abandon price discrimination in favor of uniform pricing, or it might use another strategy to block arbitrage and price discriminate. The most likely strategy would involve degrading the quality of the consumer product, and charging a high price for the high quality business product. Easterbrook suggested using two year old data in the consumer version of the telephone directory.²¹⁹

I have presented an economic analysis of price discrimination in *ProCD* and argued on policy grounds that the consumer use restriction should not be enforced. The most likely harm would be a shift to price discrimination based on quality differentiation. I doubt the implementation cost of this new form of price discrimination is much larger than the form practiced by ProCD. I caution the reader not to read too much into this analysis. Ultimate evaluation of the use restriction depends on certain empirical questions. Does price discrimination create an excessive incentive to create directories? Will directory sellers shift to other forms of discrimination? If yes, will implementation costs rise significantly? If no, does uniform pricing cause output to rise or fall? My guess is that refusal to enforce the consumer use restriction would have the desirable effect of reducing an excessive incentive to produce directories. The best evidence for my view is the existence of free directories on the Internet showing that the necessary incentive is not great.

²¹⁶ Cf. Gordon, *supra* note 2, at 1384 (even if Zeidenberg was allowed to copy and post the directory it is likely ProCD would have an adequate incentive based on first mover advantages to create and update the directory, therefore, prohibiting competition by Zeidenberg might have made consumers worse off).

²¹⁷ Besides implementation costs other types of rent-seeking costs are likely. Extra profit to digital directory producers and other database providers from price discrimination might be dissipated by lobbying for a database protection bill.

²¹⁸ Why are end-use restrictions included in copyright licenses? To control the creation of derivative works. To preserve the copyright owner's reputation. To minimize tort or breach of warranty liability. To stop software modification that might diminish the performance of leased computer equipment. And, usually, to facilitate price discrimination.

²¹⁹ The efficiency loss from this strategy is probably small. I suspect that the extra cost of producing and distributing the two different versions is small, and the loss to consumers is also small. Occasionally they would need to call directory assistance.

Finally, let me broaden my analysis to the issue of enforcement of consumer use restrictions in copyright licenses. I generally oppose consumer use restrictions in contracts covering works entitled to no or thin copyright protection, but I might permit them in contracts covering works entitled to thick protection.²²⁰ Thin protection means the reproduction right is limited to nearly literal copies and the fair use defense is more likely to be applied. Thick protection offers broader copyright scope. Fact intensive or functional works receive thin copyright protection, more expressive works like movies and music receive thick protection. I treat works entitled to thick protection differently because such works might need the strong productive incentives created by the high profit from price discrimination. The exclusion of telephone directories and similar works from copyright protection reflects an implicit judgment that it is bad policy to provide firms in those markets with the productive incentive associated with copyright protection. Functional and fact intensive works that are copyrightable only get thin protection because they usually do not require large incentives and should not get extra profit from easy price discrimination. On the other hand, the extra incentive from price discrimination might be desirable in markets for more expressive works entitled to thick protection. I will comment more on this point in Part VI.

VI. APPLICATIONS

A. Performance Rights

The public performance right embodied in Section 106(4)²²¹ is a significant source of revenue for the music and movie industries, yet there is little economic analysis explaining its purpose.²²² In this section I show how the performance right facilitates price discrimination. I will also comment on the appropriate scope of the right. Let me set the stage by describing typical instances of videotaped movie performance. Case One. Joe rents a videotape and invites a group of friends to come to his home to watch the movie. Case Two. Joe rents a hotel room equipped with a VCR. He rents a videotaped movie at the front desk and invites his friends to watch the movie with him. Case Three. Joe and his friends go to a bar with no cover charge to watch a videotaped movie. Case Four. Joe and his friends go to a bar and pay a cover charge to watch a videotaped movie. In each of the four cases the movie producer gets some revenue from the sale of the videotape that Joe and his friends watch. The question I pursue in this section is whether the movie producer should also get revenue from a movie performance royalty. The statute clearly excludes Case One from the public performance right because the performance is not considered public. Case Four looks a bit like a movie theater and is certainly covered by the statute. Case Three might have been a bit controversial under the

²²⁰ Warranty or tort liability is one factor that might justify a consumer use restriction in a contract covering a work entitled to thin protection. A non-discriminating seller might charge a higher price for an identical product without the consumer use restriction. The price differential is not discriminatory if goods sold to business customers generate higher expected liability payments.

²²¹ 17 U.S.C.A. § 106 (1995). (Section 106(6) recently added a digital public performance right for sound recordings.)

²²²

1909 Copyright Act²²³ but under the 1976 Act it is clearly a public performance. Case Two is close to the borderline; case law indicates the hotel setting is not sufficiently public to make this a public performance.²²⁴ A broad definition of public performance might include all four cases.²²⁵ In this section I explain why the movie industry cares about the performance right — why the industry wants to be able to charge for the sale of the videotape *and* the public performance of the videotape. I will also explain how the boundary of the performance right should be drawn — why it is socially desirable to exclude performances like Cases One and Two from the scope of Section 106(4).

The public performance right promotes price discrimination in a fairly sensible way. The right allows music and movie copyright owners to distinguish between high valuation commercial users who engage in public performance and low valuation consumer users. The right also allows copyright owners to distinguish between different kinds of public users and implement fine-grained third degree price discrimination. Without the performance right both industries would still pursue price discrimination, but implementation costs would probably increase significantly.

The movie industry combines restrictions on the type and duration of authorized public performances with a time-based price discrimination scheme. Movies are released in different formats and outlets in a way that roughly segregates viewers according to their valuation. Movie producers then discriminate directly against the outlets that engage in public performance. Ordered by valuation, the major categories of public movie performers are first-run movie theaters, pay-per-view and premium cable, second-run movie theaters, and free television and public videotape performers. The performance right helps the movie industry enforce public performance restrictions with the aid of

²²³ See NIMMER, *supra* note 204, at § 8.15[A] 8-192.14 (under the 1909 Copyright Act nonprofit performances did not infringe copyright). There was much controversy about whether performances in private clubs, factories, and other exclusive venues should be considered public under the 1909 Act. *Id.* at § 8.14[C][1] 8-186 (disagreement under the 1909 Act about whether performance in clubs, factories, and other semi-public places are public). *Herbert et al. v. The Shanley Company; John Church Company v. Hilliard Hotel Company et al.*, 242 U.S. 591; 37 S. Ct. 232; 61 L. Ed. 511 (1917) (finding public performance right violated by live background music in restaurants or banquet halls). An avalanche of cases has addressed the question of whether all music performances in stores and restaurants are public.

²²⁴ See *Columbia Pictures Industries, Inc. v. Professional Real Estate Investors*, 863 F.2d 59 (9th Cir. 1989) (hotel rental of videodiscs to guests was not a public performance). Other semi-public videotape performances have been included within the scope of Section 106(4). See *e.g.*, *Columbia Pictures Industries, Inc. v. Red Horne, Inc.*, 749 F.2d 154 (3d Cir. 1984) (public performance in private screening booths at a video rental store); *Columbia Pictures Industries, Inc. v. Aveco, Inc.*, 800 F.2d 59 (3d Cir. 1986) (still a public performance if rooms and videotapes are rented separately).

²²⁵ Under such a broad definition Joe would be liable to pay a performance royalty in the first two cases. The bar owner would be liable in the third and fourth cases. The video rental store or hotel clerk would probably collect the royalty from Joe as part of the videotape rental fee. The video rental store and hotel would probably be indirectly liable for an unauthorized public performance by Joe so they would have a strong incentive to collect the license fee and pass it along to the copyright owner.

strong copyright remedies.²²⁶ The performance right also helps the industry block public performance of low priced consumer videotapes intended for private viewing.

The music industry mostly relies on two organizations to license the public performance right: the American Society of Composers, Authors and Publishers (ASCAP) and Broadcast Music, Inc. (BMI). ASCAP and BMI each practice sophisticated third degree price discrimination based on portfolios containing millions of music composition copyrights.²²⁷ The standard music performance license from each organization gives blanket permission to perform any music covered by the organization's portfolio of copyrights.²²⁸ The main customers are bars, restaurants, and radio and television stations. The fee for a license depends on factors like the size of a bar or restaurant,²²⁹ or the size of the market served by the media outlet.²³⁰ These factors can be verified by ASCAP and BMI and are positively correlated to buyers' valuations.²³¹

Suppose the public performance right was deleted from copyright law, how would the movie and music industries respond?²³² One strategy would be to recreate the right contractually. Much like the restrictions in ProCD, the seller of a CD or DVD could sell two versions. The first version would sell for a low price and it would include a prohibition against public performance. The second version would sell for a high price and allow public performance. This strategy could support the same kind of second degree price discrimination practiced by ProCD. This strategy faces the same legal uncertainties and the same implementation costs that I discussed in reference to ProCD.²³³ The contract would probably be preempted or otherwise unenforceable.²³⁴ If it were enforceable, then ASCAP and BMI would find new work negotiating and enforcing

²²⁶ See e.g., *Metro Goldwyn Mayer Distrib. Corp. v. Bijou Theatre Co.*, 3 F. Supp. 66 (D. Mass. 1933) (allowing claim for violation of performance right by movie exhibitor who violated terms of exhibition contract).

²²⁷ See MARSHALL LEAFER, *UNDERSTANDING COPYRIGHT LAW*, §8.22 (1995) (A consent decree with the Department of Justice prohibits ASCAP from discriminating against similarly situated licensees).

²²⁸ The blanket license itself could be a tactic used to achieve price discrimination. See the discussion of block booking *infra* at . More likely blanket licenses are used simply to reduce the number of licenses from thousands to one.

²²⁹ Licensing fees are based on several factors, including seating capacity, drink prices, type of performance, music budget, number of hours music is performed, whether admission is charged, and gross income. MICHAEL FINK, *MUSIC IN CONTEMPORARY LIFE* 53 (1989).

²³⁰ Local stations pay ASCAP a fee amounting to 1 percent of the station's gross income. Networks generally pay a flat fee of several million dollars. *Id.*

²³¹ See Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CAL. L. REV. 1293, 1335 (1996) ("Currently, tremendous effort goes into structuring a royalty arrangement with each industry that reflects the value of music in that industry and includes realistic collection techniques.").

²³² Musical compositions had been covered since 1831, but a performance right in musical compositions was not added to the statute until 1897, in 29. Stat. 481. GORMAN & GINSBURG, *supra* note 90, at 7. The performance right to music was not much enforced until after the 1909 Act. *Id.* at 499. *Id.* at 7 (Musical compositions had been covered since 1831, but a performance right in musical compositions was not added to the statute until 1897, in 29. Stat. 481); *Id.* at 499 (The performance right to music was not much enforced until after the 1909 Act).

²³³ See *supra* Part II.D.

²³⁴ Cf. Nimmer, *et al.* *supra* note 192; Lemley *supra* note 192.

music and video sales agreements. Implementation costs would surely be much higher than under the status quo.

If the movie industry could not recreate the public performance right via contract it would price discriminate in other ways. The first challenge for the studios would be to preserve an exclusive first-run in theaters. That does not seem too difficult. Studios would lease movie reels to each exhibitor and prohibit any transfer.²³⁵ Leasing rather than sale cuts arbitrage opportunities.²³⁶ In the next phase of price discrimination, the studios would enter similar contracts with pay-per-view and premium cable television outlets. I am not sure about the third marketing phase. One strategy would be to sell videotapes at a relatively high price.²³⁷ The intended market would be video rental stores, but television outlets could purchase videos and present the movies. Competition from free television would depress the demand for video rental and the revenue the movie industry could collect from that market. The absence of the public performance right would also mean an end to royalties from old movies performed on television. I think the industry would delay the release of movies to video or DVD formats. That would increase ticket revenue in theaters and licensing revenue from pay-per-view and premium cable, and help recover some of the revenue lost from rental of videotape. To summarize, the main effect of the hypothetical end to the public performance right is continued price discrimination with higher implementation costs. Negotiation and enforcement costs would be higher with exhibitors and television outlets, and the costs of the delayed release of consumer movie formats would be large.

Music copyright owners would respond to a hypothetical end of music performance rights in two ways. First, they would follow the time-based method of price discrimination used in the movie industry. Music would sell initially at a high price with the expectation that the buyers will use the music for public performance. The industry might offer a sequence of relatively high prices that decline over time in order to sort different classes of public performance uses. Radio stations would have the highest value and be most impatient to get access to new music. They would purchase at the highest price. Next, bars and restaurants and other public users would purchase at an intermediate price level. Finally, consumers would enter the market when the price falls to something

²³⁵ Movie producers have long relied on leases to implement price discrimination. Higher rental rates are set for more profitable exhibition locations, and often lease rates are simply a fraction of ticket revenue. Mark Litwak, *Forward* to THU LUKK, *MOVIE MARKETING: OPENING THE PICTURE AND GIVING IT LEGS* xii (1997) (distributors and exhibitors each get about half of the box office gross).

²³⁶ Studios could rely on the reproduction right under Section 106(1) to deter an exhibitor from making copies from a movie reel. Copying onto videotape or DVD would be a necessary step to reach the consumer market. Vertical integration aids price discrimination. If a seller integrates downstream with one class of buyers, then there is no danger of arbitrage because one side of the arbitrage market disappears. In the first part of the twentieth century, movie producers vertically integrated in movie exhibition. Cite. They tended to control the larger and more luxurious theaters. Cite. By controlling most of the high valuation movie theaters, movie producers had less reason to worry about arbitrage. Previously, some exhibitors would share leased movies in violation of their lease agreement.

²³⁷ THU LUKK, *MOVIE MARKETING: OPENING THE PICTURE AND GIVING IT LEGS* 53 (1997) (In May of 1996, the video *GoldenEye* was offered at a wholesale price of \$60 to \$65. Six months later the video retail price was cut to \$19.98 for mass distribution.)

close to the current price level. This coarse style of price discrimination would cost the music industry substantial profits. Further, the social cost of delay in consumer purchases would probably be large.

A second response by the music industry to the end of public performance rights might be vertical integration into radio. Without the performance right, radio stations would probably capture a large fraction of the economic surplus derived from music. The music industry would have an incentive to integrate downstream to regain some of the surplus. Time-based price discrimination is easier to implement if the first step in the process simply involves in-house release of new music. We should treat vertical integration motivated by elimination of the public performance right as a social cost. Under the status quo, we do not observe this type of vertical integration; apparently it is inefficient. Despite the inefficiency, music companies would vertically integrate if they could appropriate enough of the surplus from public music performance to offset the organizational costs of inefficient integration.

The virtue of the public performance right is that it facilitates a relatively benign form of price discrimination and forestalls other inefficient forms of price discrimination. Aided by this new understanding of the performance right, I will now consider the question of the proper scope of the right. The scope of the right is hotly contested. Congress frequently adjusts the scope of exemptions to the performance right,²³⁸ and the meaning of both *public* and *performance* are frequently litigated.²³⁹ Narrow interpretation

²³⁸ The 1976 Copyright Act broadened the definition of performance. Transmission, retransmission and reception of a television or radio broadcasts constitute performances. “[A]ny means of rendering a copyrighted work, whether directly or indirectly through a chain of communication devices, constitutes a performance.” See GORMAN & GINSBURG, *supra* note 90, at 505. The Act reversed the holding in *Teleprompter Corp. v. CBS*, 415 U.S. 394 (1974) (cable company microwave transmissions to deliver distant signals are not a performance). The *Teleprompter* opinion exhibits a tone that suggests skepticism about using the performance right to facilitate price discrimination. The copyright owners argued that cable dilutes the profitability of syndication of television programs for “second run” showing, because cable systems “are allowed to import programs and rechannel them into secondary markets.” *Id.* at x. The Court suggested that “[i]nstead of basing advertising fees on the number of viewers within the range of direct transmission ... broadcasters whose reception ranges have been extended by means of ‘distant’ signal CATV rechanneling will merely have a different and larger viewer market.... From the point of view of the copyright owners, such market changes will mean that the compensation a broadcaster will be willing to pay for the use of the copyrighted material will be calculated on the basis of the size of the direct broadcast augmented by the size of the CATV market.” *Id.* at x. The Court failed to note that television producers probably wanted to practice geographic price discrimination, and that distant signals delivered by cable companies aggregated local markets that used to be separate.

Section 111 of the Copyright Act exempts certain secondary media transmissions and provides a compulsory license for others. For example, Section 111(a)(1) exempts transmissions received by a hotel or apartment house that are retransmitted to individual units in the building. See GORMAN & GINSBURG, *supra* note 90, at 537. Other subsections of Section 111 provide compulsory licenses for cable and satellite television.

²³⁹ Under the 1909 Act the performance right was limited to performances that were “for profit.” Suits by ASCAP established that music played at a silent movie at no extra charge was for profit, *see*, *M. Witmark & Sons v. Pastime Amusement Co.*, 298 F. 470 (1924), and music played for diners at no extra charge was for profit *see* *Irving Berlin, Inc. v. Russo*, 26 F.2d 150 (1928). The 1976 Act discarded the “for profit”

of these terms reduces the scope of the public performance right, broad interpretation expands the scope.

To achieve the benefits I ascribe to the public performance right we do not need the broadest possible scope of the right. Transaction costs are an important factor limiting the appropriate scope of the performance right.²⁴⁰ The best choice in terms of social welfare is probably to exclude marginal public performers from 106(4) liability. The profit to the copyright owner from their inclusion is small and it comes at the cost of a relatively large drop in total surplus. I will illustrate with the example in Table Three. I assume that there are five potential buyers of a public performance license for a particular copyrighted musical composition. Suppose that the copyright owner can practice perfect price discrimination and the transaction cost associated with each transaction is 1. If all five potential buyers are subject to a broadly defined performance right, then the copyright owner will license V, W, X, and Y, but not Z. Potential buyer Z is excluded because the transaction cost exceeds Z's valuation. The total profit is 23, and that is also the total surplus. Now suppose a narrow definition of the performance right excludes Y and Z, and they can each engage in a public performance for no fee.²⁴¹ The seller continues to perfectly price discriminate against V, W, and X and earns a profit of 22. Total surplus rises to 24.9. The gain in total surplus arises because Y avoids a transaction cost of 1 and Z engages in a public performance and gets a benefit of 0.9, thus total surplus rises by 1.9.

Table Three

Buyer	V	W	X	Y	Z
Public Performance Valuation	10	8	7	2	0.9
Transaction Cost	1	1	1	1	1

The message from this example is that the scope of the performance right should be limited to maximize social welfare. Let me return to the cases at the beginning of this section involving Joe and his friends. Case One involves a low valuation performance comparable to buyer Z. The movie industry extracts surplus from the private performance

requirement suggesting a broader scope of the performance right, but cases under the 1976 Act go both ways. *See supra* note 203.

²⁴⁰ My transaction cost analysis here is similar to Gordon's analysis of fair use. *See generally* Gordon, *supra* note 18. Besides transaction costs the scope of the performance right should be sensitive to technical change. The law has adjusted the definition of performance over time to include important new formats for public performance of copyrighted works. The right should be defined so that it is neutral with respect to performance formats; otherwise copyright owners may distort how they produce and distribute their works to avoid privileged formats.

²⁴¹ Of course, the seller avoids any transaction cost of dealing with Y and Z.

of videotapes via sales to video rental stores. After paying a movie rental fee there is not much surplus left to extract from Joe. The performance right would be essentially redundant. I think Case Two is hard to distinguish from Case One. The hotel acts like a video rental store and the same rule should apply. Arguably, Joe might have a higher demand for videotape rental when he is traveling than when he is at home. But his valuation is probably still relatively low, maybe comparable to buyer Y instead of Z. The movie industry might gain a small profit by charging Case Two users a performance royalty but I doubt that such a charge is socially justified in light of the transaction costs. In Cases Three and Four the bar owner has a higher valuation for the performance right that probably justifies liability.²⁴²

Section 110 of the Copyright Act contains exemptions for various kinds of public performers. One exemption excludes small stores with simple sound equipment from the public performance right.²⁴³ Those stores are apt to have low valuations for the performance right, like buyers Y and Z, and total surplus is higher if they are placed outside the scope of the property right. The transaction costs of negotiating a license with a store comparable to Y eats up most of the surplus, and the transaction costs of negotiating with a store comparable to Z blocks the transaction completely. The same rationale justifies the Section 110 exemption that applies to teaching and religious ceremonies.²⁴⁴

B. Tying, Merchandising, and Bundling

Antitrust scholars have long appreciated that a multi-product firm with market power can jointly market its products in various ways to implement price discrimination.²⁴⁵ I will analyze three types of multi-product price discrimination relevant

²⁴² A full analysis of Cases Three and Four would consider whether the increased incentive provided to the movie industry from the extra profit is desirable, and whether the industry could discriminate against bar owners without the aid of the performance right. I discuss the incentive issue in the next section.

²⁴³ 17 U.S.C.A. § 110(5) *Cf* Twentieth Century Music Corp. v. Aiken, 422 U.S. 151 (1975) (A radio broadcast through four speakers in a fast-food restaurant did not constitute a performance). Congress recently enacted detailed provisions to provide additional guidance in this area. *See* NIMMER, *supra* note 204, at § 8.18[C][2] (Fairness in Music Licensing Act revises 110(5) with detailed rules).

²⁴⁴ Teaching is exempted under Sections 110(1) and 110(2) and religious ceremonies under Section 110(x). Besides transaction costs, the teaching and religious ceremony exemptions can be justified in terms of a public interest. The transaction or public interest rationale also applies to libraries. The Copyright Act does not provide an exemption for libraries to publicly perform videocassettes, however, perhaps they are exempt under the teaching exemption of § 110(1). The Los Angeles County Public Library did not take any chances. It obtained a performance license from MGM/UA. JEROME K. MILLER, USING COPYRIGHTED VIDEOCASSETTES IN CLASSROOMS AND LIBRARIES 30-9 (1984).

²⁴⁵ William E. Kovacic EXCLUSIVE DEALING, FULL LINE FORCING, AND TIE-INS*38th Annual Advanced Antitrust Seminar Distribution and Marketing Corporate Law and Practice Course Handbook Series 1053, 1060 Practising Law Institute PLI Order No. B0-005W January, 1999 (“Scholars disagree over whether firms should be allowed to use tying to facilitate price discrimination. Some emphasize that price discrimination, by encouraging the monopolist to raise output, curbs the misallocation of resources from monopoly. Others say price discrimination can result in wealth transfers from consumers to producers and contradict the aim of Congress to reserve such surplus for consumers.”) *See* HOVENKAMP, *supra* note 99, at 423 (“the presence of price discrimination has generally been irrelevant to judicial analysis [of tie-ins]”).

to copyright dependent industries: tying, merchandising, and bundling. Let me start by defining and illustrating each marketing practice.

Tying occurs when a producer offers product X only on the condition that customers also take product Y from the producer.²⁴⁶ The producer must have market power in the market for the tying good X.²⁴⁷ For example, International Salt leased a patented canning machine (X) on the condition that customers purchase their requirement of salt (Y) for use in the machine from International Salt.²⁴⁸ Normally, contracts involving intellectual property are treated deferentially under the antitrust laws,²⁴⁹ but that deference does not extend to tying contracts;²⁵⁰ tying may violate the antitrust law even when the tying good is protected by an intellectual property right.²⁵¹ I am interested in tying because copyright law facilitates marketing practices that closely resemble tying.²⁵² A vivid example comes from copyright cases involving home video games.

In *Sega v. Accolade*²⁵³ the plaintiff used copyright law to protect a tying-like practice in the videogame market.²⁵⁴ The market features two kinds of products: a game console that attaches to a television and game cartridges that are inserted into the console to play the stored video game. Sega manufactures consoles and designed its console-cartridge interface so that secret software code must be used to make the components compatible. This design decision simulates a tying contract. If Sega is the only firm able to make compatible cartridges, then a Sega console buyer will have no choice but to purchase cartridges from Sega (or a firm authorized by Sega). Now it's time for copyright to appear in this story. Suppose that the interface is not patentable, and suppose that the cost of reverse engineering the interface (investigating the interface to learn how it works) is not too high. Then a competitor, say Accolade, might decide to enter the Sega cartridge market without Sega's authorization. Sega could use two copyright theories to block Accolade. First, Sega could argue that the interface code is copyright protected and that Accolade infringes by including the code in its cartridges.²⁵⁵ Second, Sega could

²⁴⁶ See, *International Salt v. U.S.*, 332 U.S. 92 (1947).

²⁴⁷ See *Moore v. Jas. H. Matthews & Co.*, 550 F.2d 1207, 1214 (9th Cir. 1977); HOVENKAMP, *supra* note 97, at 392.

²⁴⁸ 332 U.S. at x.

²⁴⁹ See HOVENKAMP, *supra* note 97, at 239; DONALD S. CHISUM & MICHAEL A. JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY LAW, § 1C (1992).

²⁵⁰ *Id.* at 323. Except when the tying contract is designed to block contributory patent infringement.

²⁵¹ See HOVENKAMP, *supra* note 97, at 392 (tie-ins may violate Section One of the Sherman Act or Section Three of the Clayton Act).

²⁵² FCC regulation covers many of the copyright dependent industries, and the FCC can have a substantial influence on the practice of price discrimination. Telecommunications regulation is outside the scope of this article, but I note here an example of how regulation affects tying in the cable industry. The Cable Television Consumer Protection and Competition Act of 1992 required cable operators to assure compatibility of their signal with cable-ready televisions. This prevented cable companies from tying boxes and remotes to cable signals.

²⁵³ 977 F.2d 1510 (9th Cir. 1992).

²⁵⁴ See also *Nintendo v. Atari*, 975 F.2d 832 (Fed. Cir. 1992). The console videogame industry earned about \$6 billion in revenue in 1999. *Games Top \$7.4 Billion; Industry Trend or Event*, CONSUMER ELECTRONICS, Feb. 7, 2000, available on LEXIS, at Market library, PROMT file.

²⁵⁵ See *Mitel v. Iqtel*, 124 F.3d 1366 (10th Cir. 1997).

(and did) argue that Accolade made infringing intermediate copies of Sega software during the reverse engineering process. Courts have rejected the first claim because interface codes lack originality and so are not protected under copyright law.²⁵⁶ The court in *Sega v. Accolade* applied the fair use doctrine and rejected the second claim of infringing intermediate copying.²⁵⁷ A finding of infringement based on either theory would have allowed Sega to tie the sale of the two products.²⁵⁸

Movie merchandising is the second multi-product marketing practice that relies on copyright to facilitate price discrimination. Merchandising refers to the sale of toys, posters, soundtracks, novels and other products derived from a movie.²⁵⁹ All of these

²⁵⁶ 977 F.2d at x.

²⁵⁷ See also *Lewis Galoob Toys, Inc. v. Nintendo of America, Inc.*, 964 F.2d 965 (9th Cir. 1992); *Sony Computer Entertainment, Inc. v. Connectix Corporation*, 203 F.3d 596 (9th Cir. 2000) (The defendant designed software that allows a PC to emulate Sony's videogame console. Defendant performed intermediate copying of Sony's copyrighted software during reverse engineering. The court followed *Sega* and applied the fair use doctrine.)

²⁵⁸ A second illustration of how copyright law might facilitate tying comes from *MAI Sys. Corp. v. Peak Computer, Inc.* 991 F.2d 511; 1993 U.S. App. LEXIS 7522 (9th Cir. 1993). MAI Systems manufactured and sold computers and licensed the copyrighted operating system software loaded into the computers. The license precluded third parties from using or copying the MAI operating system. The effect (and likely purpose) of this restriction was to prevent third parties from maintaining or improving MAI computers. Peak Computer was in the business of maintaining computers. In order to detect problems in a customer's computer system a Peak technician would operate a customer's computer including the copyrighted operating system. Rather than suing its customers for breach of their licenses, MAI successfully sued Peak for copyright infringement on the theory that the transitory copy of the operating system made when an MAI computer was turned on constituted an unauthorized copy. *Id.* at x. ("Peak's loading of copyrighted software into RAM creates a 'copy' of that software in violation of the Copyright Act.") This case was partially reversed in a provision of the Digital Millennium Copyright Act. The impact of MAI on software maintenance is discussed in Pamela Samuelson, *Modifying Copyrighted Software: Adjusting Copyright Doctrine to Accommodate a Technology*, 28 JURIM. J. 179 (1998).

Two antitrust cases raise the same theme: tying maintenance to equipment sales. In *Eastman Kodak Co. v. Image Technical Services*, 504 U.S. 451 (1992), Kodak tied photocopy repair service to the sale of replacement parts. Although Kodak had only 23% of the photocopier market, the Supreme Court allowed a tying claim based on market power in the market for Kodak replacement parts. In *Graphic Prods. Distribs., Inc. v. Itek Corp.*, 717 F.2d 1560 (11th Cir. 1983), the defendant, Itek, held market power in the market for platemakers (a graphics device). *Id.* at 1570. The plaintiff, GPD, violated its distributorship agreement with Itek by selling outside of its assigned territory. Itek responded by terminating GPD. GPD responded with an antitrust suit and won a Section One claim. *Id.* at 1564-66. GPD underbid Itek in Atlanta (the defendant marketed directly in major cities) and GPD "charged only \$19.00 per hour for servicing Itek machines, in contrast to \$32.00 or \$32.50 hourly rates charged by Itek." *Id.* at 1574. The price differential suggests Itek was using service charges to price discriminate. Further evidence comes from Itek's report that "[s]ervice was ten to twelve percent of the revenue generated by our field organization. It was the highest profit margin part of our sales, and it was a very important contributor of our profit." *Id.* at 1575.

²⁵⁹ "Licensing and the other revenue streams can now mean the difference between a \$90 million base hit and a \$150 million home run." Nancy Hass, *Summer Films: Synergy; It's Synergy, Baby, Groovy, Yeah!*, N.Y. TIMES, May 2, 1999, § 2A, at 30 (quoting Ira Mayer, owner of Licensing Letter). Sony Pictures released the movie *Godzilla* on May 20th of 1998. By June of 1998, Sony had already signed tie-ins and other deals with 220 licensees. More than 3000 products associated with the movie hit the market. Tim Carvell, *How Sony Created a Monster*, FORTUNE, June 8, 1998, at 162. Lion King generated \$1 billion in licensing revenue for The Disney Corporation. Nancy Hass, *Summer Films: Synergy; It's Synergy, Baby, Groovy, Yeah!*, N.Y. TIMES, May 2, 1999, § 2A, at 30. In 1996, McDonald's and the Disney Corp. entered into a 10 years agreement, which gave McDonald's the exclusive tie-in partnership. The deal was worth 2

products are derivative works that are eligible for copyright protection.²⁶⁰ And more importantly, these works fall within the scope of the adaptation right of the movie copyright owner.²⁶¹ Hence, no one can make these products without permission from the moviemaker. The effect is similar to the practice in the videogame market, except viewing the movie is not essential to getting value from the associated movie merchandise. The Sega compatible videogame cartridges are only valuable to owners of a Sega console. The movie merchandise is *more valuable* to movie viewers, but still has value to other buyers.

Bundling is the third path to price discrimination. An example of bundling well known to economists is the block booking practice featured in *U.S. v. Paramount Pictures, Inc.*,²⁶² and *U.S. v. Loew's, Inc.*²⁶³ *Paramount* dealt with contracts between movie producers and exhibitors, while *Loew's* dealt with the sale of old movies to television stations. The government complained that movie distributors would “block book” or bundle movies, and refused to let exhibitors or stations transact for a single movie instead of a bundle.²⁶⁴ Coalitions of buyers might be able to circumvent this practice if they agreed to share a bundle, but copyright law blocks this type of arbitrage through the public performance right.²⁶⁵ Even if a buyer could get a single desired movie from an arbitrageur, he or she could not publicly perform it without permission. The government succeeded in its antitrust claims and thwarted bundling of movies.²⁶⁶

billion dollars and gave Disney guaranteed promotion money and the right to promote its movies using McDonald's world-wide distribution network. Blair R. Fisher, *Disney Cooks Up Deal with McDonald's*, Promo, May 21, 1996, at 19. “McDonald's would be involved in 14 to 17 promotions each year, including Happy Meal and family promotions, and pay Disney \$100 million in royalty and licensing fees. The chain would also sponsor Disney's new Animal Kingdom theme park with additional money for promotion.” *Id.*; Litwak, *supra* note 226, at xi (“Movies like Jurassic Park and The Lion King can generate a billion-dollar revenue stream when one considers the sequel, television, toy and other merchandising, soundtrack album, and theme-park attractions that can be spun off the original movie.”) LUKK, *supra* note 228, at 272 (The Star Wars trilogy has earned over \$4 billion in merchandising revenue and \$1.3 billion in ticket sales) 256 (“In 1995, twenty-one percent of Disney's revenue came from consumer products.”) JUSTIN WYATT, HIGH CONCEPT: MOVIES AND MARKETING IN HOLLYWOOD (1994) 149 (Erich Segal wrote a book based on his screenplay for Love Story, the book became a best seller) 149 (the majority of major studio releases are novelized)

²⁶⁰ 17 U.S.C. §§ 101, 103 (1994).

²⁶¹ 17 U.S.C. § 106(2) (1994).

²⁶² 334 U.S. (1948)

²⁶³ 371 U.S. (1962).

²⁶⁴ See *Paramount*, 334 U.S. at 156. There is strong evidence that the movie studios actually tolerated a fair amount of unbundling. F. Andrew Hanssen, *The Block Booking of Films Re-Examined*, 43 forthcoming (2000) Block booking did not force exhibitors to take the entire line of films from a producer (note 51).

²⁶⁵ 17 U.S.C. § 106(4) (1994).

²⁶⁶ Block booking was characterized as a form of tying and held per se illegal in *United States v. Paramount Pictures*, 334 U.S. 131, 156-59 (1948) and *United States v. Loew's, Inc.*, 371 U.S. 38 (1962); See also HOVENKAMP, *supra* note 99, at 408 (tying can be implemented through price discounts for product bundles); *MCA Television Ltd. v. Public Interest Corp.*, 171 F.3d 1265 (11th Cir. 1999) (applied the per se rule and condemned package licensing of television shows). “As recently as December, 1988, Twentieth Century Fox was convicted of violating the 1951 paramount consent decree, to which it was a party, by block-booking in Minnesota and elsewhere, and was fined \$500,000.” William K. Knoedelseder Jr., *Fox Indicted on Charges of Block-booking Films*, L. A. TIMES, Oct. 7, 1988 at Business, part 4, page

Another example of bundling comes from *Mirage Editions v. Albuquerque A.R.T.*²⁶⁷ The defendant purchased several coffee-table books and cut out the pictures and glued them to ceramic tile and sold the end-product. The defendant played the role of arbitrageur by unbundling the pictures and selling individual pictures to the public.²⁶⁸ The court stopped the unbundling because it found that the defendant violated the adaptation right protecting plaintiff's books.²⁶⁹

The common link between these diverse marketing practices is the way they facilitate price discrimination. All three facilitate price discrimination by easing the measurement problem. A copyright owner who can stop arbitrage will not price discriminate if there is no way to estimate the valuations of different customers. This is the measurement problem. The marketing practices described above rely on two different techniques to measure valuations: metering and averaging. The metering technique uncovers intensity of demand for a basic product by counting purchases of some related product.²⁷⁰ The averaging technique relies on favorable statistical properties of consumer demand that is aggregated over multiple products.²⁷¹ The tying and merchandising practices implement metering, and bundling implements averaging.

A frequently cited example of the metering technique used for price discrimination comes from *U.S. v. IBM*. IBM leased a patented tabulator machine and tied the rental of the tabulator to the sale of punch cards for use in the machine. The tie allowed IBM to identify frequent users who purchased the most punch cards. IBM

1. According to industry reports, the studio was accused of forcing theaters to book such films as "Prizzi's Honor" in order to get films such as "Cocoon." *Id.*

²⁶⁷ 856 F.2d 1341 (9th Cir. 1988).

²⁶⁸ Certain photocopying cases can also be analyzed as examples of arbitrageurs engaged in unbundling. In *Amer. Geophysical Union v. Texaco*, and *U.S. v. Williams & Wilkins*, libraries unbundled journal articles for patrons. I would distinguish those cases from *Kinko's* and *Michigan Document Service*, where photocopy shops unbundled books and journals to form course packs, but then reproduced the course packs.

²⁶⁹ For a contrasting view see *Lee v. A.R.T. Co* 125 F.3d 580 (7th Cir. 1997). A.R.T. mounted Lee's notecards on ceramic tiles and sold them. First sale doctrine allows framing. There is no originality in the alleged infringing work so it cannot be a derivative work. The scope of the adaptation right should be constrained to match the definition of derivative works that are protectable. The alleged infringer did not recast or transform the underlying work. The plaintiff's theory would create "through the back door an extraordinarily broad version of authors' moral rights, under which artists may block any modification of their works..."

²⁷⁰ Digital technology aids metering used for price discrimination in copyright dependent industries. See Meurer, *supra* note 2, at 880 (reduced personal use rights and improved metering technology have a complementary effect in facilitating price discrimination).

²⁷¹ Yannis Bakos & Eric Brynjolfsson, *Bundling Information Goods: Pricing, Profits, and Efficiency*, MANAGEMENT SCIENCE, forthcoming (the law of large numbers makes it much easier to predict a consumer's value for a large bundle than for the individual goods in the bundle) Barry Nalebuff, *Bundling*, unpublished manuscript, Nov. 22, 1999. Bundling promotes price discrimination by reducing the heterogeneity of buyers' valuations. Hanssen argues that block-booking was practiced in the movie industry under conditions of buyer homogeneity. He notes that block booking started "in the early days of the silent cinema, when films were so homogenous that they were sold by the foot." Hanssen, *supra* note 256 at ?. If true there must be another explanation for block booking.

reasonably assumed that frequent users are also high valuation users. The rental rate for the machine was kept low to assure widespread use, and the price on punch cards was marked-up far above the competitive price. The net effect was a usage based pricing scheme that charged more to high valuation users.²⁷² Cartridge sales play the same role in the videogame market.²⁷³ The price of a console should be kept low to assure widespread adoption, and the game cartridges should be marked up to capture the users' surplus.²⁷⁴ The core assumption in the videogame market is that buyers who purchase more videogames have a higher valuation for the system.²⁷⁵

Merchandising can be used to implement a similar kind of price discrimination. This story is a little more complicated because the linkage between the "tying" and the "tied" products is weaker in this case. The purchase of a Sega-compatible cartridge raises the value of the Sega console, and the purchase of a non-compatible cartridge has no value to a consumer who owns only the Sega console. In contrast, a Darth Vader action figure and a substitute action figure both have value to all consumers regardless of whether they have seen Star Wars. Nevertheless, viewing Star Wars might significantly raise the value of the Darth Vader action figure to children. To identify the potential for price discrimination I first analyze videotape pricing²⁷⁶ in the absence of movie merchandising. Suppose that Darth Vader and other action figures were priced competitively. Lucasfilms would price the Star Wars videotapes to sell to hard core fans; the price would capture the value from viewing the movie and also the value that viewers will derive from Star Wars merchandise. Now suppose that Lucasfilms has exclusive control over Star Wars merchandise. The studio can use the following metering technique. The video sale price should be reduced, and the price on merchandise should be increased. The lower sale price will entice more buyers who are not very interested in

²⁷² Aaron Director & Edward Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281, 290 (1956) (tied sales achieve price discrimination).

²⁷³ The purchase of maintenance service plays the same role in the computer market.

²⁷⁴ Actually, console manufacturers obtain their profit by licensing other firms to make game cartridges, but the effect is the same. About 62% of 1999 revenue came from the sale of game cartridges, and the rest from game consoles. *Games Top \$7.4 Billion; Industry Trend or Event*, CONSUMER ELECTRONICS, Feb. 7, 2000, available on LEXIS, at Market library, PROMT file.

²⁷⁵ Similarly, the computer sale price should be reduced and the price of maintenance service should be marked-up. The core assumption is that high valuation computer users require more maintenance and upgrade service.

Direct metering without a tie is possible for many digital products. Digital technology allows a seller to measure factors like frequency and duration of the use of a work. See GOLDSTEIN, *supra* note 28, at 200. Intensity of use is measured directly by firms like Lexis and Westlaw who charge based on the duration of use of their databases and the number of documents that are downloaded. Goldstein speculates that because new transmission technology will be able to "keep a record of every selection a subscriber makes, and the price he paid for it, copyright owners will have a far more precise measure of the demand for their products than they do today." *Id.* Arbitrage is unlikely to have much impact on this type of discrimination. A disfavored (frequent user) buyer could log onto a favored buyer's account, but there would be no cost savings as long as the price per view was constant or declining. O'Rourke, *supra* note 81, at 53; Meurer, *supra* note 2, at 878 (technology can be used to meter product usage and generate preference information); See Bell, *supra* note 196, at x.

²⁷⁶ Movie producers can price discriminate among exhibitors and video rental stores, even though movie ticket prices and video rental rates do not vary across movies. This practice is distinct from the merchandising practice I discuss in the text.

merchandise, and the higher merchandise price can be used to meter the intensity of demand among hard core fans who buy multiple items of merchandise.

Bundling facilitates price discrimination by averaging demand over multiple products.²⁷⁷ The profit enhancing effect of the averaging technique is readily apparent in the following example; why bundling might be labeled price discrimination is not so apparent.²⁷⁸ I provide an explanation in a moment. Example 1. Suppose Z distributes the movies Fantasia and Star Wars. X and Y are movie exhibitors. X has a valuation of 5 for Fantasia and 0 for Star Wars. Y has a valuation of 2 for Fantasia and 2 for Star Wars. The profit maximizing price if each movie is licensed separately is 5 for Fantasia and 2 for Star Wars. The profit to Z is 7. If Z bundled the movies and charged a price of 4 for the bundle, then the profit to Z is 8. Even though the price of the bundle is the same to X and Y, it makes sense to speak of price discrimination. If Z could discriminate directly in the Fantasia market, then he would charge 5 to X and 2 to Y. If direct discrimination is not feasible, then Z can implement it indirectly through bundling. Bundling presents Y an effective price of 2 for Fantasia, because 2 is the difference between the price of the bundle and the price of Star Wars alone. Bundling hides an implicit discount to Y on Fantasia.²⁷⁹

My analysis of how bundling implements price discrimination is not complete until I consider arbitrage. In Example 1, there is an incentive for X to engage in resale arbitrage. After X licenses a movie bundle he has no use for Star Wars. He has an incentive to sublicense the right to perform Star Wars to Y at a price between 0 and 2. Y would prefer the sublicense to either of the offers by Z. Successful arbitrage cuts Z's profit to 4. Of course, Z can block resale arbitrage because a movie performance license is not transferable without permission from the movie copyright owner. Unbundling is more of a problem in *Mirage* because the first sale doctrine authorizes the resale of the

²⁷⁷ The economic literature on bundling as price discrimination was initiated by Stigler. See George J. Stigler, *United States v. Loew's, Inc.: A Note on Block Booking*, 1963 SUP. CT. REV. 152 (showing that block booking can be used to price discriminate). His work has been extended and generalized in many directions. See e.g., W. J. Adams & Janet L. Yellen, *Commodity Bundling and the Burden of Monopoly*, 90 Q. J. Econ. 475 (1976); Richard Schmalensee, *Gaussian Demand and Commodity Bundling*, 8 J. BUS. S211 (1984); R. Preston McAfee, John McMillan, & Michael D. Whinston, *Multiproduct Monopoly, Commodity Bundling, and Correlation of Values*, 104 Q. J. Econ. 371 (1989); Bakos & Brynjolfsson, *supra* note 263, at ? (bundling is combined with other types of price discrimination in the market for antivirus software) Yannis Bakos & Eric Brynjolfsson, *Aggregation and Disaggregation of Information Goods: Implications for Bundling, Site Licensing and Micropayment Systems*, forthcoming, INTERNET PUBLISHING AND BEYOND: THE ECONOMICS OF DIGITAL INFORMATION AND INTELLECTUAL PROPERTY, D. Hurley, B. Kahin, and H. Varian, eds., MIT Press 16 (hereinafter Bakos & Brynjolfsson, *Aggregation and Disaggregation*) (subscriptions are economically similar to bundles -- aggregation over time versus aggregation over products).

²⁷⁸ See HOVENKAMP, *supra* note 99, at 426 (puzzling over why economists call this price discrimination).

²⁷⁹ See Roy W. Kenney & Benjamin Klein, *The Economics of Block Booking*, 26 J. L. ECON. 497, 499 (19xx) (prices are discriminatory because "the implicit price paid for individual films will vary across markets.") Of course, I am not really interested in whether we can identify discrimination — I am interested in the welfare effects of these marketing practices.

coffee table books. In a questionable move, the court resorted to the adaptation right to block resale arbitrage.²⁸⁰

Loew's insistence on offering only bundles of movies could have been motivated by the desire to block personal arbitrage.²⁸¹ Example 1 raises the possibility of resale arbitrage, but not personal arbitrage. Both X and Y prefer²⁸² the bundle to the individual movies at the original price. Generally, Z must worry about a buyer choosing one of the individual movies instead of the bundle. The next example illustrates that point. Example 2. Suppose that X has a valuation of 5 for Fantasia and 3 for Star Wars. Y has a valuation of 2 for Fantasia and 5 for Star Wars. The profit maximizing price if each movie is licensed separately is still 5 for Fantasia, and now 3 for Star Wars. X licenses both movies and Y licenses only Star Wars. Z makes a profit of 11. Suppose that Z offers *only* the bundle and sets the price at 7. Both X and Y will take a license, which leads to a profit for Z of 14. If Z offered a choice between the bundle and either movie separately, then Y would choose Star Wars at a price of 3. Z can block personal arbitrage by offering only the bundle.²⁸³

Now that I have shown how tying, merchandising, and bundling can implement price discrimination, I move to the policy assessment questions. I usually oppose interpretations of copyright law that facilitate these marketing practices. That does not mean that I usually oppose the marketing practices. All three of the practices offer potential efficiency benefits,²⁸⁴ but these benefits likely can be achieved without the aid of copyright law. I fear that copyright law usually facilitates these practices when they are used to gain profit at the expense of social welfare. Specifically, I support the decision in *Sega* that encourages entry in the videogame cartridge market.²⁸⁵ I dislike the broad reach of the adaptation right; I see some merit in giving a movie copyright owner the exclusive right to make a sequel, but I see no merit in granting an exclusive right to

²⁸⁰ Lisa Guernsey, Books by the Chapter or Verse Arrive on the Internet This Fall, July 18, 2000 N. Y. Times (a few academic publishers have created electronic databases that allow professors to unbundle content and create customized textbooks; other publishers offer chapters as well as books for sale over the Internet).

²⁸¹ Kenney and Klein reject Stigler's explanation that block booking implemented price discrimination. See Kenney & Klein, *supra* note 270, at 499-500, 533-36. They contend that movie distributors achieved price discrimination by using time based and geographic price differentials. *Id.* at 517.

²⁸² Y is really indifferent between the bundle and just Star Wars.

²⁸³ Nevertheless, Adams & Yellen, *supra* note 268, have shown that sometimes the seller optimally offers the bundle and the separately price products.

²⁸⁴ Metering the intensity of use makes sense for leased equipment that depreciates in proportion to usage. Alan Meese, *Tying Meets the New Institutional Economics: Farewell to the Chimera of Forcing*, 146 U. PA. L. REV. 1, 61-65 (1997) (possible benefits from tied sales include protection of goodwill, quality control, and access to information relevant to product development). See HOVENKAMP, *supra* note 99, at 402 (most tying and bundling arrangements are efficient because they reduce production or distribution costs).

²⁸⁵ On the other hand, I might not object if Sega chooses to bundle five videogame cartridges with every console offered for sale. That marketing decision is subject to the usual antitrust standards. I comment on antitrust issues created by bundling *infra* at notes x and in the accompanying text. I disapprove of the *MAI Systems* holding that prevented Peak from entering the computer maintenance market without permission from MAI.

movie merchandise. As to bundling, I disapprove of the holding in *Mirage*; the court distorted the adaptation right to block the sort of unbundling that copyright law should favor. I am unsure of the proper outcome in the block booking cases.

I start my policy assessment by combining my analysis of videogame tying and merchandising on the issues of diffusion and distribution of surplus. I am a price discrimination pessimist when it comes to the impact of tying and merchandising on output and consumer surplus. An inherent problem with tying is that the cost of the tied product (videogame cartridges) is marked-up beyond marginal cost. This creates a social loss as *all buyers* purchase too little of the tied good. This loss might be offset by a reduction in the price of the tying product (videogame consoles) that induces new buyers to enter the market.²⁸⁶ A similar problem afflicts merchandising. If the movie copyright owner does not control the merchandise market, then entry is apt to drive the merchandise price down toward marginal cost. If the movie copyright owner retains control, then he or she is apt to mark-up the merchandise above marginal cost. Again, this creates a social loss as all buyers purchase too little merchandise.²⁸⁷ It is unlikely that this loss will be offset by a reduction in video prices that attracts many new buyers. There are two reasons. First, many buyers are uninterested in movie-related merchandise. They do not need to be “compensated” for an increase in merchandise prices with lower prices. Second, lower prices do not provide much of a social gain because many of the new videotape buyers are simply substituting video purchase for video rental or television viewing. One more concern with tying and merchandising is their distributional impact. High valuation consumers are clear losers from price discrimination in the videogame and movie merchandise markets. These consumers are probably a representative sample of the American public.²⁸⁸ I dislike this wealth transfer from high valuation consumers to entertainment companies because it adds to income inequality.²⁸⁹

²⁸⁶ Tied sales decrease social welfare because the price on the product with variable demand rises (assuming that tying does not open a new market). TIROLE, *supra* note 3, at 147. *But see* HOVENKAMP, *supra* note 99, at 424-25 (1999) (generally supporting price discrimination achieved by tie-in).

²⁸⁷ The cost of monitoring and enforcing copyright against merchandise manufacturers is a separate social cost.

²⁸⁸ Distributional concerns are not present in the repair cases like MAI Systems since the victims of discrimination are all business customers.

²⁸⁹ Doug Lichtman argues that *Sega* goes too far. He prefers strong copyright protection for firms that introduce a platform (like a videogame console) when an industry is in its infancy. Douglas Lichtman, *Property Rights in Emerging Platform Technologies*, J. LEGAL STUD. (2000). He identifies an externality that affects the pricing decisions of firms that sell peripheral products (like a videogame cartridge). The externality arises because consumers will not purchase a platform unless they can get enough surplus from purchases of various peripherals. The surplus consumers get from each peripheral depends on the price of the peripheral — a lower price means more surplus. So a peripheral price cut increases consumer surplus and increases the odds that a particular consumer will purchase the platform as well as that peripheral. An increase in platform purchases provides an external benefit to other peripheral producers. In essence, independent products become complementary. It is well known that independent firms set prices for complementary products that are too high. If the firms could coordinate to reduce their prices, then profits would rise, and also consumer surplus would rise. Lichtman argues that in infant industries the only way to assure coordination on low peripheral prices is to give the platform creator the power to regulate entry into the peripheral market. That sort of entry regulation is possible if the fair use doctrine is *not* used to protect reverse engineering in infant industries. This argument is a clever new variant of Kitch’s argument that a

The profit derived from tying videogames and consoles increases the incentive to create and improve a videogame system. Opening the game market to unauthorized firms will reduce that incentive — there might be a social loss, but it should be small. The console and the interface software are essentially functional. Significant innovations would be rewarded with a patent.²⁹⁰ It seems unnecessary and perhaps unwise to offer console manufacturers significant copyright incentives on top of patent incentives.²⁹¹ Furthermore, game developers need incentives to create new games, and the *Sega* ruling provides them with more of an incentive.²⁹² At any rate, videogame console manufacturers can still influence the videogame market, despite adverse copyright decisions. Secrecy of the interface is still a barrier to unauthorized game makers. They must pay the cost of reverse engineering to learn the interface.²⁹³ And authorized game

pioneer should be given strong property rights to facilitate development of a new technology. *See* Edmund Kitch, *The Nature and Function of the Patent System*, 20 J. L. & ECON. 265 (1977).

Although I find Lichtman's argument intriguing I disagree with his policy prescription for the videogame market. For various reasons, I doubt the conditions in the videogame market warrant giving the console manufacturer control over entry into the peripheral market. First, I suspect the peripheral price coordination problem is mitigated by a relatively low equilibrium price for the console. (This is an open question in the context of Lichtman's model.) Recall that high peripheral prices impose a negative externality because they influence the consumer decision about whether to purchase the *system*. A console manufacturer can mitigate this system effect with a low console price. Since most platform manufacturers are active in one or more peripheral markets, they have reasonably strong incentives to cut both peripheral and platform prices on account of their complementarity. Furthermore, network effects provide an additional incentive to charge a low initial price for a console so the console manufacturer gains a strong market presence vis à vis competing consoles. Second, I suspect that peripheral manufacturers will face competition from substitutes — even in an industry's infancy. In the *Sega* case it appears that Sega's game "Altered Beast," is a substitute for Accolade's "Ishido," likewise, Sega's "Joe Montana Football," and Accolade's "Mike Ditka Power Football." Lichtman explains that the existence of substitutes for a peripheral causes price competition that pushes peripheral prices down. In light of these various effects we can be sure that entry regulation by the console manufacturer will raise system profits, but we cannot be sure that consumers will benefit from lower prices.

I have two other reasons for supporting the fair use outcome in *Sega*. First, stronger copyright protection for the platform developer might depress the expected profit available to innovators who develop new peripherals. Entry regulation raises the profit to console manufacturers and probably total system profit, but it might cut the profit to those who develop new peripherals to less than the social optimum. *See* Scotchmer, *supra* note 19; Lemley, *supra* note 19. Although the impact is not clear, I worry that elimination of the fair use defense for reverse engineering will significantly weaken the bargaining power of independent peripheral manufacturers and so reduce their profit. Second, I am concerned that a temporary strengthening of intellectual property protection for infant industries would be difficult to reverse. Entry by an unauthorized peripheral manufacturer like Accolade could be delayed for a long time after an industry moved out of its infancy. The risk of litigation and relatively small profit to a late entrant into a peripheral market creates a free-rider problem that would be difficult to overcome. I fear the end result would be to promote the undesirable price discrimination I discuss in the text.

²⁹⁰ Unpatentable innovations are still rewarded in the market place. An innovator enjoys a lead time advantage over his or her competitors. Some innovations can be protected as a trade secret.

²⁹¹ Of course, this question always arises with software, because software is always eligible for copyright and patent protection. Sensibly, the courts have limited the scope of copyright protection available to software.

²⁹² *See* Lemley, *supra* note 19.

²⁹³ There is a social loss because the console manufacturer works to make the interface difficult to reverse engineer, and unauthorized videogame makers work hard to reverse engineer the interface. If the *Sega* and

makers may get some advantage from the goodwill associated with the console maker's trademark. Finally, the console maker can package some games with the console.

I worry that merchandising may cause excessive investment in movies²⁹⁴ and distort the content of movies because the extra profit derived from the practice.²⁹⁵ The movie industry is particularly susceptible to the problem of overinvestment. Profitability depends to a large degree on making a blockbuster.²⁹⁶ The payoff derived from merchandising does not necessarily yield higher profit for the industry, because these rents are dissipated by heavy investment in stars and special effects.²⁹⁷ A less visible effect of the allure of merchandising rents is the distortion of story lines.²⁹⁸ Producers and writers develop characters and plots with an eye on toys and other merchandise that can be derived from the movie.²⁹⁹

Most movie producers would be appalled by my recommendation to eliminate merchandising rights. Many movies do not make a profit from theatrical release and only show a profit after including movie licensing revenue.³⁰⁰ I am not too concerned by this fact. The original investment decisions that are made during movie production account for merchandise profits. If merchandise rights are eliminated, production decisions will be changed to reduce movie budgets. Movie making is a risky business. There would still be a large number of unprofitable movies, but that is true under the status quo.

Producers would also be concerned about the link between merchandising and promotion. They might fear that lack of exclusivity in the merchandise market would disrupt movie promotion. Movie merchandise certainly serves as the basis for advertising campaigns.³⁰¹ Fast food restaurants and other producers who market to children might be less interested in promoting a movie if they lacked an assurance of merchandise exclusivity. Possibly the advertising budgets for movies would fall. I'm not sure that is such a bad thing. It is certainly possible that current advertising levels are socially excessive.³⁰² Producers might also fear that the theme of an advertising campaign might be distorted by allowing free entry into the merchandise market. Such a fear is

Atari cases had gone the other way, then the console manufacturer would design a simple, efficient interface, and there would not be any reverse engineering by game makers.

²⁹⁴ See Lunney, *supra* note 2, at 640-41 (price discrimination made possible by the existence of the derivative right may cause overinvestment). See Sterk, *supra* note 89, at 1216 (the derivative right is rarely required to provide a productive incentive).

²⁹⁵ Later I argue that the importation right also distorts the content of movies. See *infra* text accompanying notes x.

²⁹⁶ Litwak, *supra* note 226, at, x (major studios aim to make blockbusters).

²⁹⁷ See WYATT, *supra* note 251, at 104-108 (discussing the impact of market concentration on product variety in the movie industry).

²⁹⁸ LUKK, *supra* note 228, at 261 (merchandising effects movie story-lines).

²⁹⁹ See WYATT, *supra* note 251, at 152 (George Lucas thought about toy merchandise when he created *Star Wars*).

³⁰⁰ See LUKK, *supra* note 228, at 253-54.

³⁰¹ *Id.* at 269-70 (some tie-ins involve licensing fees and others are done just for the benefit of the promotional expenditures by the tie-in partner). See WYATT, *supra* note 251, at 148 (merchandising extends the "shelf life" of a film).

³⁰²

unfounded. Producers can still rely on trademark law to block confusing use of trademarks associated with a movie.³⁰³ Also, producers can rely on secrecy and a lead-time advantage to gain significant control of the merchandise market. For example, a producer who releases a children's movie around Thanksgiving can arrange to produce toy merchandise for the holidays.³⁰⁴ Potential competitors probably would not have enough lead time to compete so soon.

In contrast to tying and merchandising, bundling copyrighted works probably promotes broader diffusion of those works, but at the same time it also reduces consumer surplus.³⁰⁵ Bundling promotes diffusion because bundles are easier to price. Averaging consumer demand over multiple products reduces the variance in demand. That means there are fewer buyers in the "tail" of the demand curve who get excluded. Two efficiency problems with price discrimination implemented by bundling that have been noted in the industrial organization literature are not very relevant to copyright dependent industries. First, when marginal cost is positive, bundling creates inefficiency because some consumers buy goods that give them less utility than the incremental cost of supply.³⁰⁶ This harm is small because the marginal cost of reproducing most copyrighted works is low. Second, bundling in big packages may extract the entire surplus from high volume buyers while knocking small volume buyers out of the market.³⁰⁷ But volume discounts are not relevant for many copyrighted works because buyers want at most one unit.

Bundling brings several possible benefits. The clearest benefit is a reduction in transaction and enforcement costs. The blanket licensing practice of the copyright collectives best illustrates the point.³⁰⁸ The Supreme Court suspended the per se rule against price fixing in an antitrust case against BMI because of the difficulty enforcing the public performance right.³⁰⁹ The Court lauded the enforcement benefits of blanket licensing.³¹⁰ In some cases, bundling avoids wasteful investment in measuring the value of the components of a bundle. Kenney and Klein illustrate this point in the context of

³⁰³ Section 43(a) of the Lanham Act can be used to protect television and movie characters against confusingly similar use by others. See MCCARTHY ON TRADEMARKS §27:89 at 27-137; Warner Bros., Inc. v. Gay Toys, Inc., 658 F.2d 76, 211 U.S.P.Q. 1017 (2nd Cir. 1981) (a toy company made a version of the car featured in a television series without permission from the owner of the series, the court approved a preliminary injunction under Section 43(a) of the Lanham Act). Trademark law should not be read so broadly that it recreates the exclusive right to make movie merchandise that currently derives from Section 106(2) of the Copyright Act.

³⁰⁴ Cf. Lunney, *supra* note 2, at 637 n. 497 (absent derivative rights copyright holders still might try to discriminate by selling to derivative users in an early period and other users later).

³⁰⁵ See Bakos & Brynjolfsson, *supra* note 263 at ?. In fact bundling an infinite number of goods allows a monopolist to achieve perfect price discrimination. *Id.*

³⁰⁶ See Adams & Yellen, *supra* note 268.

³⁰⁷ See TIROLE, *supra* note 3, at 159.

³⁰⁸ BMI and ASCAP offer blanket licenses for the public performance of any music in their vast portfolios. The CCC and some publishers use blanket licenses for photocopying of journal articles.

³⁰⁹ Broadcast Music Inc. v. Columbia Broadcasting Systems Inc., 441 U.S. 1 (1979).

³¹⁰ *Id.* at 24.

block booking.³¹¹ They argue that absent block booking, every movie exhibitor would gather information about the value of the bundle to gain a strategic advantage in negotiations with producers. Hanssen disagrees with Kenney and Klein and argues the block booking was not designed to discourage information gathering by exhibitors. He shows that despite appearances, movie bundling was not compelled; producers allowed extensive adjustment of exhibition obligations after a contract was signed.³¹² He argues that reduced distribution cost was the real goal and an obvious benefit of movie bundling.³¹³ This benefit can be achieved, of course, without the aid of copyright law. If the seller is only interested in cheap distribution, then the seller should not object to unbundling by users.

The main anticompetitive threat of tying and bundling is that they will be used to exclude potential entrants and induce exit by current competitors. Older economic theories that are influential in antitrust law contend that tying and bundling cannot be used to exclude.³¹⁴ But microeconomists starting with Whinston have developed various theories showing that they can be used to exclude.³¹⁵ Nalebuff shows that bundling tends to be used for price discrimination when two products are independent or negatively correlated in terms of buyers' valuations, and it tends to be used for exclusion when valuations are independent or have a positive correlation.³¹⁶ Bakos and Brynjolfsson have shown that bundling can deter entry into markets for digital information goods.³¹⁷ Choi shows that tying may deter entry in research intensive industries.³¹⁸ These exclusionary tactics are an obvious concern in the computer operating system market.³¹⁹ But the concerns extend to other copyright dependent industries.³²⁰ The threat of anticompetitive

³¹¹ Kenney & Klein, *supra* note 270, at 500-16. The argument about block-booking is built on an analogy to packaging of diamonds. The diamond example seems more compelling. The diamond cartel prohibits intermediaries from picking and choosing from a lot of diamonds. This eliminates wasteful search for quality information, since all of the diamonds are of high enough quality that they get marketed.

³¹² See Hanssen, *supra* note 256 (identifying evidence inconsistent with the theory that block booking was motivated by a design to reduce search costs) In 1923, Famous Players-Lasky experimented with the individual sale of films, but returned to bundling because the administrative cost of individual sales was too great.

³¹³ *Id.* Today the movie industry has replicated the cost-saving features of block booking while complying with the consent decree. In 1950, after the consent decree, 3700 theaters choose to block book Paramount pictures. *Id.* at 91.

³¹⁴ See Director & Levi, *supra* note 264, at ? (arguing that bundling cannot be used to leverage market power).

³¹⁵ See Michael D. Whinston, *Tying, Foreclosure, and Exclusion*, 80 AMER. ECON. REV. 837 (1990) (showing that bundling can be used to leverage market power if the market for the tied good is not competitive).

³¹⁶ See Barry Nalebuff, *Bundling*, unpublished manuscript, Nov. 22, 1999. Bundling can be used for price discrimination, cost saving, or to leverage market power.

³¹⁷ See Yannis Bakos & Eric Brynjolfsson, *Bundling and Competition on the Internet*, NYU Working Paper, <www.stern.nyu.edu/~bakos> (bundling deters entry).

³¹⁸ Jay Pil Choi, *Tying and Innovation: A Dynamic Analysis of Tying Arrangements* (bundling gives an incumbent a greater incentive to engage in cost-cutting R&D).

³¹⁹ *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30 (D. Colum. 2000).

³²⁰ The console market is quite concentrated. See *Games Top \$7.4 Billion; Industry Trend or Event*, CONSUMER ELECTRONICS, Feb. 7, 2000, available on LEXIS, at Market library, PROMT file (Sony and Nintendo control most of the market). But there is competition from the PC game market, see *id.* (PC

effect from tying and bundling of copyrighted works should be handled through careful scrutiny under antitrust law or the doctrine of copyright misuse.

C. *Sharing Copyrighted Works*

One of the most contentious issues in copyright is the kind and extent of sharing allowed by users without permission from copyright owners. Private copying and sharing of movies, music, and software is common.³²¹ Photocopying is commonly used to share library holdings. The software and music industries aggressively litigate to block copying and sharing of copyrighted works.³²² The Supreme Court approved videotaping of movies for home use,³²³ and photocopying of journal articles for library patrons.³²⁴ Congress restricted sharing of software and music by forbidding unauthorized software and record rental, and endorsed sharing of music by allowing personal copying by users of digital audio tape recorders.³²⁵ One reason this issue is so contentious is that new technologies keep appearing that enable personal copying that facilitates both sharing and piracy. Two extreme points are clear: (1) personal copies used in the home are protected by the fair use doctrine;³²⁶ and (2) pirates who do large-scale copying and distribution

videogames earned about \$1.4 billion in revenue in 1999), and entry is a real possibility, *see* Tobi Elkin, *Games Begin as Marketers Flock to Expo; Interactive Companies to Showcase New Platforms, Licensed Properties; Product Announcement*, ADVERTISING AGE, May 8, 2000, at 48 (Microsoft plans to enter the videogame console market in 2001).

³²¹ Much sharing does not involve copying and is clearly outside the scope of the exclusive rights of the copyright owner. Users share text, music, movies, and software by selling, lending, or giving away a copy, for example, the owner of a novel lends it to a friend. Users also share text, music, and movies through private performance, for example, friends gather in a home to watch a videotaped movie. Sharing by transfer is protected by the first sale doctrine, which allows someone in lawful possession of a copy to transfer that copy. Sharing through private performance is allowed because Section 106(4) grants the copyright holder an exclusive right to control only *public* performances.

³²² *See e.g.*, Mark Lewis, *RIAA Claims Lawsuits Create Level Playing Field, But the Smell of Precedents Is in the Air*, Webnoize News, July 10 (2000) <http://news.webnoize.com/item.rs?ID=9664>. The RIAA brought three cases designed to stop music sharing. The first suit against MP3.com claims the defendant made unauthorized copies of music files. The second suit against Napster claims the file-swapping software constitutes indirect copyright infringement. The third suit against MP3Board.com claims that the search engine and link aggregator is liable for contributory infringement because it offers links to infringing MP3 files. *Id.*

³²³ *See* Sony Corp. of America v. Universal City Studios, Inc., 464 U.S. 417 (1984).

³²⁴ *See* Williams & Wilkins Co. v. United States, 487 F.2d 1345 (Ct. Cl. 1973), *aff'd* by an equally divided Court 420 U.S. 376 (1975) (*per curiam*).

³²⁵ The Audio Home Recording Act of 1992 authorizes personal copying of music. *See* 17 U.S.C.S § 1001. *See also* Recording Indus. Ass'n of Amer. v. Diamond Multimedia Sys., Inc., 180 F.3d 1072 (9th Cir. 1999)

³²⁶ A primary economic justification of the fair use defense is based on transaction costs. *See* Gordon *supra* note x at x. A high transaction cost relative to the value of a use forecloses licensing. In the absence of fair use, either the user will infringe (without much fear of litigation), or will forego the infringing use. Neither outcome benefits the copyright holder; so there is no harm in allowing the use as fair, except possibly the existence of the fair use defense will discourage institutional innovations that might reduce transaction costs. *See* Merges *supra* note x, at x. The effect of fair use is to create a price differential. The typical user pays the price chosen by the copyright owner and those users protected by fair use pay zero. Since this differential is imposed on the seller it is not equivalent to price discrimination in terms of its economic effects. If the copyright holder charges a uniform price with or without the fair use defense, then the

cannot gain any relief by appealing to doctrines that privilege certain kinds of sharing.³²⁷ Between these extreme points there are many hard cases, and the hard job of setting a boundary between sharing and piracy.³²⁸ In this section I try to improve the understanding of the economic effects of the sharing of copyrighted works. I pay special attention to the link between sharing and price discrimination in the software market and the academic journal market, though my analysis is relevant to other kinds of sharing.

Sharing is practiced by different kinds of groups. I will use the term coalition to refer to a group of people who share a copyrighted work. The smallest coalitions are based on kinship or friendship. Other coalitions arise at the workplace. And the largest coalitions are composed of strangers who rely on an intermediary to provide works for sharing. The size and existence of some coalitions is sensitive to the influence of copyright law and marketing. Other coalitions are fixed exogeneously. The copyright owner controls three instruments that help determine the size and existence of coalitions. The first instrument is price. If the price of a work is low, people are more inclined to purchase their own copy of a work rather than share.³²⁹ The second instrument is copyright enforcement. If a certain kind of sharing is infringing, then sharing can be deterred or enjoined by copyright enforcement.³³⁰ The third instrument is anti-copying technology. Such technology may prevent or at least raise the cost of sharing.³³¹

Sharing and price discrimination have a complex relationship in markets for copyrighted works.³³² Sharing affects the profitability of price discrimination. An increase in sharing might cause the seller of a copyrighted work to initiate price discrimination or abandon it. On the other hand, price discrimination affects the desirability of sharing. Users might start sharing as a way to resist price discrimination.

payoffs to the current users and the copyright holder are unaffected. The fair users obviously gain, and similarly total surplus rises.

³²⁷ See *Sega Cracks Down on Software Pirates*, N.Y. TIMES, July 21, 2000. Sega stopped dozens of Internet sites from selling pirated versions of its videogames. The Sega videogames were reputed to have the strongest encryption among consumer software, nevertheless pirates decoded and distributed the games. *Id.*

³²⁸ See Meurer, *supra* note 2, at 852 (distinction between sharing and piracy).

³²⁹ See Yehning Chen and Ivan Png, *Software Pricing and Copyright: Enforcement Against End-Users*, unpublished manuscript, May 1999 (sellers can discourage sharing by either increasing copyright enforcement or by cutting the price); Fernando Nascimento & Wilfried R. VanHonacker, *Optimal Strategic Pricing of Reproducible Consumer Products*, 34 MGMT. SCI. 921 (1988).

³³⁰ See Ram D. Gopal & G. Lawrence Sanders, *Preventive and Deterrent Controls for Software Piracy*, 13 J. MGMT. INFO. SYS. 29, 36 (1997) (the optimal size of a sharing coalition balances the desire to spread the cost of a copy versus the fear that wider sharing increases the risk of detection).

³³¹ *Id.* at 39. Increasing enforcement or anti-copying technology both cause the optimal monopoly price to fall. *Id.* The DMCA prohibits devices used to circumvent copy protection technology. See Meurer, *supra* note 2, at 882.

³³² One complexity is defining price discrimination. Uniform pricing to coalitions of different size is a type of discrimination. Large coalitions enjoy a lower per person price than small coalitions. The economics of sharing parallels the economics of bundling. See Bakos, Brynjolfsson, & Lichtman, *supra* note 114 at 124-26. Sharing differs from bundling because the seller chooses the products that are bundled. The seller cannot choose and at best has indirect control over who shares. See, Ingela Alger, *Consumer Strategies Limiting the Monopolist's Power: Multiple and Joint Purchases*, 30 RAND J. ECON. 736 (1999). Alger shows that partial arbitrage might lead to more pronounced price discrimination compared to no arbitrage.

Software sharing is a common route for arbitrage. For example, a family with a student user and a parent with a small business may buy one copy of a program at a student discount (assuming the student version has the desired features) and avoid paying the higher price targeted at business customers.

Sharing and copyright law also have a complex relationship. Although case law is silent, copyright tradition holds that the first sale doctrine protects buyers who make a copy to share a work with family members.³³³ The fair use doctrine augments the first sale doctrine by protecting copying for personal use. In *Sony Corp. of America v. Universal City Studios, Inc.*,³³⁴ the Supreme Court permitted consumers to videotape television programs for later viewing. The Court also found that despite the tendency of consumers to make a library of movies from television broadcasts, the manufacture and sale of VCRs by Sony does not constitute contributory infringement.³³⁵ *Sony's* influence has protected other consumer electronic manufacturers from copyright infringement, and promoted sharing via personal copying.³³⁶

Copyright law has repeatedly addressed questions regarding sharing and photocopying of library holdings. Libraries play a central role in promoting the sharing of text; a core mission of a library is to lend text to readers. In the past thirty years, effective library circulation has grown with the aid of photocopying, and several copyright cases feature photocopy technology. Two cases reached the opposite conclusion about whether a library can use photocopying to expand circulation of its holdings. In *U.S. v. Williams & Wilkins* an equally divided Supreme Court led stand a Court of Claims ruling that journal photocopying by a federal library was protected by the fair use doctrine.³³⁷ In *American Geophysical Union v. Texaco* the Second Circuit refused to extend *Williams & Wilkins* to a corporate library.³³⁸ Two other cases have rejected the fair use defense applied to shops that photocopied books and journals to make college course packs.³³⁹ All four of these cases involve users who are looking to a single library system for most of the material that they copy. In *Texaco* and *Williams & Wilkins* all of the journals came from the defendant's library. Most course pack material

³³³ See Meurer, *supra* note 2, at 860-62 (first sale doctrine and sharing); Liang, Practising Law Institute, Intellectual Property and the National Information Infrastructure, Patents, Copyright, Trademarks, and Literary Property Course Handbook Series, 17 Sept. 1995 (Once a consumer receives an authorized version of a digital work, noncommercial distribution or transmission of a copy by gift or sharing should be protected by the first sale doctrine.) The Second Circuit was careful to distinguish private copying from workplace copying in *Texaco*. See, *American Geophysical Union v. Texaco*, 60 F.3d at 916.

³³⁴ 464 U.S. 471 (1984).

³³⁵ The Court decided that the existence of a substantial non-infringing use of the devices meant that Sony was not liable.

³³⁶ *But see* *Nintendo of America Inc. v. Computer and Entertainment Inc.*, 1996 U.S. Dist. LEXIS 20975 (W.D. Wash. 1996) (technology for sharing videogame cartridges found infringing); Alfred C. Yen, *Internet Service Provider Liability for Subscriber Copyright Infringement, Enterprise Liability, and the First Amendment*, 88 GEO. L. J. 1833 (2000). Napster.

³³⁷ See 420 U.S. 376 (1975) (per curiam).

³³⁸ See 60 F.3d 913 (2nd Cir. 1994).

³³⁹ See *Basic Books v. Kinko's Graphics Corp.*, 758 F. Supp. 1522 (S.D.N.Y. 1991); *Princeton University Press v. Michigan Document Servs.*, 99 F.3d 1381 (6th Cir. 1996) (en banc).

is copied from the holdings of the library at the college attended by the customers for the course pack. So the issue in these cases might be characterized as one of sharing. Recognizing that libraries facilitate sharing of copyrighted works, publishers practice price discrimination by charging a relatively high price to libraries (and other institutions) and a lower price to individual subscribers.³⁴⁰ There is evidence that the price differential on academic journals grew in response to increased photocopying of journals in libraries.³⁴¹

Texaco promotes another publisher response to photocopying at corporate libraries — the photocopy license managed by the Copyright Clearance Center (CCC).³⁴² The CCC practices a style of price discrimination that is similar to ASCAP and BMI. Quantity based price discrimination is implemented through a blanket license. The blanket license allows unlimited internal use of more than 1.75 million works.³⁴³ The annual fee for a blanket license is based on a firm's industry and number of employees.³⁴⁴ The fee scheduled is correlated with expected usage determined by surveys that measure photocopy activity.³⁴⁵ Field of use price discrimination is implemented by requiring a separate license for external use of photocopied text.³⁴⁶

Copyright law offers less protection to users who copy and share software than to users who copy and share text. The *Texaco* library would never have considered sharing copies of programs with *Texaco* employees. The only explicit concession to personal software copying is found in Section 117, which allows software owners to make archival copies.³⁴⁷ Nonetheless, *licensed* software sharing is common. In most firms and other institutions, software is shared on a network or multiple copies of software are installed on various machines. Usually, a firm negotiates a site license with a seller. The typical site license gives the firm permission to install software on a local network. The license fee varies with the number of users or number of machines attached to the network.³⁴⁸ A site license is attractive to a customer because it usually features a quantity discount, reduces transaction costs, and yields benefits from standardization.³⁴⁹ It is

³⁴⁰ Libraries pay a higher journal subscription fee than individual users even though nothing in copyright law stops individuals from arbitraging by reselling journals to libraries.

³⁴¹ See Liebowitz, *supra* note 1, at 192-93 (faster increase in institutional journal prices compared to individual prices suggests price discrimination is responsive to increased photocopying).

³⁴² *Media Notes: Texaco Copyright Case Settled*, *Media Daily*, (May 18, 1995) at No. 98 Vol. 3. (Texaco paid a seven-figure settlement and agreed to take retroactive CCC licenses.). The CCC web site provides information on license terms. See <<https://www.copyright.com/Help/AASFAQ.html>>.

³⁴³ *Id.*

³⁴⁴ *Id.*

³⁴⁵ *Id.*

³⁴⁶ *Id.*

³⁴⁷ 17 U.S.C.S. § 117. This section also authorizes copies required as an essential step in the use of software.

³⁴⁸ See O'Rourke, *supra* note 60, at 533. A customer may license an object code copy of IBM's AIX Version 3.2.5 for between \$ 650 and \$ 12,100, with the price dependent upon the number of users and the size of the machine for which the object code is licensed. *Id.*

³⁴⁹ See Bakos & Brynjolfsson, *Aggregation and Disaggregation*, *supra* note 268, at 16 (site licensing can reduce administrative, transaction, copyright enforcement, and maintenance costs as well as promote interoperability and network effects).

attractive to a software seller because it reduces transaction and enforcement costs,³⁵⁰ and because it implements a form of price discrimination.³⁵¹ The economic effects of software site licenses are comparable to the effects of blanket photocopying licenses.

I move now to my policy assessment of sharing and price discrimination in the academic journal and software markets. Let me repeat a point I made at the beginning of this section — software rental and similar practices³⁵² contribute to piracy, and are not amenable to price discrimination analysis. Such practices fall into the domain of simple free-rider analysis, which tells us, unauthorized software rental should not be allowed. I am interested in sharing that might erode seller profit but will not threaten the existence of the market. Let me simplify my task and concentrate on two questions: (1) should copyright facilitate blanket photocopying licenses? and (2) should copyright facilitate software site licenses?

The economic issues presented by the two questions are very similar. If unauthorized sharing violates copyright law, then it is easier to implement price discrimination because measurement problems are reduced. With academic journals the publisher can roughly count the number of readers by counting the number of photocopies. With software the publisher counts users directly through the site license. Furthermore, making licenses non-transferable blocks arbitrage. I will start my analysis with some comments about the effects of unauthorized small-scale sharing on the profit of copyright owners.

Copyright owners fear small-scale sharing will cause demand (and profit) to fall because the willingness of the coalition's buyer to pay for a work may not match the total valuation of the coalition. A buyer might be happy to let several friends make a copy of a work, but she probably will not get any compensation. If she does not get a level of vicarious satisfaction that matches her friends direct satisfaction from using the work, then her willingness to pay will fall short of the total coalition value.³⁵³ In the corporate context there is probably less of a gap between the total value to the coalition and the buyer's willingness to pay. A corporate purchasing manager should account fairly well for users' benefits in the firm.

³⁵⁰ Trade associations help reduce enforcement costs by achieving economies of scale. *See Watchdog Group Announces Settlements with 20 Software Pirates*, N.Y. TIMES, (June 27, 2000) (the Business Software Alliance settled copyright infringement claims against 20 small and medium size businesses -- most of the infractions involved exceeding the quantity restrictions in site licenses); Gopal & Sanders, *supra* note 320, at ? (the Software Publishers Association audits firms to monitor unauthorized software copying).

³⁵¹ Microsoft's Select license combines bundling and quantity discount. The company's software is arranged in three categories: applications, operating systems, and network software. The site license offers a quantity discount for high volume users in each category.

³⁵² Such as record rental, or the peer-to-peer file sharing featured in Napster.

³⁵³ This problem might be overcome if the friends agreed at the outset to share the cost of the software. *See Liebowitz, supra* note 1, at 191 (builds a model in which the purchaser's valuation depends on the value to those who share use of the copy).

Sharing might cause a revenue loss because of a reduced willingness to pay, but there are a number of factors that mitigate that loss,³⁵⁴ and even work to increase profit. Sharing copyrighted works eliminates production and distribution costs to publishers associated with the shared works.³⁵⁵ Further, the marketing of many copyrighted works is a collaborative effort between the publisher and customers that can be aided by sharing.³⁵⁶ Finally, software sharing may create a network effect that raises the value of heavily purchased software to all users.³⁵⁷ Many of these benefits from sharing are preserved even when the copyright owner has the power to block sharing; the copyright owner can authorize sharing and set prices to capture some of the benefits.³⁵⁸ If sharing is really the cheapest method of production, or distribution, or an effective marketing strategy, then it will be licensed.

The ambivalent tone in the previous two paragraphs continues in the rest of my policy assessment. Whether copyright should facilitate blanket photocopy licenses and software site licenses is a close call.³⁵⁹ These forms of price discrimination will increase profit, but perhaps not as much as the critics of sharing think. The increased profit might provide a desirable incentive to produce more academic journals and software. But we cannot be sure without empirical evidence indicating whether current incentives are adequate. Quantity discounts through site licenses and unregulated sharing both lead to

³⁵⁴ See Meurer, *supra* note 2, at 881 (the effect sharing on publisher profits is overstated)

³⁵⁵ See Besen & Kirby, *supra* note 1, at 255 (sharing increases profit if consumers are more efficient distributors than the publisher); Ian E. Novos & Michael Waldman, *The Effects of Increased Copyright Protection: An Analytic Approach*, 92 J. POL. ECON. 236 (1984).

³⁵⁶ See Matt Richtel, *Napster and Record Industry Clash over Sales and Copyrights*, N.Y. TIMES, July 4, 2000, <<http://www.nytimes.com/library/tech/00/07/biztech/articles/04music.html>> (each side has studies about the impact of Napster on sales. The industry studies show that Napster use reduces sales and the Napster studies show the opposite); Liebowitz, *supra* note 1, at 191 (photocopying allows a researcher to sample journals in the library perhaps ultimately increasing their sales).

³⁵⁷ Kathleen R. Conner & Richard P. Rumelt, *Software Piracy: An Analysis of Protection Strategies*, 37 MGMT. SCI. 125 (1991) (133 sharing may increase profit because of network effects); Lisa Takeyama, *The Welfare Implications of Unauthorized Reproduction of Intellectual Property in the Presence of Network Externalities*, 62 J. INDUSTR. ECON. 155 (1994) (same). Oz Shy & Jacques-Francois Thisse, *A Strategic Approach to Software Protection*, 8 J. ECON. & MANAG. STRATEGY 163 (1999) (a strong network effect causes duopolists to reject copy protection).

³⁵⁸ Texaco was certainly a cheaper distributor of extra copies of journal articles than the publishers. The company obtained a license as part of the settlement. See *Media Notes: Texaco Copyright Case Settled*, Media Daily, (May 18, 1995) at No. 98 Vol. 3. For an example of an electronic publisher that explicitly permits certain kinds of sharing in its license see the BNA Internet Law registration form at <http://www.bna.com/ilaw/terms.htm>. (“BNA will distribute one (1) direct E-mail message per registered recipient. The recipient may forward the E-mail Service(s) to colleagues, students and friends and encourage them to register to receive their own personal copy of this complimentary e-mail service.”)

³⁵⁹ Compare Fisher *Fair Use*, *supra* note 2, at 1742 (“[J]udges should watch for situations in which unauthorized use of copyrighted material undermines price discrimination schemes and should be chary of holding such uses fair.”) Terry Fisher opposes application of the fair use doctrine when it would interfere with price discrimination. He argues that the increased profit flowing to the copyright holder from price discrimination can be taxed away via other features of copyright law that subsidize public interest activities. I believe there are cases in which appropriate application of the fair use doctrine should discourage price discrimination. The first fair use factor relating to purpose and the fourth fair use factor relating to market effect offer an opportunity for expert testimony from economists about whether fair use will promote social welfare by discouraging inefficient price discrimination.

broad diffusion; either choice might lead to greater output.³⁶⁰ Site licenses and blanket photocopy licenses certainly impose rent-seeking costs in the form of monitoring, litigating, and negotiating licenses. But if copyright owners do not have the right to block sharing through copyright law they might choose more costly methods that rely on technology³⁶¹ and contract law.³⁶² My usual concern about the distribution of wealth is not present when the sharing at issue occurs within corporations and other institutions. One distributional issue mentioned in *Texaco* is significant though; free sharing of journal articles subsidizes research. The court dismissed this fair use factor since corporate research is directed toward profit,³⁶³ but the empirical evidence shows substantial positive externalities flow from corporate research.³⁶⁴ Some type of subsidy is desirable but perhaps research tax credits are a more appropriate instrument than copyright law.

D. *The Importation Right and Gray Market Goods*

Section 602(a) of the Copyright Act gives a copyright owner the right to block the importation of unauthorized copies. The primary purpose of this importation right is to stop copyright pirates at the border. Without the importation right copyright owners would have other alternatives; they could sue pirates in foreign jurisdictions where the piracy occurs, or sue to enjoin unauthorized distribution inside the U.S. The advantage of the importation right is cheaper enforcement. Proponents of copyright expansion argue for a broad interpretation of 602(a) that allows copyright owners to also block the importation of gray market goods.

³⁶⁰ Quantity discounts may increase output by encouraging the low valuation users in a corporation to use the software. Sharing may increase output if users are aggregated in a pattern that smoothes out demand and reduces the deadweight loss from non-competitive pricing. See Bakos, Brynjolfsson, & Lichtman, *supra* note 114, at 122-23 (sharing increases profit if the aggregation effect is greater than the team diversity effect). For example, a seller should be delighted if low valuation users form coalitions and high valuation users purchase individually. The coalition of low value users would be able to afford to purchase a work that the members would otherwise do without. Copyright owners could promote this outcome by targeting enforcement activity toward high valuation users; *id.* at 141-42 (sharing increases profit if coalitions are formed mainly by low valuation users.) High valuation users may be more visible and so easier to monitor for copyright infringement.

³⁶¹ Software sharing can be controlled through encryption technology. See Meurer, *supra* note 2 at 889-92. Section 1201 of the Copyright Act (part of the DMCA) facilitates this encryption strategy by prohibiting unauthorized decryption. See Samuelson, *supra* note 191.

³⁶² It is unclear whether sharing that is sanctioned as a fair use can be waived in a software license agreement. Proponents of the Uniform Computer Information Transactions Act (UCITA) certainly view fair use as a default term that can be waived by contract. See Raymond Nimmer, *Licensing in the Contemporary Information Economy*, WASH. U. J. L & POL'Y. forthcoming (2001). Critics argue such contract terms are vulnerable to copyright preemption. See Nimmer, *et al.*, *supra* note 192; Lemley, *supra* note 192. For commentary on the role of UCITA in promoting price discrimination see Jean Braucher, *When Your Refrigerator Orders Groceries on Line and Your Car Dials 911 after an Accident: Do We Really Need New Law for the World of Smart Goods?* WASH. U. J. L & POL'Y. forthcoming (2001).

³⁶³ See 60 F.3d at 921-22.

³⁶⁴ See Zvi Griliches, *The Search for R&D Spillovers*, 94 SCAND. J. ECON. 29, 43 (1992).

Gray markets arise to arbitrage against geographic price discrimination.³⁶⁵ Geographic price discrimination between buyers in different countries is a common practice in the marketing of consumer goods. The usual motivation is that buyers in the domestic market have a stronger demand than foreign buyers so domestic buyers are charged a higher price. Arbitrage gives rise to gray markets whereby low priced goods intended for foreign markets are sold in the domestic market.

The proper treatment of gray market goods is the subject of a long-standing debate in trademark law that has spilled over into copyright law.³⁶⁶ Under trademark law gray market goods must be distinguished from counterfeit goods. Both types of goods are labeled and packaged to match authorized goods. The difference is that gray market goods are made by the trademark holder or a licensee, while counterfeit goods are made without permission. Trademark holders have strong rights against counterfeit goods, but fairly weak rights against gray market goods.³⁶⁷

Manufacturers have appealed to copyright law to bolster their defenses against gray market goods. They rely on the copyright covering product labels and packaging. Under a broad reading of §602(a), copyrighted works (including labels and packages) cannot be imported into the U.S. without permission from the copyright owner.³⁶⁸ Such a broad reading promotes geographic price discrimination by deterring gray market transactions. Various courts endorsed the use of §602(a) to deter gray markets,³⁶⁹ but the Supreme Court recently signaled that copyright law must not be contorted to recover the protection trademark holders are denied under trademark law.³⁷⁰

In *Quality King Distributors, Inc. v. L'anza Research Int'l, Inc.*,³⁷¹ the Supreme Court held that the first sale doctrine trumps the copyright owner's right to control

³⁶⁵ Gray markets arise to arbitrage away price differentials caused by exclusive national territories. Exclusive territories are established to facilitate third degree geographic price discrimination, but also to encourage investment by distributors in local goodwill and service. Nancy T. Gallini & Aidan Hollis, *A Contractual Approach to the Gray Market*, 19 INT'L REV. L. & ECON. 1, 4-5 (1999). The empirical evidence establishes that geographic price discrimination is common, and probably the most important cause of gray market transactions. *Id.* at 6 (empirical evidence shows that price discrimination is probably the most important cause of gray market transactions). David A. Malueg & Marius Schwartz, *Parallel Imports, Demand Dispersion, and International Price Discrimination*, 37 J. INT'L ECON. 167, 173-74 (1994) (reviewing empirical evidence and concluding that arbitrage against price discrimination is a significant source of gray market activity).

³⁶⁶ Shubha Ghosh, *An Economic Analysis of the Common Control Exception to Gray Market Exclusion*, 15 U. PA. J. INT'L BUS. L. 373, 374 (1994).

³⁶⁷ See NIMMER, *supra* note 204, at § 8.11[B] (limited scope of trademark protection against gray market goods)

³⁶⁸ The statute lists various exceptions including personal use.

³⁶⁹ See e.g., *BMG Music v. Perez*, 952 F.2d 318 (9th Cir. 1991), *cert. denied*, 112 S. Ct. 2997 (1992); *L'anza Research Int'l v. Quality King Distributors, Inc.*, 98 F.3d 1109 (9th Cir. 1996).

³⁷⁰ The Supreme Court declined the opportunity to comment on the link between copyright law and price discrimination. *Quality King* at 153. See also Ronald A. Cass, *Price Discrimination and Predation Analysis in Antitrust and International Trade: A Comment*, 61 U. CIN. L. REV. 877 (1993) (lamenting absence of economic analysis of price discrimination in international trade law).

³⁷¹ *Quality King Distributors, Inc. v. L'anza Research Int'l, Inc.*, 523 U.S. 135, 118 S. Ct. 1125; 140 L. Ed. 2d 254 (1998).

imports. Let me review the facts of the case.³⁷² L'anza manufactured shampoo and held a copyright on the label on the shampoo bottle. It charged a high price for the shampoo in the U.S. and a lower price elsewhere. Quality King, an American wholesaler, obtained some L'anza shampoo in the gray market. Quality King imported shampoo it obtained from a distributor in Malta who obtained it from a distributor in the U.K. L'anza exported its shampoo to the U.K. distributor for sale outside the U.S. The Court held that L'anza could not block reimportation of its shampoo.

Despite *Quality King*, some commentators have speculated that the importation right still has some force against gray market goods.³⁷³ They suggest that when a copyrighted work is manufactured under license outside of the U.S. then Section 602(a) can still be used to block unauthorized imports.³⁷⁴ They would distinguish *Quality King* by emphasizing that manufacture and first sale of the L'anza shampoo occurred in the U.S. Thus, they distinguish *importation* from *reimportation*.

So we see three possible importation right regimes under copyright: broad exclusion of gray market goods regardless of their origin; exclusion of only those gray market goods authorized for manufacture and sale abroad; and no exclusion of gray market goods under the importation right. The first two policies both give considerable support to international price discrimination. I prefer the third policy because I see more harm than good coming from price discrimination in markets that are likely to be affected.³⁷⁵

I favor a broad reading of *Quality King* that limits the importation right to its original purpose of blocking pirated works at the border.³⁷⁶ I will justify my opinion by tracing out the impact of geographic price discrimination and the arbitrage barrier created

³⁷² Justice Stevens was unsure of the exact chain of transactions leading to *Quality King*, but the following version served as the basis for the decision. *Id.* at 139.

³⁷³ See NIMMER, *supra* note 204, at § 8.12[B][6][c] (unclear whether *Scorpio* survives *Quality King*).

³⁷⁴ The Section 602(a) importation right applies to goods manufactured outside of the U.S. that are imported without authorization. See *CBS v. Scorpio Music Distributors*, 569 F. Supp. 47 (E.D. Pa. 1983), *aff'd without op.*, 783 F.2d 424 (3d Cir. 1984). The copyright holder might authorize production and sale abroad. For example, in *CBS v. Scorpio Music Distributors, Inc.*, 569 F. Supp. 47 (E.D. Pa. 1983) CBS authorized the manufacture of certain phonorecords in the Phillipines. Those phonorecords were sold in the Phillipines to a buyer who exported them to the U.S. CBS succeeded in an infringement claim against the importer under §602(a). That section makes unauthorized importation of a work into the U.S. a violation of §106(3). The concurring opinion of Justice Ginsburg notes that the holding in *Quality King* does not necessarily apply the second scenario since these facts were not before the Court, but it seems hard to find any other reading of the opinion. It is also hard to find any policy basis for treating the two cases differently. To move within the scope of *Scorpio*, L'Anza could establish a manufacturing facility outside of the U.S. Section 602(a) would then be available to block unauthorized imports. See Daniel A. De Vito & Benjamin Marks, *Preventing Gray Market Imports after Quality King Distribs., Inc. v. L'Anza Research*, 10 No. 5 J. PROPRIETARY RTS. 2 (1998).

³⁷⁵ Choosing between the first two policies, I think partial exclusion is a worse policy than complete exclusion of gray market goods. A policy that allows exclusion of gray market goods that are manufactured abroad provides an inefficient incentive to shift domestic production abroad.

³⁷⁶ *Quality King* at 146 (Section 602(a) provides a private right against piratical importers and Section 602(b) authorizes the Customs Service to block pirated imports). See NIMMER, *supra* note 204, at § 18.02 (the Customs Service has authority to exclude pirated imports but not gray market imports).

by Section 602(a). First, I will comment on gray market software, movies, and music. Then I will comment on gray markets involving goods that gain copyright protection only from labels and packages. Trademark and copyright policy issues merge when I consider products like shampoo and perfume. I join the commentators who oppose the use of trademark law to suppress gray markets,³⁷⁷ and I oppose the use of copyright law to help trademark holders price discriminate.³⁷⁸

I suspect the social welfare effects of geographic price discrimination in movies and music are largely negative. I am not so sure when it comes to software, though. A preliminary question is how we should measure social welfare. We could define social welfare in terms of American interests only, or we could define it on a global basis. I will use a broad welfare measure that considers global social welfare; I will remark on the implications of the measure that only considers American business and consumers in footnotes. The choice does not alter my policy conclusions.

Social welfare depends on the amount and distribution of surplus. The amount of surplus depends on rent-seeking costs, and the incentives to create and distribute copyrighted works. Gray market enforcement activity creates obvious rent-seeking costs. Those costs include monitoring and litigation by copyright owners, enforcement activity by the Customs Service, and litigation costs by defendants.³⁷⁹ The other social welfare factors require more careful analysis. Let me start with diffusion.

I am a price discrimination pessimist when it comes to geographic price discrimination; I believe it restricts diffusion of copyrighted works. Software, music, and video are all sold abroad regardless of whether price discrimination is feasible or practiced.³⁸⁰ Thus, geographic price discrimination does not open new markets for these works.³⁸¹ The absence of new markets is a rough indicator that geographic price

³⁷⁷ See Gallini & Hollis, *supra* note 365, at 13 (trademark law should not be used to block gray market goods; sellers should be limited to contract law); Ghosh, *supra* note 366, at 374 (supporting gray markets subject to labeling requirements that minimize consumer confusion); William R. Cornish *Trade Marks: Portcullis for the EEA*, 20 Eur. Int. Prop. R. 172 (1998) (supports international price discrimination under copyright and patent as an investment incentive and opposes discrimination under trademark law).

³⁷⁸ The trend in Europe favors gray markets and opposes the use of intellectual property to facilitate international price discrimination. See S. O. Spinks, *Exclusive Dealing, Discrimination, and Discounts Under EC Competition Law*, 67 ANTITRUST L. J. 666-67 (2000). In a case involving the sale of bananas the European Court of Justice held that geographic price discrimination violates Article 82(c) of the EC Treaty. *Id.*

³⁷⁹ There may be additional costs if copyright holders can abuse the importation right as a tool to discourage foreign competition. For a related argument in the antitrust context see Janusz Ordover & Robert Willig,

³⁸⁰ The low transportation and point of sale distribution costs encourage software, music and movie sellers to transact with high valuation sellers in far flung markets regardless of whether price discrimination is allowed.

³⁸¹ Low-income countries that might benefit from price discrimination have substitutes available if the price of American movies and music rise. Music is available from around the world and a few countries, notably India, offer significant competition to the American movie industry. The main effect of American price discrimination in movies and music is not to open new markets, but to take business from music and movie sellers from other countries.

discrimination causes total surplus to decline.³⁸² The drug market is an interesting contrast. It seems likely that geographic price discrimination, aided by patent protection, does open new drug markets.³⁸³ The opening of new drug markets in poor countries probably causes drug output to rise, and that is a necessary condition for an increase in surplus.

The distributional effects of geographic price discrimination are fairly clear. American copyright owners benefit, foreign consumers probably benefit, and American consumers probably suffer.³⁸⁴ Thus, American consumers are paying to support exports. An export subsidy might be laudable in a few cases. The most likely candidate is geographic price discrimination in the drug market. The typical American might not mind subsidizing drug sales in poor countries.³⁸⁵ I don't think the same generous attitude would prevail when it comes to software, videotapes, and music CDs.

The final issue is whether the extra profit that comes from geographic price discrimination provides desirable productive incentives — probably not with regard to movies and music. The incentive in those industries is already adequate or perhaps too large.³⁸⁶ I presented the basic argument in the earlier section on movie merchandising. Here I add a new wrinkle to the argument as applied to movies. Pursuit of international revenue has distorted the content of high budget American movies. The scripts are simplified to increase appeal to audiences speaking different languages.³⁸⁷ Assuming geographic price discrimination actually opens new foreign markets,³⁸⁸ then the fraction of movie revenue coming from abroad probably increases with discrimination,³⁸⁹ and the problem is worsened.

³⁸² See VISCUSI, VERNON, & HARRINGTON, *supra* note 176, at 279-283.

³⁸³ The costs of setting up local distribution and regulatory costs are far higher for drugs than software, music or video.

³⁸⁴ See Malueg & Schwartz, *supra* note 365, at 191 (international price discrimination raises total surplus but hurts U.S. consumers).

³⁸⁵ Though, they might not be so happy about subsidizing Canadian and European drug sales. A preferable alternative would have the U.S. government purchase the drugs and distribute them as foreign aid. Then the justification for international price discrimination in pharmaceuticals starts to unravel.

³⁸⁶ See *supra* text at notes x for a discussion of productive incentives in the movie and music industries. Recall that price discrimination facilitated by the public performance right is one reason these industries get a sufficient return.

³⁸⁷
³⁸⁸ See Malueg & Schwartz, *supra* note 365, at 190 (international price discrimination probably allows additional countries to be served)

³⁸⁹ Suppose that marginal cost is zero and the domestic market has consumers with valuations of 10, 8, and 4. Foreign market A has consumers with valuations 7, and 5. Foreign market B has consumers with valuations 3, and 1. Under a uniform world price the seller would charge 7, and get and get 14 in revenue from the U.S. and 7 in revenue abroad. If the seller can charge a different price in each country, then the domestic price is 8, the price in A is 5, and the price in B is 3. The revenue from the U.S. is now 16, the revenue from A is now 10, and the revenue from B is 3. The fraction of revenue coming from the U.S. declines from 2/3 under uniform pricing to about 1/2 under price discrimination. Counterexamples, are possible, but I think that price discrimination will usually increase the fraction of movie revenue generated abroad.

When it comes to software, there is a better argument that bigger profits from discrimination will cause a desirable increase productive incentive. New software often creates benefits that cannot be captured by software sellers. A new software product may be complementary with old products and raise their value. New software might contain innovative features that can be incorporated into future products. Nevertheless, two factors lead me to conclude that the software industry will do quite well without copyright protection against gray markets. First, patent protection is available as an additional source of productive incentive. Second, software sellers can still practice geographic price discrimination despite *Quality King*. Let me comment further on this second point.

Even without the aid of Section 602(a), there are other ways for software sellers to block gray market arbitrage.³⁹⁰ They can rely on product differentiation, for example, they can deny customer service and warranties to gray market software. More effectively, they can use language to differentiate software. When the screen output and manuals are not in English, the software is not attractive to U.S. gray market importers.³⁹¹ Besides product differentiation, site licensing deters gray market imports. American buyers who agree to a site license do not get much benefit from a gray market purchase, because of the quantity discount built into site licenses.³⁹² One more tactic is available for sellers of high value, low volume software. They can use contract law and self-help to regulate their distribution network. A seller can monitor the distribution chain and punish distributors who cooperate with gray market arbitrageurs.³⁹³

Let me conclude this section with my policy evaluation of cases like *Quality King*. I cannot imagine that the incentive for production and distribution of labels on shampoo bottles could be too small. The only serious defense on policy grounds of an importation right for the authors of product labels is that it stops importers from free-

³⁹⁰ Even when the nominal price of software is uniform across countries, enforcement policy can create a kind of indirect price discrimination. Weaker enforcement in low demand countries allows more software sharing and effectively a lower price.

³⁹¹ Sellers might also design lower quality software to market in countries with weaker demand. All of these methods of second degree price discrimination come with the social cost of greater implementation costs. See supra text at notes x.

Section 602(a) is more important to geographic price discrimination for music and movies. It is hard to use product differentiation to support price discrimination for these products. Obviously, customer service and warranties are not relevant. One possibility is dubbing movies into foreign languages. Another possibility is to encode movies or music so they can only be played on devices manufactured for a particular country or region. The movie industry has taken steps in that direction with country codes embedded in DVD movies. This social cost could be avoided by third degree price discrimination supported by the importation right.

³⁹² One question is whether American buyers will decline a site license and wait for gray software to become available. Many buyers will choose the site license to avoid the delay and uncertainty associated with gray market purchases. They might be given further incentives because of product differentiation. Also network administrators like to standardize the software on a local network and they are apt to discourage adoption of a different version or brand of gray market application software.

³⁹³ This tactic is not likely to be effective for mass marketed software, music and video.

riding on marketing investments in the U.S. by the product maker.³⁹⁴ But the importation right is not necessary to establish exclusive territories and encourage marketing investment. Manufacturers face this same problem in a strictly domestic context, and they assign exclusive territories to distributors so that each distributor will reap the full benefit of local service and advertising.³⁹⁵ Contracts and other business practices that minimize the free-rider problem are effective domestically and should also be adequate for international marketing.³⁹⁶ There is no reason to ask American consumers to pay an implicit subsidy on shampoo exports or help shampoo manufacturers manage their marketing and distribution problems.³⁹⁷

Some price discrimination might persist after Quality King, but the differential that is feasible is limited by shipping costs.³⁹⁸ Alternatively, L'Anza could package the shampoo differently for foreign markets. An obvious step is to translate the label into the language of the target market. Of course, the imported shampoo in this case was originally distributed in England and bore English labels. The package could be completely revised to include a new trademark and trade dress. This has the advantage of stopping free-riding on advertising by a party who imports shampoo into the U.S. A third option is to stipulate by contract with distributors that they shall not facilitate gray market goods.³⁹⁹ The final option is to manufacture the supply for foreign markets outside the U.S., and use trademark law to block importation.⁴⁰⁰

VII. CONCLUSION

In the first half of this Article I explained how to use the tools of microeconomics to study the links between copyright law and price discrimination. As an empirical matter, a copyright analyst should care about price discrimination because it is so common in markets for copyrighted works. As a historical matter, certain elements of copyright legislation might be explained as devices chosen to facilitate price

³⁹⁴ See De Vito & Marks, *supra* note 374, at (low priced gray market products diminish good will and free ride on domestic advertising and other marketing).

³⁹⁵ *Id.* at 1, 2 (the economic effect of blocking gray markets is equivalent to allowing a manufacturer to establish exclusive territories).

³⁹⁶ See Gallini & Hollis, *supra* note 365, at 4-5 (there are four motives for exclusive territories: price discrimination, softening price competition, discouraging free-riding, and avoiding consumer confusion)

³⁹⁷ Alternatively, L'Anza could package the shampoo differently for foreign markets. An obvious step is to translate the label into the language of the target market. Of course, the imported shampoo in this case was originally distributed in England and bore English labels. The package could be completely revised to include a new trademark and trade dress. This has the advantage of stopping free-riding on advertising by a party who imports shampoo into the U.S. A third option is to stipulate by contract with distributors that they shall not facilitate gray market goods. See De Vito & Marks, *supra* note 374, at ?.

³⁹⁸ See Ghosh, *supra* note 366 at 377 (explaining the social costs associated with the international shipment of gray market goods).

³⁹⁹ See *id.*

⁴⁰⁰ A U.S. trademark holder may bar the importation of goods bearing the same trademark when manufactured by a foreign manufacturer, but cannot stop importation of goods made under the control of the domestic trademark holder. See *K-Mart Corp. v. Cartier, Inc.*, 486 U.S. 281, 292 (1987); Ghosh at 379 (the Customs Service is empowered to stop gray market goods that are made by a foreign trademark licensee).

discrimination. Regardless of their historical origins, there are sections of the statute that apparently serve no economic purpose other than promoting price discrimination. As a normative matter, policy makers need to understand that the allocation of rights between producers and users powerfully affects the practice of price discrimination.

In the second half of this Article I presented a series of applications. I explained when courts should and should not enforce consumer use restrictions in digital content licenses of the sort analyzed in *ProCD v. Zeidenberg*. I offered a theory for properly defining public performance as these terms are used in Section 106(4) of the Copyright Act. I argued against the use of copyright law to facilitate tying of computer software and maintenance service. I argued against the merchandising right that movie producers enjoy under Section 106(2) of the Copyright Act. I commented on the relationship between fair use, price discrimination, and small-scale sharing of copyrighted works. Finally, I praised *L'Anza v. Quality King* a recent case that discouraged price discrimination by restricting the use of the Section 602(a) of the Copyright Act to block gray market imports.