George Mason University

SCHOOL of LAW

Copyright Redundancy

Michael Abramowicz

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Copyright Redundancy

by Michael Abramowicz*

Copyright theorists often observe that copyright law presents tradeoffs between incentives to produce new works and dissemination of existing works. In this Article, Professor Abramowicz points out that a marginal reduction in the number of works produced may enhance social welfare. As the industrial organization literature on product differentiation has long recognized, a potential entrant into an imperfectly competitive market does not take into account any reduction in business that entry will cause existing producers to suffer. As a result, entry may occur even if it reduces social welfare. Concern about the rent dissipation associated with such entry is particularly relevant to markets for copyrighted works, both because copyright inherently involves tradeoffs and because the low cost of reproducing copyrighted works means that marginal entry is less likely to expand the number of consumers whom a market can serve. Rent dissipation concerns, however, need not lead to radical copyright reform. To the contrary, such concerns help explain otherwise puzzling aspects of copyright law, including ways in which copyright is surprisingly narrow and ways in which it is surprisingly broad. For example, rent dissipation theory helps account for both the contours of fair use doctrine and the lengthy copyright term.

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* Assistant Professor of Law, George Mason University. J.D., Yale Law School; B.A., Amherst College. For research support, I would like to thank the Law and Economics Center at George Mason. For excellent comments, I thank David Bernstein and Terrence Chorvat. Any remaining errors can be corrected in a subsequent otherwise redundant version of this Article.

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INTRODUCTION

The consumer of copyrighted works buys in markets overflowing in variety, bordering on redundancy. Hollywood offers two separate movies about asteroids hitting the earth.[1] Radio stations play songs by both the Backstreet Boys and 'N Sync.[2] Every television network has offered a reality program in which contestants are gradually eliminated until a sole winner remains.[3] A law professor can choose from at least a dozen civil procedure casebooks,[4] and a

[1] *See* DEEP IMPACT (Paramount Pictures 1998). *But don't see* ARMAGEDDON (Touchstone Pictures 1998).

[2] *But cf.* Lauren Armstrong, *Move Over, 'N Sync: The Backstreet Boys Are the Best Boy-Band Around*, GREENSBORO NEWS & REC., June 29, 2000, at 12 (purporting to identify some differences between the two bands).

[3] CBS inaugurated the genre with *Survivor* and *Big Brother*. NBC integrated the concept with a dating show in *Chains of Love* and with a game show in *The Weakest Link*. ABC offered *The Mole*. Fox's *Boot Camp* prompted a lawsuit by CBS, which alleged that *Boot Camp* infringed its copyright on *Survivor*. *See* Phil Rosenthal, *Reality Shows Wage Turf War*, CHI. SUN-TIMES, April 11, 2001, at 55.

[4] *See, e.g.*, JOHN J. COUND ET AL., CIVIL PROCEDURE: CASES AND MATERIALS (8th ed. 2001); ROBERT M. COVER ET AL., PROCEDURE (1988); DAVID CRUMP ET AL., CASES AND MATERIALS ON CIVIL PROCEDURE (4th ed. 2001); RICHARD H. FIELD ET AL., CIVIL PROCEDURE: MATERIALS FOR A BASIC COURSE (7th ed. 1997); RICHARD D. FREER & WENDY COLLINS PERDUE, CIVIL PROCEDURE: CASES, MATERIALS, AND QUESTIONS (3d ed. 2001); JOEL WILLIAM FRIEDMAN ET AL., THE LAW OF CIVIL PROCEDURE:

reader of romance novels faces a far wider selection.[5] A well-stocked newsstand carries multiple magazines on almost every hobby or interest. An Internet user can surf on Internet Explorer, Netscape Navigator, or countless imitators, each of which will allow browsing of the same news story from any of a number of media outlets. To intellectual property theorists, who view providing an incentive to generate new works as a principal purpose of copyright,[6] copyright must seem successful indeed.

From the consumer's perspective, such product diversity, though perhaps annoying on occasion, is at least a modest blessing. Some adolescents will count themselves as better off for being able to listen to both the Backstreet Boys and 'N Sync instead of just one of these groups. While few law professors will dare assign their classes two civil procedure casebooks, one text might match a particular professor's style and pedagogy better than its competitors. And some Internet users find Explorer useful for some tasks and Navigator, for others. In all of these areas, competition may spur innovation and lower prices.[7] Past a certain point, though, the benefits to consumers of similar copyrighted works may be small. Law professors and their students probably would not be much worse off if they had to pick from six casebooks instead of twelve. Most of those who chose to see both asteroid movies would have been almost as satisfied if one of those movies simply had never existed, and movie buffs perhaps might have substituted other natural disaster flicks. And though many readers were presumably upset when *Mademoiselle*

CASES AND MATERIALS (2002); GEOFFREY C. HAZARD, JR. ET AL., PLEADING AND PROCEDURE: STATE AND FEDERAL—CASES AND MATERIALS (8th ed. 1999); A. LEO LEVIN ET AL., CIVIL PROCEDURE: CASES AND MATERIALS (2d ed. 2000); RICHARD L. MARCUS ET AL., CIVIL PROCEDURE: A MODERN APPROACH (3d ed. 2000); JEFFREY A. PARNESS, CIVIL PROCEDURE FOR FEDERAL AND STATE COURTS (2001); MAURICE ROSENBERG ET AL., ELEMENTS OF CIVIL PROCEDURE (5th ed. 1990); STEPHEN C. YEAZELL, CIVIL PROCEDURE (5th ed. 2000).

[5] The publisher Harlequin estimates that heroines in the romance novels that it alone has produced since 1949 have married at least 8000 times. *See* Lynn Van Matre, *Harlequin and Gowns Enjoy Perfect Marriage*, CHI. TRIB., Feb. 8, 2001, at 7.

[6] This purpose is arguably enshrined in the Constitution itself. *See* U.S. CONST. art. I, § 8, cl. 8 (authorizing Congress "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries"). As the Supreme Court has noted, "[T]he ultimate aim is, by this incentive, to stimulate artistic creativity for the general public good." Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975). *See also* 1 PAUL GOLDSTEIN, COPYRIGHT § 1.1 (1998) (stating that copyright law attempts "to encourage the widest possible production and dissemination of literary, musical and artistic works."). The Constitution, however, does not specify that its goal is to maximize production of literary works, only that its goal is to promote progress.

[7] Edmund Kitch has noted the price effect. "[C]opyrights do not prevent competitors from creating works with the same functional characteristics, as evidenced, for example, by the numerous dictionaries available, by the many television shows, novels, and movies with similar themes and characteristics, or by the many competing software programs," Kitch observes. Edmund W. Kitch, *Elementary and Persistent Errors in the Economic Analysis of Intellectual Property*, 53 VAND. L. REV. 1727, 1730 (2000). Such redundancy, Kitch explains, helps explain why copyrights are not monopolies. *See id.* at 1729-38.

magazine folded,[8] they probably found solace in alternatives like *Allure*, *Cosmopolitan*, *Glamour*, *In Style*, *Jane*, *Marie Claire*, and *Self*.[9]

Copyright theorists often consider tradeoffs between incentives to produce new works and other values, such as dissemination of existing works to large numbers of users.[10] An expansive doctrine of fair use, for example, may allow more users access to copyrighted works, but any expansion will decrease incentives to produce new works.[11] The assumption underlying many such evaluations is that decreased incentives to produce works necessarily result in lower social welfare—the more works, the merrier. This assumption seems almost surely correct if the comparison is of extremes. A hypothetical world without copyright at all would be an impoverished one.[12] Meaningful disagreements about copyright law, however, are about small changes with real but perhaps not drastic effects on production incentives. On the margins, the assumption that a decrease in production incentives would diminish welfare is far more problematic. Perhaps we would be better off if the marginal movie, rock band, television show, casebook, magazine, software program or news source had never existed. If so, then apparent tradeoffs may be illusory, with decreased production incentives counting as a benefit, not a cost.

This Article explains why less may be more at the edges of the world of copyright and shows how copyright law already combats redundancy. The Article focuses on the economics of

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[8] *See* Alex Kyczynski, *Goodbye to* Mademoiselle*: Conde Nast Closes Magazine*, N.Y. TIMES, Oct. 2, 2001, at C2.

[9] I do not mean to suggest that women buy more redundant magazines than men. The success of *Maxim*, after all, spurred a large number of imitators. *See* Matthew Castellan, *Magazines Jump on Maxim's Bandwagon*, FOX NEWS, July 30, 2002, *at* http://www.foxnews.com/story/0,2933,59051,00.html.

[10] Alireza Neghavi and Günther Schulze offer the following recent summary of the conventional wisdom:

> For a welfare assessment of copyright protection, the negative static effects of copyright protection need to be weighed against its positive dynamic effects. The static effect is that the protected artistic product or the intellectual property receives only suboptimal dissemination, i.e. it is underconsumed. Given that a product has been produced, it is optimal from a welfare point of view to sell it at its marginal cost, which is typically very low. . . . Copyright protection puts the producer in a monopolistic situation for the duration of the copyright thereby ensuring positive profits. This establishes an incentive to produce innovations, but at the same time reduces consumption compared to a non-monopolistic situation. The optimal copyright protection balances the effect of increased incentives to produce market innovations from higher protection against the reduced consumption from it at the margin.

Alireza Jay Naghavi & Günther G. Schulze, *Bootlegging in the Music Industry: A Note*, 12 EUR. J.L. & ECON. 57, 62-63 (2001).

[11] *See, e.g.*, Pierre N. Leval, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1110 (1990) ("The doctrine of fair use limits the scope of the copyright monopoly in furtherance of its utilitarian objective. . . . [T]he use must be of a character that serves the copyright objective of stimulating productive thought and public instruction without excessively diminishing the incentives for creativity."); Glynn S. Lunney, Jr., *Fair Use and Market Failure:* Sony *Revisited*, 82 B.U. L. REV. 975, 977 (2002) ("On the one side, a [fair use] may indirectly lead to fewer works of authorship by reducing the incentives to create such works. On the other, allowing such use to continue may directly improve the public's ability to use, transform, or otherwise obtain access to existing works.").

[12] That does not mean that a world without copyright would have no works at all. *See generally* Stephen Breyer, *The Uneasy Case for Copyright: A Study of Copyright in Books, Photocopies, and Computer Programs*, 84 HARV. L. REV. 281 (1970) (arguing that copyright law appears to be justified but that the case is close); Arnold Plant, *The Economic Aspects of Copyright in Books*, 1 ECONOMICA 167, 168-69 (1934) (noting that many authors would continue to publish in the absence of copyright).

product differentiation, a venerable area of study in industrial organization but one that has received virtually no attention in legal scholarship, at least outside antitrust law.[13] The basic insight is straightforward, an elaboration of the intuition that once a number of choices exist in a particular genre, further expansion of choice adds relatively little social value. The problem, as it is termed in the literature, is that of *demand diversion*, sometimes called *business stealing*.[14] A producer entering a market with differentiated products cares about its own profit and ignores the effect of entry on other producers. By writing a vegetarian cookbook, I may be able to win many sales that otherwise would have gone to the 330 vegetarian cookbooks that already exist.[15] My cookbook may offer better recipes and other features that benefit consumers, but because of these diverted sales, I may choose to write the cookbook even if the increase in consumer welfare is less than the cost of producing the cookbook. My entry into the cookbook market might thus be an example of wasteful *rent dissipation*, reducing the rents (or profits) that existing cookbook authors otherwise would have enjoyed without producing an offsetting social benefit. Society therefore might be better off if I had opened a restaurant instead of written a cookbook.[16]

The danger of overentry, that is of a greater than socially optimal number of producers entering the market, is not limited to markets for copyrighted works. Perhaps we have too many restaurants, yet we probably would not tolerate a "restaurant board" that would block entry in the restaurant market.[17] Such distrust in government solutions would be even more appropriate in

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[13] For an analysis of how product differentiation should affect merger analysis, see Christopher A. Vellturo, *Creating an Effective Diversion: Evaluating Mergers with Differentiated Products*, ANTITRUST, Spring 1997, at 16.

[14] For an early discussion of the phenomenon, see N. Gregory Mankiw & Michael D. Winston, *Free Entry and Social Inefficiency*, 17 RAND J. ECON. 48 (1986).

[15] *See* http://www.amazon.com/exec/obidos/search-handle-url/index%3Dbooks%26field-keywords%3Dvegetarian%20cookbook (last visited Dec. 30, 2002) (listing 330 cookbooks). No matter how original the 331st entrant, a substantial percentage of its sales is likely to come from those of its competitors.

[16] The opportunity cost of copyrighted works figures prominently in Glynn S. Lunney, Jr., *Reexamining Copyright's Incentives-Access Paradigm*, 49 VAND. L. REV. 483 (1996). Lunney explains:

> If we broaden copyright, we increase the economic return on any given authorship investment. We can thereby lure resources, in the form of labor and capital, away from other productive endeavors into the production of copyrighted works and lead the market to produce additional works. But to create these additional works, we must strip the resources from other sectors of the economy.

Id. at 487-88. Lunney accordingly recognizes that copyright should seek to encourage individuals to invest in authoring more valuable works. *See, e.g.*, *id.* at 490-91. Lunney, however, does not consider rent dissipation and product differentiation theory and arrives at conclusions quite different from this Article's. *Compare, e.g.*, *id.* at 645-46 (advocating limits on derivative rights), *with infra* notes 150-155 and accompanying text (advocating a broad derivative right). For another article offering a brief recognition of the opportunity cost of copyrighted works, see Robert M. Hurt & Robert M. Schuchman, *The Economic Rationale of Copyright*, 56 AM. ECON. REV. 421, 425 (1966).

[17] Such intolerance is not an inevitable aspect of a legal system, even of one that encourages free enterprise. Jewish law, by the principle of *hasagat gevul*, prohibits the creation of a business that will produce significant demand diversion. *See generally* http://www.jlaw.com/Articles/hasagatgevul.html (last visited Jan. 13, 2003) (discussing the principle). The principle has even been applied to publishing, providing a Jewish law version of copyright. *See generally* Rabbi Israel Schneider, *Jewish Law and*

response to a proposal for a "copyright board" that would screen new works. Demand diversion, however, deserves special attention in copyright. One reason is that copyright law presents doctrinal questions that implicate broad social welfare concerns for which the possibility of overentry is relevant. The courts, for example, face questions like whether a graphical user interface can be protected by copyright,[18] or whether one song should be found to infringe a similar but not identical song.[19] In answering close questions about the breadth of property rights, judges at least indirectly may consider policy ramifications such as effects of decisions on incentives to produce new works. Copyright law is a crude instrument developed under conditions of gross uncertainty,[20] but it must be made and developed under such conditions nonetheless. As long as the copyright context, unlike the restaurant context, demands that judges make decisions about the scope of property rights, judges might as well take demand diversion into account. Some judges may even intuit that there are too many books or movies or CDs, but squelch the sentiment, thinking they are being curmudgeonly.[21]

There is, however, an even more important reason that, while it ordinarily may make sense in many economic contexts to assume that markets are perfectly competitive, the possibility of imperfectly competitive markets deserves special attention in copyright law. Copyrighted goods can be reproduced for low marginal cost, and there are two reasons that the cheapness of reproduction makes demand diversion more salient. First, a relatively small number of copyrighted works can serve a large market. Even if there are an excessive number of restaurants, each new restaurant at least increases the total capacity of the restaurant market. The number of vegetarian restaurants may determine how many people can enjoy ordering hummus,

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Copyright, *available at* http://www.jlaw.com/Articles/copyright1.html (last visited Jan. 13, 2003) (discussing Jewish law's approach to copyright more broadly). Interestingly, however, there is an exception for the teaching of Torah, suggesting that Talmudic sources recognized the possibility that education might be a positive externality. *See* Dennis W. Carlton & Avi Weiss, *The Economics of Religion, Jewish Survival, and Jewish Attitudes Toward Competition in Torah Education*, 30 J. LEGAL STUD. 253 (2001).

[18] *See, e.g.*, Lotus Dev. Corp. v. Borland Int'l, Inc., 49 F.3d 807 (1st Cir. 1995), *aff'd by an equally divided Court*, 516 U.S. 233 (1996) (considering whether the interface of a spreadsheet program infringed the copyright on Lotus 1-2-3).

[19] *See, e.g.*, Arnstein v. Porter, 154 F.2d 464 (2d Cir. 1946) (considering whether musical compositions by Cole Porter infringed the plaintiff's copyrights).

[20] *See* Lunney, *supra* note 11, at 978 ("We do not know nearly as much as we sometimes pretend regarding the economic working of the markets for copyrighted works, nor do we fully understand the relationship between increased copyright revenues and the ultimate public purpose of copyright--creation of additional works."); Jed Rubenfeld, *The Freedom of Imagination: Copyright's Constitutionality*, 112 YALE L.J. 1, 22 (2002) (recognizing that copyright raises "incredibly complex empirical questions of economic efficiency").

[21] For an unabashedly curmudgeonly argument that there are too many books published each year, see Joseph Epstein, *Think You Have a Book in You? Think Again*, N.Y. TIMES, Sept. 28, 2002, at A17, which notes that "[s]omething on the order of 80,000 books get published in America every year, most of them not needed, not wanted, not in any way remotely necessary."

but with just a single vegetarian cookbook, everyone can enjoy making hummus. Second, copyright law cares not only about production of new works, but also about dissemination of existing works. It is hard to imagine a legal change that could reduce the number of restaurants while still possibly leaving restaurant patrons better off. An expansive fair use doctrine, however, provides consumers greater access to existing works while decreasing producers' incentives to produce new works.[22] Copyright scholarship has assumed that this represents a tradeoff, with the decreased production incentives counting as a social cost.[23] Demand diversion, however, reveals that a decrease in the number of new works in fact might count as a social benefit and at least as not as much of a cost as would otherwise appear.

It might seem that even a modest decline in the rate at which copyrighted works are produced would result in a noticeably impoverished culture. Film, music and literature, however, seemed vibrant thirty or fifty years ago, even though the number of new titles on an annual basis was much lower.[24] If some percentage of copyrighted works never existed, our world might be only a little less interesting. It is important to avoid allowing cognitive tricks to affect our intuitive assessments of the value of marginal works. Though it might seem that a world in which one tenth of the movies made last year had not been produced would have been far less satisfying, that may be in part for reasons of cognitive salience.[25] We remember the movies that we have seen, but not those that we might have seen instead if a few of the movies that we had seen had not been produced. Some works that receive little attention today might receive much more in such a world. To be sure, any decrease in the number of works produced would decrease consumer welfare. This consequence may be a cost worth bearing if, for example, the reason for the decrease is a change in the law permitting greater copying of existing works.

This Article's normative ambition is to add to the jurisprudential calculus an economic consideration that, though present everywhere, is of particular relevance to copyright law. The

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[22] *See supra* notes 10-11 and accompanying text.

[23] In the patent context, one industrial organization economist has recognized that decreased production might be a social benefit. *See* Michael Waterson, *The Economics of Product Patents*, 80 AM. ECON. REV. 860, 867 (1990) (noting that patent law may make society better off by discouraging entry and thus reducing business stealing). Waterson alludes briefly to copyright in the last paragraph of his article, but his discussion assumes without justification that redundancy is less likely to be problematic for copyright than for patent. *Id.* at 869.

[24] This is evidenced in the increase in the number of copyright registrations, from 210,564 to 515,612 in 2000, despite the decrease in the legal significance of registration. *See* ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS at 54 (2001), *available at* www.copyright.gov/reports/annual/2001/law.pdf.

[25] For a discussion of how salience may have adverse effects on policy, see Timur Kuran & Cass R. Sunstein, *Availability Cascades and Risk Regulation*, 51 STAN. L. REV. 683 (1999).

theory of product differentiation, however, is useful not only normatively, but also positively. The Article will show that rent dissipation theory can explain some of the most perplexing aspects of copyright law. Copyright law, for example, may seem puzzling in its simultaneous generosity to users in allowing a wide scope of fair use and generosity to copyright holders in granting a lengthy copyright term. Rent dissipation theory, however, provides an explanation for both. The decrease in the number of copyrighted works that follows from expansive fair use may not be a social cost, or at least not as great a cost.[26] Meanwhile, toward the end of the copyright term, reproduction rights will be of less importance relative to rights in derivative works,[27] and permitting unlimited exploitation of derivative works provides an especially dangerous source of demand diversion.[28] Similarly, the contours of copyright scope, such as copyright's protection of characters and lack of protection for facts, cohere with the logic of rent dissipation theory.[29] Indeed, many controversial features of copyright law make more sense once rent dissipation considerations are taken into account. Whether they make enough sense to be justified is not the question that I seek to answer here, but one virtue of this Article's approach is that it highlights a literature that may allow for rigorous testing of copyright's social welfare balance.

Copyright, of course, is important for reasons other than economics, and recent commentators have analyzed the role of copyright in democratic governance.[30] It might seem that even if copyright produces too many works from an economic standpoint, more is at least always better from a democratic point of view. This claim, however, collapses under close analysis, and not just because the vast majority of copyrighted works add little to democratic deliberation. The dissemination of existing works is as important to democratic as to economic theory, and so if rent dissipation theory recommends, for example, broad fair use, there is no a priori reason to believe that democracy demands a different balance. Moreover, we might be better off with fewer works that clearly comment on public policy, because a significant democratic function produced by copyrighted works is to challenge individuals' prior opinions. Diversification of works may contribute to this to some extent, by exposing individuals to a wide range of points of

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[26] *See infra* Part I.B.2.b.
[27] *See infra* Part I.B.4.
[28] *See infra* notes 150-158 and accompanying text.
[29] *See infra* Part I.B.1.
[30] *See infra* sources cited notes 415-416.

view, but it also may allow individuals to select products that only reinforce their pre-existing views. This Article thus seeks to question assumptions from economics and from democratic theory that maximization of copyrighted works necessarily should be viewed as ideal.

I will approach the economic portion of the analysis from two different but related perspectives. Part I will address copyright law from the perspective of rent dissipation theory. This theory is built on an intuition that the costs associated with successive entry into a market reduce the aggregate profits of producers. Copyright law, I will argue, seeks to reduce these costs, by limiting the costs associated with creating largely redundant works. Part II explores the economics of product differentiation. In an article on copyright redundancy, it is worth emphasizing that the analysis is not redundant. In addition to providing a formal model to support the applicability of rent dissipation theory, Part II focuses on the number of producers entering a market for copyrighted works, an issue considered only briefly in Part I, rather than on whether entry by a particular producer is likely to be expensive or redundant. Most important, Part II summarizes the results of a simulation study (reported in full in the Appendix). The study reinforces the argument that business stealing is a greater concern in low marginal cost markets and it shows that regardless of whether there is underentry, permitting some copying may increase consumer welfare. While Part I is primarily positive, showing how copyright law already reflects rent dissipation concerns, Part II provides a normative foundation that explains why the rent dissipation model matters. Part III supplements the analysis with a number of different perspectives, canvassing a range of economic arguments and considering democratic issues. Part IV concludes by emphasizing that the models discussed here are testable and by considering the prospects for empirical analysis of the welfare benefits of entry in copyright markets.

I. A RENT DISSIPATION THEORY OF COPYRIGHT LAW

Although the economics of product differentiation are complex, there is a simple underlying idea, that of demand diversion or business stealing. Because a potential entrant into a market has no incentive to consider the interests of those who are already producers, the possibility for overentry arises. I will make this more precise by a close examination of a classic model of product differentiation in Part II. There is, however, a related phenomenon that captures much of the underlying intuition without the messiness of mathematics, and that is the

phenomenon of rent-dissipating races by private parties. This possibility has received some attention in the legal literature, particularly in patent law, and Part I.A will review that literature and imagine a hypothetical copyright regime with stronger property rights. This hypothetical regime would limit rent dissipation, but it would introduce other problems and concerns, particularly about freedom of speech, and a discussion of those concerns will establish a foundation for Part II.A. That part contributes to a positive theory of copyright law by showing the implications of rent dissipation theory for copyright law. An understanding of rent dissipation, as of any other factor relevant to copyright analysis, leaves room for debate about the wisdom of individual doctrines, but copyright law at least makes more sense once rent dissipation theory is considered.

A. Rent Dissipation Theory

The most familiar example of rent-seeking is the lobbying of public officials to secure a private monopoly,[31] a source of inefficiency that may even exceed the deadweight loss associated with monopoly pricing.[32] Any investment by a private party to capture rents, protect rents, or take rents enjoyed by another party can constitute rent-seeking, however.[33] An example not involving lobbying is that of the gold rush.[34] Suppose that I have found a gold mine worth $100,000, but because of an absence of property rights, anyone who is willing to pay $1000 for equipment can get an equal share of the mine's gold at no further cost. Then, 100 people will enter, for a total fixed cost of $100,000. Society is thus no better off than if the gold mine had never been found, as the rents that I would have earned if I were able to remove all the gold myself are dissipated away. A similar example is that of a valuable shipwreck.[35] When anyone can salvage the ship, the societal investments to find it will approach the value of the ship. If the

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[31] The seminal works are Anne O. Krueger, *The Political Economy of the Rent-Seeking Society*, 64 AM. ECON. REV. 291 (1974); and Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 W. ECON. J. 224 (1967).

[32] Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975).

[33] A related expense is by individuals seeking to prevent the rent-seeking activities of others. *See* John T. Wenders, *On Perfect Rent Dissipation*, 77 AM. ECON. REV. 456, 456-58 (1987).

[34] For a study of how emerging property rights helped prevent rent dissipation during the California gold rush, see John Umbeck, *The California Gold Rush: A Study of Emerging Property Rights*, 14 EXPLORATIONS IN ECON. HIST. 197 (1977). *See also* Stephen N.S. Cheung, *The Structure of a Contract and the Theory of a Non-Exclusive Resource*, 13 J.L. & ECON. 49 (1970) (explaining how rent dissipation may occur with any non-exclusive resource).

[35] RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 41 (5th ed. 1998).

social investments equal the value, even if the party to reach the ship is allowed to keep it in its entirety, society as a whole is no better off than if the treasure had never even existed.

Even for those who are familiar with those examples, the stark conclusion that society will entirely waste rents in seeking them may seem counterintuitive. The California Gold Rush may have been counterproductive, but surely, one might insist, the country was better off than if there had been no gold in California. Indeed, there are a number of reasons that competition may not entirely dissipate a rent. First, if some of the participants are risk-averse, as behavioral economics would predict at least when individuals are racing to capture a gain rather than avoid a loss,[36] then the total investment in the search will be less than the prize.[37] Second, because rent dissipation reflects in part opportunity costs, a rent will be entirely dissipated only if each participant is indifferent between participating in the activity and in some other activity.[38] Third, if the parties are not identically situated, rent dissipation may be reduced or eliminated.[39] To take an extreme example, if it is apparent that no matter what the efforts of others one party will definitely arrive first, then no one else will enter the race.[40] Fourth, rent-dissipating races can lead to earlier achievement of a goal, resulting in an end to rent-dissipating activities.[41] Fifth, rent dissipation may produce third-party benefits. Those participating in the California Gold Rush may have provided positive externalities to other settlers of California, and treasure hunts may result in benefits to archaeologists.[42]

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[36] *See* Daniel Kahneman & Amos Tversky, *Choices, Values, and Frames*, *in* CHOICES, VALUES, AND FRAMES 1, 20-22 (Daniel Kahneman & Amos Tversky eds., 2000) (summarizing experimental evidence indication that individuals are generally risk-averse as to gains and risk-averse as to losses); *see also* Chris Guthrie, *Framing Frivolous Litigation: A Psychological Theory*, 67 U. CHI. L. REV. 163, 177 (2000) (explaining prospect theory and applying it to the litigation context).

[37] *See generally* Arye L. Hillman & Eliakim Katz, *Risk-Averse Rent Seekers and the Social Cost of Monopoly Power*, 94 ECON. J. 104 (1984) (offering a careful analysis on the effect of risk aversion on rent dissipation).

[38] *Id.* at 104 ("[B]ecause of intrinsic second-best considerations resources used in rent seeking may not have positive shadow prices, implying that individuals' quests to secure biddable rents need not always entail socially wasteful activity.").

[39] *See, e.g.*, Christopher Harris & John Vickers, *Perfect Equilibrium in a Model of a Race*, 52 REV. ECON. STUD. 193 (1985); Wing Suen, *Rationing and Rent Dissipation in the Presence of Heterogeneous Individuals*, 97 J. POL. ECON. 1384 (1989). Full analysis of the dynamics of rent-dissipating races where the parties are not identically situated requires game theory. *See, e.g.*, Drew Fudenberg & Jean Tirole, *Understanding Rent Dissipation: On the Use of Game Theory in Industrial Organization*, 77 AM. ECON. REV. (PAPERS & PROCEEDINGS) 176 (1987).

[40] For a game theoretic analysis underscoring the possibility of incomplete rent-seeking, see Gordon Tullock, *Efficient Rent-Seeking*, *in* JAMES M. BUCHANAN ET AL., TOWARD A THEORY OF THE RENT-SEEKING SOCIETY 97 (1980).

[41] *See, e.g.*, POSNER, *supra* note 35, at 41 (noting that entry by multiple parties to find a shipwreck might lead to the wreck being found earlier).

[42] Archaeologists, however, argue that treasure hunters have generally caused archaeological damage. *See, e.g.*, Christopher R. Bryant, *The Archaeological Duty of Care: The Legal, Professional, and Cultural Struggle over Salvaging Historic Shipwrecks*, 65 ALB. L. REV. 97 (2001).

These caveats suggest that in real-world settings, rent dissipation will be incomplete. Perhaps the most significant factor reducing rent dissipation, however, is property rights. If, for example, the law specifies a unique party that has the rights to a sunken vessel,[43] then no one else will enter, thus entirely avoiding the rent-dissipating race. The owner of the vessel then has an incentive to raise the vessel when the benefits of doing so are greater than the costs. The owner, for example, may wait, if technology for the task is expected to improve or become cheaper to overcome considerations of the time value of money. Similarly, consider the example of public fisheries.[44] The existence of rent dissipation in the absence of property rights is particularly apparent here, as competition may lead to overfishing and the destruction of the fishery. The problem, however, is broader than overfishing. If the government, for example, permitted fishing each year until a sustainable 1000 fish were harvested, an inefficiently high number of fishermen would still enter the market, dissipating the value of each harvest. But if the right to the 1000 fish were granted to a single fisherman, perhaps by an auction proceeding, then the fisherman's private incentive would be to maximize the value of this rent by minimizing the cost of seeking the 1000 fish. Similarly, if the entire fishery were sold, then the owner would have both static and dynamic incentives to engage in the optimal amount of fishing.

Although rent dissipation has received no attention in copyright law, the potential of property rights to reduce rent dissipation animates Edmund Kitch's prospecting theory of patent law.[45] Research into potential innovations can be a form of rent dissipation. If there were a million dollars in potential profit to be made in developing an invention, for example by marketing and improving the light bulb, then in the absence of patent protection, producers would dissipate away this potential profit. Such rent dissipation is less obvious than the rent dissipation of the gold rush, because the competition is likely to increase consumer welfare, but it is possible that the costs of such rent dissipation may exceed the benefits.[46] Kitch's observation is that patent law does for innovation policy what a prospecting system does for a gold rush,[47] providing property rights that reduce the possibility of rent dissipation. In the absence of

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[43] The law attempts to do this. *See* Abandoned Shipwreck Act, 43 U.S.C. §§ 2101 et seq (2000).

[44] *See, e.g.*, H. Scott Gordon, *The Economic Theory of a Common-Property Resource: The Fishery*, 62 J. POL. ECON. 124 (1954).

[45] Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977).

[46] Rent dissipation theory is thus insufficient to make a priori welfare assessments, a task which industrial organization attempts. *See infra* Part II.A.

[47] Kitch, *supra* note 45, at 271-75.

property rights in the gold context, no one has an incentive to prospect for gold, unless a discovery can at least temporarily be kept secret, because others will immediately converge to share in any reward. Just as a property right solves this problem, so too does patent law provide an incentive to generate innovation despite the possibility of second-mover advantages.[48] That point is a twist on the traditional incentive rationale for patent law,[49] but Kitch also emphasized that a patent improves post-invention incentives,[50] because there is no risk of a rent-dissipating race to improve a patented product. In the absence of patent protection, such a race might result in excessive, partly redundant research, as well as earlier than optimal deployment of an invention.[51]

Patents, however, cannot eliminate rent dissipation altogether, as Donald McFetridge and Douglas Smith pointed out shortly after Kitch.[52] Rather, patent protection pushes rent-dissipating entry to an earlier stage. Instead of competing to improve and market an existing innovation, private parties in a patent regime will compete to obtain the patent.[53] The result is a patent race. That patent races are examples of rent dissipation may seem counterintuitive, because scientific races, whether or not for patents, often accelerate the pace of innovation.[54] Yet patent races can also produce redundancy, especially if different competitors run down the same blind alleys, unaware of their competitors' successes and failures.[55] Thus, patent races are a useful example of

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[48] First-mover advantages may give some incentive to innovate even absent patent protection. *See, e.g.*, Cecelia C. Conrad, *The Advantage of Being First and Competition Between Firms*, 1 INT'L J. INDUS. ORG. 353 (1983); Paul Klemperer, *Entry Deterrence in Markets with Consumer Switching Costs*, 97 ECON. J. supp. at 99 (1987); Richard Schmalensee, *Product Differentiation Advantages of Pioneering Brands*, 72 AM. ECON. REV. 349 (1982).

[49] *See, e.g.*, Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 497 n.2 (1974) (Douglas, J., dissenting) ("[T]he basic economic function of the patent system is to encourage the making and commericalization of inventions . . . .").

[50] Kitch, *supra* note 45, at 285-86.

[51] *See generally* Yoram Barzel, *Optimal Timing of Innovations*, 50 REV. ECON. & STAT. 348 (1968) (discussing the possibility of earlier than optimal deployment of an invention).

[52] Donald G. McFetridge & Douglas A. Smith, *Patents, Prospects, and Economic Surplus: A Comment*, 23 J.L. & ECON. 197, 198 (1980).

[53] Patents do not, however, eliminate post-patent rent-dissipating races, because inventors may still seek to invent around existing patents. The courts have embraced inventing around as an important benefit of the patent system. *See, e.g.*, Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512, 1520 (Fed. Cir. 1995) (stating that inventing around is "one of the important public benefits that justify awarding the patent owner exclusive rights to his invention"); State Indus., Inc. v. A.O. Smith Corp., 751 F.2d 1226, 1235-36 (Fed. Cir. 1985) (arguing that inventing around "bring[s] a steady flow of innovations to the marketplace."). Yet inventing around can be redundant too, especially if the new invention offers no advantage over the previous one. *See, e.g.*, Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1869 (1984); Donald F. Turner, *The Patent System and Competitive Policy*, 44 N.Y.U. L. REV. 450, 455 (1969).

[54] A recent example was competition in sequencing the human genome. *See* Eliot Marshall, *Rival Genome Sequencers Celebrate a Milestone Together*, 288 SCIENCE 2294 (June 30, 2000) (reporting on the early completion of an initial sequence).

[55] While patent races may accelerate the point at which a patent is awarded, they also can delay that period. Participants in a patent race may reveal enough information to prevent their competitors from obtaining a patent first, in effect moving the end point of the race farther away. *See, e.g.*, Gideon Parchomovsky, *Publish or Perish*, 98 MICH. L. REV. 926 (2000) (discussing the

rent dissipation that has some benefit for third parties, consumers who eventually will receive surplus from the invention.[56] The ultimate cost-benefit balance is theoretically indeterminate, and presumably varies from one patent race to the next. Even more theoretically complex is a comparison of the harm from pre-patent and post-invention rent dissipation. Though an important qualification, the McFetridge-Smith analysis thus does not necessarily seriously undermine Kitch's suggestion that patent law's concentration of prospecting rights promotes efficiency.

Kitch's argument, in any event, is more positive than normative, as he identifies various features of patent law that are consistent with reducing rent-seeking. For example, just as a prospector in a gold rush does not have to establish that mining is likely to be productive in a particular area to obtain a prospecting right, so too does an inventor not have to prove commercial significance to obtain a patent.[57] Mark Grady and Jay Alexander extend this positive insight by arguing that patent law seeks to provide a balance between the inefficiencies of patent races and of competitive development of existing innovations.[58] "Sometimes the threat of improvement-stage rent dissipation calls for broad protection; sometimes no such threat exists, making patent protection less important," argue Grady and Alexander,[59] who are the first to elaborate a connection between the patent and rent dissipation literatures.[60] Patent law grants broad protection when an "invention signals a set of improvements," and patents in such cases preclude "any possibility of a rent-dissipating rush to discover the modifications."[61] Patent law limits protection where patent races present the greater rent dissipation danger. For example,

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possibility of strategic disclosure); Douglas Lichtman et al., *Strategic Disclosure in the Patent System*, 53 VAND. L. REV. 2175 (2000) (providing a model of the incentive to engage in strategic disclosure). Such strategic disclosure can enhance efficiency, by limiting the scope of patents and thus reducing deadweight costs, but also may decrease the incentives to obtain patents in the first place. *See* Parchomovsky, *supra*, at 944-45.

[56] Robert Merges and Richard Nelson argue that Kitch understates the value of competition among researchers. *See* Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 872 (1990).

[57] Kitch, *supra* note 45, at 271-75.

[58] Mark F. Grady & Jay I. Alexander, *Patent Law and Rent Dissipation*, 78 VA. L. REV. 305, 317 (1992) ("[A] full accounting of the effects of the patent system must balance the savings in reduced follow-on investment against the losses from accelerated pioneering investment. It may be that the avoidance of follow-on rent dissipation more than makes up for the consequences of the race to be first."). This account thus balances the costs of both types of rent dissipation. A broader theory might also consider the benefits, such as the extent to which competition is likely to increase the amount of innovation.

[59] Grady & Alexander, *supra* note 58, at 318.

[60] Kevin Rhodes briefly makes such a connection before Grady and Alexander. *See* Kevin Rhodes, Comment, *The Federal Circuit's Patent Nonobviousness Standards: Theoretical Perspectives on Recent Doctrinal Changes*, 85 NW. U. L. REV. 1051, 1088 (1991).

[61] *Id.*

Grady and Alexander suggest that patent law's utility requirement[62] precludes patenting of compounds that have no known use because "a rule allowing chemicals to be patented before a use could be demonstrated would prompt a race to claim as many chemicals as possible, in the hope that some would prove useful during the patent term."[63]

The extent to which Grady and Alexander's rent dissipation theory of patent law accurately captures both doctrine and actual judicial decisionmaking is beyond the scope of this Article.[64] The central observation for present purposes is that it is possible that legal doctrine may seek to minimize the sum of various forms of rent-seeking, while paying attention as well to independent policy goals. At first, it might appear that copyright law does not attempt such an accommodation, because the property rights of copyright law are much weaker. While a patent prevents follow-on innovation, copyright, in both doctrine and rhetoric, encourages authors to take earlier authors' ideas and improve upon them, as long as they do so with original expression.[65] If copyright law were designed single-mindedly with minimization of rent dissipation as a goal, it likely would not allow this. Instead, copyright law might grant the first author in a particular genre the right to that genre, at least for some period of time. And so, J.K. Rowling might have to pay royalties to J.R. Tolkien, or the first cookbook to illustrate recipes with step-by-step pictures might be able to prevent publication of subsequent works.

Such a copyright law is not attractive, but let me offer a brief endorsement before I point out the obvious flaws. In a copyright regime with strong copyrights, there would be far less redundancy. If I created the illustrated cookbook genre with an Italian cookbook, for example, I might refuse to allow a large number of illustrated Italian cookbook with similar recipes. At the same time, I would have strong incentives to license the right to copy my innovation for somewhat different products, so I likely would permit illustrated cookbooks for other cuisines. It might even be profitable to license (or create myself) an illustrated Italian cookbook that offered different recipes or addressed in detail a subset of Italian cooking. Thus, there would almost

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[62] 35 U.S.C. § 101 (2000).

[63] Grady & Alexander, *supra* note 58, at 339.

[64] For evaluations of the Grady-Alexander thesis, see Donald L. Martin, *Reducing Anticipated Rewards from Innovation Through Patents: Or Less Is More*, 78 VA. L. REV. 351 (1992); Robert P. Merges, *Rent Control in the Patent District: Observations on the Grady-Alexander Thesis*, 78 VA. L. REV. 359 (1992); and A. Samuel Oddi, *Un-Unified Economic Theories of Patents—The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 284-86 (1996).

[65] *See* Baker v. Selden, 101 U.S. (11 Otto) 99, 102 (1879) ("To give to the author of the book an exclusive property in the art described therein, when no examination of its novelty has ever been officially made, would be a surprise and a fraud upon the public. That is the province of letters-patent, not of copyright.").

certainly be fewer works, but copyright holders would still author or license a range of works to appeal to a range of consumers and to encourage some consumers to buy more than one. In short, I would have incentives to create new works but not redundant works, just as a patent holder has an incentive to improve on the patented product but not to develop a product with a similar function through a different mechanism.

Of course, just as patents solve post-invention rent dissipation only at the expense of races to obtain patents, the value of such a robust copyright would produce races to obtain these copyrights.[66] Yet it seems likely that any rent dissipation here would be less harmful to the public. Such a copyright system would place a premium on originality, for it would only be by executing an idea for a new genre of work that one would receive protection. The result might well be many works that are junk, but there would be little of the redundancy often associated with patent races. In the patent context, the desired outcome is often obvious—a cure to a disease, for example—but the means to obtaining that outcome mysterious, and experimentation thus results. With copyright, though, there is less guesswork (though considerable elbow grease) involved in transforming idea to expression, and so while it is possible that there sometimes might be a race to get out the first work in a newly created genre, that possibility is much less of a concern. This robust copyright would thus stimulate the creation of truly original works, while giving copyright owners appropriate incentives to develop new works.

The first piece of bad news is that the system might still be very inefficient. Copyright would confer power not only to control the number of new works, but also to set the price of existing works.[67] The owner of the copyright to illustrated cookbooks would set a relatively high price for cookbooks, acting as a monopolist. Thus, the robust form of copyright would allow producers to obtain rents only at the cost of limiting consumer surplus. While in theory it is possible that the increase in producer welfare would offset the decrease in consumer welfare, it

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[66] Copyright races are rare under the current copyright law, because the first person to obtain a copyright does not obtain a copyright on the genre as a whole. If patent law were also nonexclusive, there similarly would likely be fewer patent races, and indeed one commentator has suggested a nonexclusive patent system for this reason. *See* John S. Leibovitz, Note, *Inventing a Nonexclusive Patent System*, 111 YALE L.J. 2251 (2002). The difficult question is whether the nonexclusive patent system would lead to more redundant development or less. Leibovitz points out that inventors would have an incentive to license their technological advances to firms lagging beyond them in development, since those firms would be able to obtain patent rights as well. *Id.* at 2272. But laggards might be less likely to drop out of a patent race for precisely this reason.

[67] If copyright is a natural monopoly, some form of natural monopoly regulation might be used to control prices. *See generally* POSNER, *supra* note 35, at 377-96 (describing the regulation of common carriers). The task might be far more difficult given the number and diversity of copyrighted works, however.

seems likely that this would not be so, for the familiar reason that monopoly pricing produces a deadweight loss. A world with very few copyrighted works and very high prices seems likely to hurt consumers more than it would help producers. Whether this holds, however, might depend on how robust the copyright was. If there were thousands of different copyright holders with rights to make different types of cookbooks, for example, the copyright holders would need to compete against one another, and so perhaps the system might produce relatively little deadweight loss while still substantially reducing redundancy.

This observation, however, points to a more fundamental problem of this hypothetical copyright regime, that it would be difficult to administer. How robust would a copyright be? Would the first illustrated cookbook provide a copyright over all future illustrated cookbooks, or only an illustrated cookbook for the same type of cuisine, or only a cookbook with the illustrations arranged in the same way? Moreover, how innovative would a new work have to be to obtain copyright protection? Would the new work need to create a new genre or sub-genre, as the above examples seem to suggest? Or would merely a new idea suffice, so that the first Italian cookbook to suggest a new technique for rolling out pizza dough could prevent others from adopting that technique?[68] How clearly would a new idea need to be stated to be entitled to a copyright? Patent law confronts such questions, and perhaps a copyright office could do the same. But the universe of ideas that would be copyrightable subject matter would be larger than the universe of patentable subject matter, and the number of copyrights (under current rules at least) dwarfs the number of patents.[69] The challenges of developing this robust copyright law accordingly likely would be greater than in the patent context.

It is, of course, the specter of such a copyright office that would be the greatest concern, even if we had confidence that the relevant officials had all the tools they would need to make copyright run smoothly. Freedom of speech may not be absolute, but preventing someone from expressing an idea or writing in a particular genre would seem to be a gross violation of freedom

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[68] Current copyright law would not allow the cookbook to monopolize the technique, even if other cookbooks' descriptions of it might seem to reflect copying of the original. *See, e.g.*, Baker v. Selden, 101 U.S. at 107 (refusing to allow the owner of a copyright in a book describing a new accounting system and providing forms for execution of the system to prevent others from selling similar forms).

[69] In 2001, the Copyright Office registered 601,659 claims. *See* ANNUAL REPORT OF THE REGISTER OF COPYRIGHTS, *supra* note 24, at 1. In the same year, 326,508 patent applications were filed with the U.S. Patent and Trademark Office. *See* U.S. PATENT ACTIVITY CALENDAR YEARS 1790-2001 (updated yearly), available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.htm. This understates the difference between the number of copyrights and patents, however, as registration is not required for copyright protection.

of speech. First Amendment doctrine, of course, tolerates the current copyright regime,[70] but granting the copyright office or even the courts the power to determine whether an idea is original or derivative would be dangerous, as would be a copyright regime that allows the initiator of an idea to prevent others from repeating it. For this reason and the others, then, this robust copyright regime is unimaginable. At least, modifications would need to be made to make such a regime palatable. For example, we might modify the regime to allow free copying of ideas. Similarly, we might limit the genres over which a copyright owner could exert control to those in which the genre is encapsulated by the copyright owner's expression (for example, in delineating a particular character) rather than by an idea. We might carve out special exceptions for speech that would be infringing but for substantial social value that could not be achieved without allowing some borrowing. In short, we would have a copyright system much like the one that we actually have.

B. Application to Copyright Law

A recognition of the normative significance of both rent dissipation theory and the possibility of overentry, though important for analysis of particular doctrinal issues in copyright, need not lead to wholesale reform of copyright law. To the contrary, this section will argue that copyright law already substantially reflects concerns about wasteful rent dissipation. That copyright might already reflect a consideration that has received no direct attention by copyright theorists or in copyright case law may seem too good to be true. There is, however, a simple public choice reason that copyright law should take into account rent dissipation. Authors and publishers have a strong incentive to seek a legal regime that will prevent others from cannibalizing their profits. Those who would engage in such cannibalization, by contrast, have little incentive to engage in lobbying, because there is little profit in being a second mover if third, fourth and fifth movers will immediately follow.[71] At the same time, no one has an

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[70] *See, e.g.*, Eldred v. Ashcroft, No. 01-618, slip op. at 28-31 (U.S. Jan. 15, 2003); Roy Export Co. v. CBS, Inc., 672 F.2d 1095, 1099 (2d Cir. 1982) ("No circuit . . . has ever held that the First Amendment provides a privilege in the copyright field distinct from any accommodation embodied in the 'fair use' doctrine.").

[71] William Landes and Richard Posner have noted that a relatively weak copyright may benefit authors, because it allows them to use others' work more. *See* William M. Landes & Richard A. Posner, *An Economic Analysis of Copyright Law*, 18 J. LEGAL STUD. 325, 332-33 (1989). Authors' incentives in general, however, are to seek a copyright law that allows use of others' work only where such use will not result in direct competition with those whose work is used. There is not much profit in engaging along with many others in such direct competition, and there is a substantial rent to protect in preventing it.

incentive to support an expansive copyright rule where the copyright holder would not gain from the property right.[72]

Private parties' incentives will thus tend to induce policymakers who seek contributions implicitly to take into account rent dissipation concerns. I do not mean to suggest that private lobbying in general will lead to optimal results, or even that copyright law is optimal as a result of private parties pursuing their own legislative interests. Some organizations may serve as proxies for consumers in legislative bargaining,[73] and legislators should be expected to take consumer welfare somewhat into account in all but the most cynical theories of public choice, but producers have an obvious lobbying advantage.[74] Thus, deviations of copyright doctrine from a hypothetical optimum that would take into account consumer welfare as well as rent dissipation should be expected, and indeed I will point out instances in which copyright law seems to protect producers at the expense of consumers. The analysis here, however, suggests simply that legislators seek to avoid rent dissipation and that some aspects of copyright law that might seem either to be giveaways to content producers or to be strange exceptions to such giveaways at least have some economic foundation.

Even where rent dissipation is relevant, copyright doctrine might deviate from the policy recommendation that rent dissipation theory would make. There are at least two reasons for this. First, copyright doctrine reflects many considerations, both economic and noneconomic, and as the analysis of the hypothetical copyright regime above demonstrated, at times these considerations will be in tension. I do not mean in introducing this positive theory of copyright to deny the relevance of other possible positive considerations. Rent dissipation theory helps to resolve some of copyright law's puzzles, but these are only puzzles in the first place because they reflect deviations from some hypothetical copyright law that reflects the considerations that we already know are important. Moreover, there may be alternative, sometimes complementary explanations for these puzzles. Douglas Lichtman has recently argued, for example, that copyright doctrine seeks to save the courts from decisions of evidentiary complexity.[75] This helps

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[72] For a historical analysis of copyright lobbying, see Thomas P. Olson, *The Iron Law of Consensus: Congressional Responses to Proposed Copyright Reforms Since the 1909 Act*, 36 J. COPR. SOC'Y 109, 127 (1989).

[73] *See, e.g.*, *infra* note 170.

[74] *See, e.g.*, John Borland, *RIAA Boosts Anti-Napster Lobbying Efforts*, CNET News.com, Feb. 27, 2001, *available at* http://news.com/2100-1023-253215.html?legacy=cnet (reporting on the Recording Industry Association of America's lobbying efforts).

[75] *See* Douglas Lichtman, *Copyright as a Rule of Evidence*, 2003 DUKE L.J. (forthcoming) (manuscript on file with author).

to explain, among other things, copyright law's requirement of creativity,[76] which rent dissipation also helps to explain. My theory is merely that rent dissipation is an important consideration in a copyright law that is also influenced by other considerations and constraints.

Second, copyright law is made by both legislators and judges, and the political economy of the legislative process is absent in the independent judiciary. There are, however, some reasons to think that judges would take into account rent dissipation as well. Copyright doctrine is at least in theory an exercise in statutory interpretation, and so case law roughly may reflect legislative purpose.[77] There may, however, be other reasons not predicated on legislators' preferences that judges pay attention to rent seeking. Perhaps many judges adopt a vaguely natural law approach to copyright,[78] believing that authors generally should have control over development of their work, and this reasoning happens to cohere with rent dissipation theory. More important, some aspects of rent dissipation theory are quite intuitive. Judges may intuitively see works that are largely redundant as less valuable than works that are more distinct. Similarly, judges may recognize that it is inefficient to require authors to duplicate the work of others if ultimately they will be allowed to enter the market anyway. Thus, while judges may not make rent dissipation theory an explicit basis of their decisions, the intuitive pull of rent dissipation concerns may affect the conclusions that they reach. I do not, however, mean to ascribe copyright's accommodation of rent dissipation concerns entirely to motivation, even to subconscious motivation. Some of the compatibility of copyright with rent dissipation concerns may be coincidence, and this contribution to the positive theory of copyright is not primarily a causal one.

1. Copyrightable Subject Matter

Let us start at the beginning, with the requirements for copyrightability. Copyright subsists "in original works of authorship fixed in any tangible medium of expression."[79] I will thus consider case law on the fixation and originality requirements. I will then consider more

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[76] *Id.* (manuscript at 23-29).

[77] Similarly, judges may seek to make decisions that Congress is relatively unlikely to overturn, and of course "good law" consists of judge-made law that has not been overturned. *Cf.* William N. Eskridge, Jr., *Interpreting Legislative Inaction*, 87 MICH. L. REV. 67 (1988) (assessing the extent to which legislative inaction validates past interpretations).

[78] For a more explicit natural law approach to copyright, see Alfred C. Yen, *Restoring the Natural Law: Copyright as Labor and Possession*, 51 OHIO ST. L.J. 517 (1990).

[79] 17 U.S.C. § 102 (2000).

broadly the scope of copyright, in particular the merger doctrine, the copyrightability of facts and compilations, and the availability of copyright protection for elements embodied by that work, such as plot and characters.

a. The Fixation Requirement

The requirement that a work be fixed in a "tangible medium of expression" is usually easily met. As the House Report on the Copyright Act makes clear, "it makes no difference what the form, manner, or medium of fixation may be."[80] The only media that are excluded are those that are not "sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[81] The stuff of law school exam hypotheticals, this would appear to include works like ice sculptures, sand castles, and skywriting.[82] Aside from an interesting question concerning fixation in computer media,[83] the only significant exclusion then is for works that are not fixed at all. For example, extemporaneous speeches that are not simultaneously recorded by the speaker, even if there is a simultaneous recording by a third party,[84] are not fixed.

Rent dissipation theory provides a straightforward explanation. The failure of an author to fix a work suggests that the author does not intend to commercialize the work, and reproduction or exploitation of the work by another is thus unlikely to lead to any redundancy in commercialization efforts. This is true both for exotic media like ice sculptures, where the failure to photograph or otherwise fix one's creation suggests lack of an intent to commercialize it, and for speeches and the like. To be sure, redundancy remains a possibility if more than one third party seeks to take commercial advantage of an unfixed work, for example if more than one radio station decides to broadcast a football game when the organizers of the game themselves did not seek to arrange for any recording of the game.[85] But the assumption that authors will seek

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[80] H.R. Rep. No. 94-1476, 94th Cong. 2d Sess. 52 (1976).

[81] 17 U.S.C. § 101.

[82] Such works may be protected by state law. The House Report specifies, "Under the bill, the concept of fixation ... represents the dividing line between common law and statutory protection." H.R. Rep. No. 94-1476, at 52.

[83] *See, e.g.*, Bradley J. Nicholson, *The Ghost in the Machine:* MAI Systems Corp. v. Peak Computer, Inc. *and the Problem of Copying in RAM*, 10 HIGH TECH. L.J. 147 (1995) (exploring the issue).

[84] Section 101 makes clear that a work is considered "fixed" only if the fixation is "by or under the authority of the author."

[85] The House Report makes clear that a televised football game ordinarily would be considered to be fixed if it were transmitted live and simultaneously recorded. H.R. Rep. No. 94-1476 at 53. The third-party broadcasters would have copyright in their sound recordings, but not in the underlying game. *See* 17 U.S.C. § 114.

to fix their works when they intend to exploit them commercially still holds. Copyright law thus permits unauthorized dissemination, and provides for the attendant benefits for both the distributors and consumers of the work, in the circumstances that seem unlikely to produce competition that would dissipate producer rents.[86]

b. The Originality Requirement

The originality requirement, sometimes called the creativity requirement,[87] imposes a low but nontrivial threshold to obtain a copyright. An author need not be particularly innovative to receive copyright protection against direct appropriation of the author's work. *Borrow-Giles Lithographic Co. v. Sarony*[88] offers a classic illustration. This case confronted a technological innovation, that of the photograph. Creation of a photograph, in the ordinary case, does not ordinarily require as much creativity or skill as creation of a painting, and the defendant accordingly emphasized that "a photograph is the mere mechanical reproduction of the physical features or outlines of some object, animate or inanimate, and involves no originality of thought."[89] The Supreme Court, however, concluded that a photograph of Oscar Wilde had enough creativity to enjoy copyright protection. It emphasized that the photograph emerged from the photographer's "own original mental conception" and reflected decisions about costume and composition.[90] Though the case left open the possibility that only carefully constructed photographs would receive copyright protection, case law since suggests that the photographer need not do much more than point and click to earn an entitlement to a copyright.[91]

Rent dissipation concerns provide a straightforward explanation of the relatively low threshold that an author must overcome to obtain copyright in a writing. If the creation of a

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[86] I do not mean to suggest that rent dissipation is necessarily the best or sole explanation of the fixation requirement. A complementary explanation is that the fixation requirement serves an evidentiary purpose, saving the courts from having to entertain a difficult infringement inquiry when an allegedly copied unfixed work is unavailable. *See* Lichtman, *supra* note 75, at 29-41.

[87] A treatise offers the following distinction: 2 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 2.08[B], at 2-86 ("Where creativity refers to the nature of the work itself, originality refers to the nature of the author's contribution to the work.").

[88] 111 U.S. 53 (1884).

[89] *Id.* at 59.

[90] *Id.* at 54-55.

[91] *See, e.g.*, Ets-Hokin v. Skyy Spirits, Inc., 225 F.3d 1068, 1075-77 (9th Cir. 2000) (emphasizing the low threshold photographs must meet to be deemed sufficiently creative for copyright). The Copyright Office, at least, has made clear that it will issue copyrights on photographs. *See* http://www.copyright.gov/faq.html ¶ 58 (last visited Jan. 20, 2002) (noting that although copyright law does not protect sightings of Elvis, "copyright law will protect your photo (or other depiction) of your sighting of Elvis").

copyrighted work produces a rent, then free appropriability of the work would lead to dissipation of the rent. Copyright protection for a creation of the human mind can do no harm, for if a work is so uninteresting that it produces no rent, whether or not because of lack of originality in the more general usage of the word, then there is no danger of rent dissipation. If a work is valuable, however, concentrating rights to exploit the work in the creator avoids redundancy and wasteful competition. Traditional incentive theories of copyright, of course, also can provide an explanation for the low copyrightability threshold: Copyright is designed to induce production of works, and the lower the threshold, the more works that will be encouraged. The strength of this traditional theory depends on an evaluation of whether it is important for copyright to encourage production of works of relatively low originality.

A caveat to the rent dissipation explanation of the low originality requirement is that there is a competing rent dissipation effect. Just as the availability of a patent may lead to a patent race,[92] so too may the availability of copyright protection lead to excessive resources being expended in the production of copyrighted works. My explanation of the originality doctrine, one might argue, is a "just so" story; if there were a high standard for originality, the argument goes, I would have suggested that the high threshold discouraged redundant production of works of low originality. The argument sounds an important caution, but the message is that we must compare the effects of rent dissipation, just as patent scholars have done.[93] Here, any increased rent seeking is minimal, as individuals producing copyrighted works of very low originality will find little motivation in the right to exclude. Thus, the availability of copyright for relatively unoriginal work probably leads to little redundancy in the production of such work, while limiting redundant exploitation of those few unoriginal works that turn out to have enduring commercial value does reduce rent dissipation.

Rent dissipation theory therefore seems to provide an easy explanation for why many works of relatively low originality still meet the copyright threshold. The greater challenge, and the greater puzzle for scholars, is why some works are deemed insufficiently original for copyright. Consider, for example, *Magic Marketing v. Mailing Services*.[94] The case concerned the copyrightability of letters, forms and envelopes produced by a mass marketing company. For

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[92] *See supra* notes 52-56 and accompanying text.
[93] *See supra* notes 58-63 and accompanying text.
[94] 634 F. Supp. 769 (W.D. Pa. 1986).

example, an envelope included the words "PRIORITY MESSAGE: CONTENTS REQUIRE IMMEDIATE ATTENTION" in large white letters on a black stripe running horizontally across the middle of the envelope.[95] The court held that the words on the envelope did "not exhibit the minimal level of creativity necessary to warrant copyright protection,"[96] and that the addition of a black stripe constituted "nothing more than a distinctive typeface, which is not protected."[97] The case is potentially troubling to an incentive theorist, because even relatively simple designs may reflect substantial investment in consumer research. The problem is of particular concern in comparison to the availability of copyright in photographs, considering that the design of the envelope may demand considerably more investment than the design of a photograph.

It might seem at first that the rent dissipation theory rationale for allowing copyright would apply here. If there are rents to be gained from exploitation of even these relatively generic elements of the marketing materials, awarding a copyright will prevent dissipation of the rents. The problem, however, is that the envelope in this case, and more generally short phrases and slogans, are not marketed to consumers by themselves, but instead are used in marketing other products. The absence of copyright in a work that itself can be marketed may lead multiple entrants to sell the work and dissipate the profit, but granting a copyright in these marketing materials would do little to discourage rent dissipation in exploitation of any product. The total amount of marketing activity, or even of marketing of marketing activity, depends minimally if at all on the copyrightability of such elements in the marketing materials.

The conclusion that there is little rent dissipation from exploitation of the work for copyright to prevent is once again only half the story, however. After all, the fact that there will be minimal rent dissipation whether or not copyright is allowed does not by itself provide a strong argument for or against copyright protection. We must also consider rent dissipation associated with efforts to produce the work in the first place. If there were copyright protection for a work such as this, other marketing companies would likely not be dissuaded from entering the market. They would, however, have to engage in their own research to develop marketing slogans and designs of their own. Such research, even if it resulted in different marketing

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[95] *Id.* at 771.

[96] *Id.* The Court added that the envelope amounted to a "mere listing of ingredients or contents, which the Copyright Office by regulation has determined to be not amenable to copyright. *See id.* at 771-72 (citing 37 C.F.R. § 202.1(a) (1985)).

[97] *Id.* at 772.

designs, would be of little social value. In this case, the most salient form of rent dissipation stems from attempts to "design around" the initial copyright.[98] The costs associated with entry into the market are thus minimized by allowing free appropriability. When entry is likely to occur regardless of whether something is copyrightable, allowing copyright reduces rent dissipation.

c. The Merger Doctrine

The rent dissipation associated with a related phenomenon, which we might term "writing around," can explain copyright law's merger doctrine. The doctrine provides that where there is only one way or a very small number of ways to express an idea, a work expressing that idea will be considered to be uncopyrightable.[99] Consider the case often identified as the source of the doctrine, *Morrissey v. The Procter & Gamble Co.*,[100] in which two companies held similar sales promotional contests, entry into which required contestants to send their social security numbers to the sponsor. The plaintiff alleged that the defendant had infringed its copyright by duplicating Rule 1 of its contest rules with only a few editing changes.[101] The court held that the rule was uncopyrightable, announcing a concern that "to permit copyrighting would mean that a party or parties … could exhaust all possibilities of future use" by obtain rights over all permutations that would cover the underlying idea.

The court's explanation makes little sense, however, for two reasons. First, at least in *Morrissey* itself, and surely in many other contexts in which courts would apply the merger doctrine, there are countless ways of making even pedestrian points. Variations in syntax, word choice, and organization mean that exact identity or even very close similarity of expression almost always indicates copying, at least when more than a very small number of words is at

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[98] *See supra* note 53 (discussing how inventing around a patent can be a form of rent dissipation). Technically, there is no need to design around a copyright, as long as a work is independently created. *See infra* note 103 and accompanying text. In practice, however, concerns about litigation may lead authors to consult past works specifically so that they can ensure that their works are different.

[99] Sampson & Murdock Co. v. Seaver-Radford Co., 140 F. 539, 541 (1st Cir. 1905).

[100] 379 F.2d 675 (1st Cir. 1967).

[101] The defendant's rule, with modifications (other than product name substitution) indicated with italics (additions) and brackets (subtractions), read as follows:

> 1. Entrants should print name, address and Social Security number on a Tide boxtop, or *on* [a] plain paper. Entries must be accompanied by Tide boxtop (*any size*) or by plain paper on which the name 'Tide' is copied from any source. Official rules are *available* on Tide Sweepstakes packages, or *on* leaflets *at* Tide dealers, *or you can send a stamped, self-addressed envelope to: ….*

Id. at 678.

issue.[102] The merger doctrine by its own terms applies only when expression and idea merge, but if the doctrine were really so narrow, the cases to which the doctrine applied would be an empty set. Second, and more significant, in copyright law, independent origination is sufficient to avoid infringement and obtain copyright.[103] No company would be able to monopolize the rules for a contest by writing down all permutations, because a company that wanted to hold a similar contest, even if inspired by the original contest, could set about writing its own rule, and any coincidental similarity to the original would be irrelevant. Thus, if idea and expression truly merged, then the merger doctrine would not even be necessary, so long as the allegedly infringing author expressed the idea independently without engaging in copying.

Rent dissipation theory, however, can account for the merger doctrine. It would needlessly dissipate rents to require competitors to develop alternative formulations of a writing. Such rent dissipation may seem trivial in this context, though they could be greater elsewhere. For example, in *Kern River Gas Transmission Co. v. Coastal Corp.*,[104] the merger doctrine applied to a map illustrating a proposed route for a pipeline. The court noted that copyright law could not give the mapmakers a monopoly in the proposed route,[105] though presumably it would not have been a copyright violation if the alleged infringer had somehow found out about the proposed route by inquiring of those who produced the route. But such investigation is entirely wasteful. A counterargument is that rent dissipation might be avoided even more completely if copyright did grant a monopoly in the contest or the set of maps illustrated the proposed route. The merger doctrine, however, provides the solution that minimizes rent dissipation given the constraint that no such monopoly will be awarded. Once entry is to be allowed, it might as well be allowed at low cost.

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[102] *See* John Shepard Wiley Jr., *Copyright at the School of Patent*, 58 U. CHI. L. REV. 119, 127 (1991) (noting that in *Morrissey*, "the number of equivalent rephrasings probably runs to the hundreds or thousands, but this quibble is at once digressive and fantastically tedious to verify").

[103] Judge Learned Hand famously encapsulated this rule: "[I]f by some magic a man who had never known it were to compose anew Keats's Ode on a Grecian Urn, he would be an 'author,' and if he copyrighted it, others might not copy that poem, though they might of course copy Keats's." Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49, 54 (2d Cir. 1936); *see also* Alfred Bell & Co. v. Catalda Fine Arts, 191 F.2d 99, 102-03 (2d Cir. 1951) ("All that is needed to satisfy both the Constitution and the statute is that the author contributed something more than a merely trivial variation, something recognizably his own.") (internal quotation marks omitted). The independent origination defense fits into rent dissipation theory, for if someone by happenstance infringes a copyright, the rent dissipation has already occurred and was unavoidable, so there is no reason to prevent dissemination of the work.

[104] 899 F.2d 1458 (5th Cir. 1990).

[105] *Id.* at 1464.

d. Facts and Compilations

Perhaps the most controversial issue concerning copyrightable subject matter is the protection of databases. Copyright law has long provided that there is no copyright in facts.[106] Compilations of facts, however, have a stronger claim on protection, as the copyright statute explicitly provides that compilations can be copyrightable subject matter.[107] In *Feist Publications, Inc. v. Rural Telephone Service*,[108] however, the Supreme Court found a telephone white pages directory, consisting of the usual information on names, addresses, and numbers, not to enjoy copyright protection. Factual compilations, the Court ruled, may be copyrighted, but only if they "possess the requisite originality,"[109] a requirement that the Court found to be constitutionally mandated.[110] If the "selection and arrangement are original," the Court held, "these elements of the work are eligible for copyright protection."[111] The white pages, however, "do nothing more than list Rural's subscribers in alphabetical order" and therefore are not even "remotely creative."[112]

A telephone directory might seem to be an appropriate candidate for copyright protection because of the great amount of effort that it may take to compile it.[113] The Supreme Court, however, concluded that the amount of work that it took to prepare a factual compilation was irrelevant, rejecting a "sweat of the brow" theory that would have allowed for protection. Justice O'Connor's explanation of why the Court rejected the "sweat of the brow" theory was undertheorized. The opinion noted that "[s]weat of the brow' courts . . . eschewed the most fundamental axiom of copyright law—that no one may copyright facts or ideas."[114] This conclusion, however, begs the question of why a factual compilation should be treated as a fact. A typical newspaper article, after all, consists of a list of facts, and others may report the

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[106] 2 NIMMER & NIMMER, *supra* note 87, § 2.11[A] ("No one may claim originality as to facts.").
[107] 17 U.S.C. § 103(a) (2000).
[108] 499 U.S. 340 (1991).
[109] *Id.* at 348.
[110] *Id.* at 351.
[111] *Id.* at 349. The Court emphasized, however, that the principle of independent origination holds: "A compiler may settle upon a selection or arrangement that others have used; novelty is not required." *Id.* at 358.
[112] *Id.* at 363.
[113] It may have taken relatively little work to compile the directory at issue, however. "[A]s the sole provider of telephone service in its service area," the Supreme Court explained, "Rural obtains subscriber information quite easily." *Id.* at 343.
[114] *Id.* at 353.

individual facts without infringing but cannot appropriate the whole article. Why shouldn't a similar rule apply to telephone directories?

Rent dissipation theory, however, offers a plausible explanation for rejection of the "sweat of the brow" theory. If it would require considerable sweat for the first telephone book publisher to compile a directory, then it will require considerable sweat for subsequent entrants to compile competing directories.[115] That sweat is rent dissipation. As long as new publishers are permitted to enter the market by redoing all the research of the original publisher, we can at least promote efficiency by allowing new publishers to save themselves the effort and simply copy the phone directory. The reasoning is exactly parallel to the concerns about designing or writing around that we have seen can explain case law on originality generally and on the merger doctrine.[116] Because rent dissipation theory is concerned about minimizing the social loss attributable to the fixed cost of entry, we may be able to reduce that loss by allowing entrants a short cut that dramatically lowers the fixed cost.

Feist and the copyrightability of factual compilations more broadly present close cases, both for copyright doctrine generally and for rent dissipation in particular. Arguably, the Court did not pay sufficient attention to the danger that free appropriability of unoriginal factual compilations may mean that some compilations that are particularly labor-intensive to compile will no longer be compiled as a result of second-mover advantages.[117] My own view is that this is a powerful consideration, but the Court's rejection of it suggests a broader hostility to the incentive rationale for copyright protection. Even from the narrow lens of rent dissipation, the social welfare balance is unclear. Allowing copying of directories conceivably could increase social investments in redundant works, as even more publishers will enter the market and bear a variety of fixed costs. That rent dissipation theory does not unambiguously predict the result in *Feist*, however, should not strike as a count against it. Perhaps the ultimate test of a positive theory of law is in its ability to predict which cases are close and therefore will be controversial. The results of borderline cases are not strong data one way or the other, for in such cases some

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[115] The point seems particularly strong where the amount of sweat that it would take the second publisher is greater than the amount that it would take the first publisher, as in *Feist*. *See supra* note 113. The Court, however, did not seem to place any evidence on the ease with which Rural had compiled its directory.

[116] *See supra* Part I.B.1.b-c.

[117] It is possible, however, that creators of databases may be able to find alternative means of protecting their creations. *See, e.g.*, Paul T. Sheils & Robert Penchina, *What's All the Fuss About* Feist*? The SKy Is Not Falling on the Intellectual Property Rights of Online Database Proprietors*, 17 U. DAYTON L. REV. 563 (1992).

judges presumably would have rendered the opposite decision, the Supreme Court's unanimity in *Feist* notwithstanding.

It is also a useful test of a positive theory to assess whether that theory is consistent with distinctions developed in the case law. One set of post-*Feist* cases has distinguished pre-existing facts from those that reflect some judgment on the part of the original compiler. For example, in *CCC Information Services, Inc. v. Maclean Hunter Market Reports, Inc.*,[118] the Second Circuit found that the numbers in the *Red Book*, which consisted of listings of used car values, were protectable. The court emphasized that the "valuations were neither reports of historical prices nor mechanical derivations of historical prices or other data," but involved some independent professional judgment.[119] A separate set of cases has established that the threshold for a compilation to qualify for copyright is not high. The Second Circuit again, in *Key Publications, Inc. v. Chinatown Today Publishing Enterprises, Inc.*,[120] found copyright protection in a telephone directory intended for use by the Chinese-American community. The selection and arrangement of 9000 listings into 260 categories was sufficient.

That facts are *created* might not seem relevant under *Feist*, especially given the Court's rejection of the sweat-of-the-brow theory.[121] If it is not relevant that it might take time to find a fact, why should it be relevant that it took some effort and independent judgment to create a fact? The distinction might seem purely metaphysical.[122] But from a rent-seeking perspective, the efforts that go into creating facts are less likely to be redundant than the efforts that go into discovering facts. To be sure, the *Red Book* might not add much value to the *Blue Book* that does exactly the same thing but comes up with slightly different numbers. There is *some* value added, however, and competition might lead authors of both books to improve quality. Competition in finding facts, however, is almost entirely redundant. While it is possible that one telephone directory might list someone's number erroneously and the other might then be useful, the requirement of independent judgment that the courts have applied does not merely prevent error

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[118] 44 F.3d 61 (2d Cir. 1994).

[119] *Id.* at 67. A similar case in the Ninth Circuit is *CDN Inc. v. Kapes*, 197 F.3d 1256 (9th Cir. 1999).

[120] 945 F.2d 509 (2d Cir. 1991).

[121] *See* Justin Hughes, Created Facts (2002) (unpublished manuscript, on file with author) (assessing the distinction between created facts and facts that already exist). [chk title and pages]

[122] It also might seem inconsistent with case law not allowing copyright protection even over false facts where they are represented as truthful. *See, e.g.*, Nash v. CBS, 899 F.2d 1537 (7th Cir. 1990) (refusing to find copyright in the purported facts in a book that offered a conspiracy theory on John Dillinger's death, where a television show was based on the theory).

but guarantees separate assessments of the fact (or, more accurately, non-fact) at issue. Copyright law thus requires duplication of effort precisely where such duplication is less likely to be duplicative.

e. The Reaches of Copyright

Perhaps the most surprising aspect of copyright law to the uninitiated is that copyright protection can extend well beyond protection from reproduction. At the beginning of the semester, students in my intellectual property law class generally believe that copyright law prevents them from copying compact disks or taping television shows,[123] but they are skeptical of the possibility that copyright law might extend to protection of characters, plots, or themes. Perhaps those might receive protection under trademark, students who have a rudimentary sense of the distinction might remark,[124] but not under copyright. They may back down when asked whether a minor change to a word or a note is sufficient to escape a charge of copyright infringement, but only a bit. The savviest students, indeed, will suggest that while the law in considering infringement may not forgive an infringer who seeks to evade the law through minor modifications, that does not mean that an author can receive protection for characters, plots, or themes. These intuitions, however, are wrong. Although copyrightability will often be a close legal question, it is at least clear that copyright protection does extend beyond reproduction.

Consider, for example, *Anderson v. Stallone.*[125] The plaintiff wrote a thirty-one page outline for a possible *Rocky IV*. Unfortunately, there was a *Rocky IV*,[126] and it was quite similar to the plaintiff's proposal, but the plaintiff received no compensation. Sylvester Stallone tellingly did not defend on the ground that the plot outlined in the plaintiff's treatment was uncopyrightable. Instead, Stallone slyly argued that the outline was not entitled to copyright because it itself infringed Rocky Balboa and the other characters from the series, thus making it an unauthorized derivative work not entitled to copyright protection.[127] The strategy was

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[123] Of course, it doesn't clearly prevent them from doing either of these things. *See infra* Part I.B.2.d.

[124] Indeed, there is substantial overlap between copyright and a variety of other doctrines in these areas. *See, e.g.*, Jessica Litman, *Mickey Mouse Emeritus: Character Protection and the Public Domain*, 11 U. MIAMI ENT. & SPORTS L. REV. 429 (1994).

[125] 1989 WL 206431 (C.D. Cal. 1989).

[126] *Really don't see* ROCKY IV (United Artists 1985).

[127] 1989 WL 206431, *8. The critics agreed that *Rocky IV* was derivative. *See, e.g.*, http://www.bbc.co.uk/films/2000/06/11/rocky_iv_review.shtml ("[T]his derivative and shallow sequel might weaken the credibility of the series . . . .").

successful, and Stallone won yet another fight. More significant, though, the strategy reflected what had long been clear, that characters are potentially the subject of protection. Judge Learned Hand had recognized this in his famous opinion in *Nichols v. Universal Pictures Corp.*,[128] in which the principal allegation was that the plot infringed.[129] Judge Hand found no infringement, but he did conclude that both plots and characters could infringe, noting for the latter "that the less developed the characters, the less they can be copyrighted."[130]

Protection of characters and plots is difficult to understand on any traditional rationale. If the plot of *Rocky* is a good one, why shouldn't we allow someone else to borrow that plot in another context? If Balboa is an interesting character, then why should not United Artists' competitors be allowed to use the character in their own movies? The best answer based on the incentive theory might be that there will be less investment in developing movies if third parties can steal the plots or characters in subsequent films. This seems specious, though, as any decrease in investment would probably be at least offset by the increase in investment in the derivative movies. It is probably correct that there would be fewer movies made if copyright law permitted free duplication without payment of movie reels and videotapes, but the equation at least seems far more complex in this context. An alternative theory might be that judges protect characters and plots based on some intuitive sense that reusing them amounts to misappropriation, but that begs the question. Why does borrowing of characters and plots trouble some jurists, when other forms of borrowing and allusion do not?

Rent dissipation theory, however, squarely applies: If there is a rent from further development of a particular character or plot line, the law can eliminate dissipation of that rent by providing a property right to that development. It is one thing for Sylvester Stallone to subject us to *Rocky I-V*, and possibly even a dreaded *Rocky VI*,[131] but quite another if several other studios got into the act. Such a development seems unlikely for the *Rocky* series, given that a *Rocky* movie without Stallone would likely not sell well, but Stallone can prevent the use of his image only because of present technological limitations[132] and because the right of publicity may

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[128] 45 F.2d 119 (2d Cir. 1930).

[129] "The only matter common to the two," Judge Hand summarized "is a quarrel between a Jewish and an Irish father, the marriage of their children, the birth of grandchildren and a reconciliation." *Id.* at 122. That was not enough.

[130] *Id.* at 121.

[131] *See* Josh Grossberg, *Stallone Ready for "Rocky" Redux*, EONLINE, Dec. 12, 2002, *at* http://www.eonline.com/redirect;http://ad.doubleclick.net/adi/N2870.eo/B961809;sz=720x300;ord=10533?&seed=orbitz030101.

[132] *But cf.* Rod Easdown, AGE, Jan. 16, 2002, at 1, *available at* 2002 WL 6616628 (describing the use of digital effects to put

similarly prevent rent dissipation.[133] In any event, copyright law can save us from unauthorized sequels to *The Lion King* or unauthorized James Bond movies starring a new actor as Bond, even if trademark law somehow should turn out not to be up to the task. If free competition were allowed, additional studios would produce such movies until zero economic profit were expected, with marginal revenues equal to marginal cost, but the property right ensures production of the number of sequels that maximizes the difference between total revenues and total cost.

Rent dissipation theory, of course, does not apply as far as it might. Sylvester Stallone did not receive a monopoly on boxing movies, and not just because pictures like *On the Waterfront* established the genre before Stallone's involvement. Copyright law will not extend property rights so far that subsequent authors' freedom to express ideas and pursue themes is limited. This is reflected, for example, in the *scènes à faire* doctrine, which allows the use of "stock" literary devices, such as scenes in a beer hall and the singing of the German national anthem in a film about the Nazis.[134] As I will discuss below, case law on parody provides another important limit.[135] Once again, though, my claim is not that rent dissipation is copyright's only concern. To the extent that copyright protection for characters is surprisingly broad, rent dissipation theory provides an explanation.

The challenge for courts is determining whether a finding that a copyright exists would amount to giving a monopoly over a genre, or whether it would only prevent rent dissipating using of the plaintiff's work. Copyright is relatively difficult to obtain for literary characters, because these characters are less developed and thus copyright might amount to a monopoly in a particular type of person.[136] A close case not involving copyright on characters is *Roulo v. Russ*

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dead actors in new movies). *See generally* Joseph J. Beard, *Casting Call at Forest Lawn: The Digital Resurrection of Deceased Entertainers—A 21st Century Challenge for Intellectual Property Law*, 8 HIGH TECH. L.J. 101 (1993) (considering the intellectual property consequences of reanimation).

[133] *See* Mark F. Grady, *A Positive Economic Theory of the Right of Publicity*, 1 UCLA ENT. L. REV. 97 (1994).

[134] Hoehling v. Universal Studios, Inc., 618 F.2d 972, 979 (2d Cir. 1980).

[135] *See infra* Part I.B.2.c.

[136] Paul Goldstein suggests the following test for a literary character: "A literary character can be said to have a distinctive personality, and thus to be protectible, when it has been delineated to the point at which its behavior is relatively predictable so that, when placed in a new plot situation, it will react in ways that are at once distinctive and unsurprising." PAUL GOLDSTEIN, COPYRIGHT § 2.7.2 (1998). The test is not entirely satisfying. Certain stereotyped characters can be scarcely delineated and yet have predictable behavior, while others may be well delineated and yet part of their delineation may be that they are unpredictable. Rent dissipation theory may suggest that the test should simply be whether the presence of the character is a significant factor in why people purchase the book. With this approach, any unauthorized *Rocky* movie would infringe, but a two-minute peripheral scene involving Balboa would not.

Berrie & Co., Inc.[137] The case concerned the copyrightability of a series of greeting cards. The allegedly infringing greeting cards were stylistically similar to the originals, with respect to variables such as size, border, and script typeface, and both sets of cards included sentimental phrases including the use of ellipses,[138] but the phrases themselves were not copied. The court found copyrightability in the arrangement and found infringement as well. The reason this case seems troubling is that it might seem to give a monopoly over the most obvious style for implementing the idea of sentimental phrase greeting cards. The court's emphasis on alternative styles that the infringer might have adopted,[139] however, reveals that the court at least was convinced that it was not granting a monopoly over the genre as a whole.

The questions of copyright law are often fact-specific, and rent dissipation theory cannot provide general answers. Even where inquiries are not fact-specific, cases can be close. Consider, for example, whether software manufacturers should be able to protect user interfaces. The case law is inconsistent,[140] and so is the rent dissipation analysis.[141] On one hand, once one company has developed an effective user interface, allowing other software companies to take it is likely to dissipate the rent from the interface. On the other hand, software companies would still be able to dissipate the rent by offering competing programs with alternative user interfaces, and requiring companies that will enter the market anyway to develop an alternative interface will increase the fixed costs of entry and thus rent dissipation. An additional consideration that might make this case different from others exhibiting a similar pattern[142] is the burden on users having to learn multiple interfaces. It is unclear which way this cuts, however. While the burden is itself a form of redundancy and thus akin to rent dissipation, it also may limit the number of

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[137] 886 F.2d 931 (7th Cir. 1989).

[138] A particularly awful example: "'I want to shout and tell the world how much I love you… but instead I'll just… whisper.'" *Id.* at 935.

[139] *See, e.g.*, *id.* at 940 ("Berrie could have produced a non-infringing card with colored stripes, but Berrie used similar stripes flanking the verse on both the left and right side from top to bottom just as the FS cards did.").

[140] *Compare* Lotus Development Corp. v. Borland Int'l, Inc., 49 F.3d 807 (1st Cir. 1995) (finding that Lotus 1-2-3's menu command hierarchy was not copyrightable and thus not infringed by rival spreadsheet program Quattro Pro), *with* Mitel, Inc. v. Iqtel, 124 F.3d 1366 (10th Cir. 1997) (rejecting *Lotus* and finding command codes protectible). The technical issue in these cases was whether the menu commands were a "method of operation" and thus not copyrightable under 17 U.S.C. § 102(b). The *Mitel* court argued that even if the commands were a method of operation, the expression within them could still be copyrighted. 124 F.3d at 1372.

[141] An additional complicating factor in some cases is the difficulty of separating the user interface from the underlying functionality. *See, e.g.*, Atari, Inc. v. North Am. Philips Consumer Electronics Corp., 672 F.2d 607 (1982) (addressing whether a game similar to Pac Man was infringing).

[142] *See supra* notes 117–120 and accompanying text. In these cases, no copyright was found.

firms that will choose to enter if a property right is found.[143] Given this complicated balancing, it is perhaps unsurprising that this remains a controversial area of copyright law.[144]

2. *Use of Copyrighted Works*

a. *Copyright's Exclusive Rights*

The law provides owners a range of exclusive rights in their works, including the right to reproduce the work,[145] to prepare derivative works,[146] to distribute copies,[147] to perform the work public,[148] and to display the work publicly.[149] The broad scope of these rights is consistent with theories of rent dissipation. Most notably, the right to prepare derivative works gives the copyright owner control of a range of products in different media. From the perspective of an incentive theory, the right is justified at best by an uncertain empirical claim. The possibility of adaptation will encourage the creation of some works, as the chance of income from movie rights, for example, may make the difference for some who otherwise would choose not to write.[150] The derivative right, however, prevents unauthorized adaptations and thus discourages production of new works, so the derivative right can be justified by incentive theory only if the first effect dominates the second.[151] The rent dissipation account, by contrast, recognizes that whatever their magnitudes, the first effect is more important than the second, because the works encouraged by the latter are likely to be more redundant.

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[143] A reverse balance exists in assessing the social welfare consequences of network externalities. *See infra* Part III.A.2.c. On one hand, network externalities confer a direct benefit on consumers, but they also may hurt consumers if they discourage new innovations. The twist here is that learning a new interface imposes a cost on consumers, but it may benefit society indirectly by discouraging redundant entry.

[144] For recent assessments of protection for software generally, see Bruce Abramson, *Promoting Innovation in the Software Industry: A First Principles Approach to Intellectual Property Reform*, 8 B.U. J. SCI. & TECH. L. 75, 123 & n.185 (2002); and Robert W. Gomulkiewicz, *Legal Protection for Software: Still a Work in Progress*, 8 TEX. WESLEYAN L. REV. 445, 448 (2002).

[145] 17 U.S.C. § 106(1) (2000).

[146] *Id.* § 106(2).

[147] *Id.* § 106(3).

[148] *Id.* § 106(4). There is a separate right to perform a sound recording publicly "by means of a digital audio transmission." *Id.* § 106(6).

[149] *Id.* § 106(5).

[150] My suspicion is that it does not make much of a difference, however, as those who are likely to benefit from such rights will ordinarily already be well compensated from book sales alone. Whether John Grisham would have produced fewer or more books if he received no compensation for movie rights depends on the balance of income and substitution effects. *Cf. See* Joseph E. Stiglitz & Partha S. Dasgupta, *Differential Taxation, Public Goods, and Economic History*, 38 REV. ECON. STUDS. 151, 159 (1971) (claiming that income tax increases sometimes have lead workers to work more rather than less).

[151] For a careful analysis of derivative rights and incentives, see Paul Goldstein, *Derivative Rights and Derivative Works in Copyright*, 30 J. COPYRIGHT SOC'Y U.S.A. 209 (1983).

The derivative right prevents redundant adaptation. We may still end up with four movie versions of the uncopyrighted *Les Liaisons Dangereuses*,[152] or three television dramatizations of the Amy Fisher saga,[153] but such redundancy would be far more widespread in the absence of the derivative right. While we cannot be sure how many movie versions of *Harry Potter* would exist in the absence of the derivative right,[154] we can be sure that such redundancy would greatly diminish the rent that a single owner can obtain from *Harry Potter* adaptations.[155] Some cases may extend the derivative right too far, to works that are sufficiently transformative that they are unlikely to be redundant.[156] It seems particularly disturbing that the derivative right has threatened an entire genre, appropriation art, which though derivative has a distinct function from the original being copied.[157] An understanding of rent dissipation, however, can help explain the breadth of the right while also suggesting appropriate limits.[158]

What is perhaps more impressive, however, than the breadth of copyright protection is the number of exceptions. A significant exception is the first sale doctrine, which allows the purchaser of a copy or phonorecord of a copyrighted work to sell that work in turn.[159] Sales of used books cut into the profits of the copyright owner, thus adversely affecting incentives to produce copyrighted works (unless the right of resale sufficiently increases the sales price of new books to make up for resale competition).[160] There are, however, no fixed costs associated with

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[152] *See* CRUEL INTENTIONS (Columbia/Tristar Studios 1999); DANGEROUS LIAISONS (Warner Studios 1989); VALMONT (MGM, Inc. 1989); LES LIAISONS DANGEREUSES (Wellspring Media, Inc. 1959).

[153] Linda Saslow, *The Victim Forgives, Others Wish to Forget; Freedom Looms for Amy Fisher, and the Island Groans*, N.Y. TIMES, April 11, 1999, at 14LI.

[154] Even in the absence of § 106(2), the reproduction right might be sufficient to prevent sequels. *See infra* note 292.

[155] The derivative right is not as expansive as it might be. The creator of a new genre, for example, has no right to that genre, largely for free speech reasons. Arguably, however, the derivative right is still too robust to withstand constitutional scrutiny. *See* Rubenfeld, *supra* note 20, at 53-59.

[156] For an evaluation of derivative right cases that reaches conclusions similar to those that rent dissipation theory would suggest, see Michael A. Einhorn, Purple Beasts and Lewd Tunes: Economic Reasoning and Copyright (2002) (unpublished manuscript, *available at* http://papers.ssrn.com/abstract=336720).

[157] *See, e.g.*, Rogers v. Koons, 960 F.2d 301 (2d Cir. 1992) (finding copyright infringement in a sculpture based on a copyrighted photograph of puppies). The rent dissipation approach would emphasize that the probability of redundant exploitation of the puppies was low. For a discussion of copyright issues associated with appropriation art, see WILLIAM M. LANDES, COPYRIGHT, BORROWED IMAGES AND APPROPRIATION ART 15 (Chicago John M. Olin Law & Economics Working Paper No. 113, 2001), *available at* http://www.law.uchicago.edu/Lawecon/WkngPprs_101-25/113.WML.Copyright.pdf.

[158] *See also infra* Part I.B.2.b,c (discussing fair use and parody doctrine, which sometimes may allow what otherwise would be an infringing derivative use).

[159] 17 U.S.C. § 109(a).

[160] *See, e.g.*, Joseph P. Liu, *Owning Digital Copies: Copyright Law and the Incidents of Copy Ownership*, 42 WM. & MARY L. REV. 1245, 1248 (2001) ("[T]he ability to sell a copy of a book to another would appear to reduce the incentives to create works."). Liu suggests that the bundle of copyright rights "are determined in part by certain conventions and understandings that we commonly hold about the ownership of physical property," with the first sale doctrine thus reflecting the intuition that the

producing copies that already exist, so rent dissipation theory accurately predicts that copyright law should be less concerned with this form of unauthorized competition than with others. Indeed a regime that did not allow resale likely would result in redundant production of new works, so the first sale doctrine succeeds in reducing rent dissipation by the copyright owner. Not surprisingly, perhaps the most difficult cases under the first sale doctrine are those in which it is in tension with the broad derivative right. For example, courts have reached different conclusions in cases in which legal purchasers of books have cut out individual pictures and mounted them, competing with the original copyright owner in a different market.[161] In such a case, the production of the new work does involve the expenditure of fixed costs, and indeed such fixed costs may be higher than those undertaken by the initial copyright owner.

Rent dissipation theory can also help explain what would otherwise seem to be anomalies. Consider the idiosyncratic treatment of sound recordings. The owner of a copyright in a sound recording does not enjoy an exclusive performance right.[162] Moreover, the reproduction right is limited to direct duplication of "the actual sounds fixed in the recording."[163] If Yo Yo Ma performs the Bach Cello Suites and sells a compact disk of the performance, I am free to play the compact disk publicly,[164] and if I had the talent, I also would be free to record my own version of the Bach Cello Suites imitating Ma's interpretive choices.[165] By contrast, if I were to play the movie *Dangerous Liaisons* publicly or to make a new version of *Les Liaisons Dangereuses* that copied the interpretive choices of *Dangerous Liaisons*, I would be infringing the movie's copyright.[166] The statutory scheme seems to find one type of redundancy—multiple performers of the same song, sometimes imitating one another—to be less of a concern than similar redundancies in other media. Presumably this is so because music fans tend to derive more

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owner of a book should have a right to dispose of it. *Id.*

[161] *Compare* Mirage Editions, Inc. v. Albuquerque A.R.T. Co., 856 F.2d 1341 (1988) (finding a violation of the derivative right), *with* Lee v. A.R.T. Co., 125 F.3d 580 (7th Cir. 1997) (finding no violation in a case involving the same defendant).

[162] 17 U.S.C. § 114(a).

[163] *Id.* § 114(b).

[164] The underlying musical work in this example is uncopyrighted. If it were copyrighted, then I would need to obtain permission from the owner of the copyright in the underlying musical work, but I also would be able to obtain a compulsory license in most cases. *See* 17 U.S.C. § 114-115.

[165] *But see* Kent Milunovich, *The Past, Present, and Future of Copyright Protection of Soundalike Recordings*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 517 (1999) (arguing that soundalike recordings may infringe copyrights).

[166] *Dangerous Liaisons* would have to differ sufficiently from *Les Liaisons Dangereuses* to be itself entitled to copyright. *See generally* Gracen v. Bradford Exch., 698 F.2d 300 (7th Cir. 1983) (discussing the originality requirement for copyright in derivative works).

pleasure from hearing covers of a song by different performers than, say, readers would derive from reading the same plot told in a number of different writing styles.[167] The recognition that near redundancy could be less wasteful in one medium than in others allows rent dissipation to explain a phenomenon that alternative theories of copyright, ignoring the possibility that there could ever be a difference in social value based on the distinctiveness of the work, cannot.

Rent dissipation may explain not only the exclusive rights of copyright and exceptions to them, but also may contribute to an explanation for the absence of other imaginable exclusive rights. While a more robust copyright regime would lead to an increase in the number of works produced, the addition of those works to the pool of works might add little if any social value. Consider, for example, the right of libraries, public and private, to lend copyrighted works. Some critics have urged that the copyright owner should hold an exclusive public lending right,[168] and it is easy to see why publishers might favor this. Some who borrow books presumably would have purchased the works if they could not have borrowed them, and libraries thus may reduce publishers' profits.[169] The public lending right likely cannot be justified by incentive factors alone. Presumably, Congress, prodded by lobbying from libraries,[170] concluded that the value to consumers from being able to borrow books from libraries was worth any cost.

The standard economic approach accordingly might emphasize the deadweight loss that would exist if copyright owners had an exclusive public lending right. A public lending right would increase the cost of borrowing, and high prices might prevent access for some who would have obtained some positive value from a work. The standard economic analysis, however, has trouble explaining why this deadweight loss should be sufficient to justify limiting this potential right of the copyright owner, when it is not sufficient to justify other rights of the copyright holder. Perhaps the most appealing explanation is that the public lending right is of lesser economic significance than, for example, the reproduction right. But a comparison of magnitudes

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[167] A student commentator has criticized compulsory licenses for musical works, arguing that cover artists may unduly change the nature of the work. *See* Theresa M. Bevilacqua, Note, *Time to Say Good-Bye to Madonna's American Pie: Why Mechanical Compulsory Licensing Should Be Put to Rest*, 19 CARDOZO ARTS & ENT. L.J. 285 (2001). This Article's analysis, by contrast, suggests that such changes, and more broadly the pleasure that consumers take in listening to the same work expressed in different styles, help explain the compulsory license.

[168] *See, e.g.*, PUBLIC LENDING RIGHT: A MATTER OF JUSTICE (R. Findlater ed., 1971). *But see* Jennifer M. Schneck, Note, *Closing the Book on the Public Lending Right*, 63 N.Y.U. L. REV. 878 (1988) (arguing against enactment of a public lending right).

[169] Libraries, however, sometimes must pay higher prices than private parties for academic journals. *See* Owen R. Phillips & Lori J. Phillips, *The Market for Academic Journals*, 34 APPLIED ECONOMICS 1 (Jan. 10, 2002), *available at* 2002 WL 13808678.

[170] The American Library Association has been active in supporting exceptions to copyright. *See, e.g.*, http://www.ala.org/washoff/copyright.html (last visited Dec. 16, 2002) (describing the ALA's copyright agenda).

is not strictly relevant under a cost-benefit analysis, because the deadweight loss associated with a public lending right is likely to be smaller than that associated with the reproduction right as well. Copyright seems puzzlingly more willing to provide copyright owners rights when those rights will have dramatic effects on incentives to produce works, even if the costs of those rights are dramatically higher too.

Rent dissipation theory, however, helps crystallize an intuition about why copyright should grant the big rights but give consumers a break on the little ones: Marginal works, those that are on the borderline of being produced or not produced, are of less economic importance than inframarginal works that will be produced under a wide range of copyright regimes. An economic methodology that considers production of new works always to be a benefit will count even marginal works, because they benefit consumers, as advancing social welfare (though perhaps not as beneficial on average as the most profitable works). Rent dissipation theory, however, recognizes that the more works that exist, the more the marginal work is likely to be similar to existing works, and thus the lower the value of the marginal work. Thus, once copyright law has already incentivized production of a large number of works with a set of exclusive rights to copyright holders, additional rights that might result in the production of a few more works are less attractive. This is so even if the ratio of works incentivized to increased deadweight loss is the same as for the more comprehensive rights.

This argument from rent dissipation theory, unlike some of the previous applications that honed in on one particular nuance of copyright law, is admittedly more of a complement to existing economic theories recognizing tradeoffs in copyright policy generally than a substitute for those theories. By conceptualizing an entire market for copyrighted works (such as the market for music) as offering a rent that additional entrants might dissipate, rent dissipation theory suggests that the marginal work might be of little or even negative social value, an intuition that I will develop more formally through discussion of the product differentiation literature.[171] A policy that would bring about a relatively small decrease in the number of copyrighted works, along with some benefit, thus becomes far more attractive once rent dissipation is considered. The traditional economic approach to copyright suggests that an exclusive public lending right would have a benefit (incentivizing new works) and a cost

[171] *See infra* Part II.

(increased deadweight loss associated with those who cannot afford to purchase the works). Rent dissipation theory indicates that the benefit is smaller than it otherwise might appear, or perhaps even a cost.[172] It would thus predict that copyright law would allow for broad use of copyrighted works, even where such use might reduce the total number of works produced. This is not a bold prediction, but we will see that rent dissipation theory can help explain the contours of the most important limitation on copyright, fair use.

b. The Fair Use Test

The fair use defense excuses what would otherwise be infringement. The Copyright Act provides a nonexclusive four factor test to determine whether or not a use is fair.[173] Like most balancing tests, the fair use test reflects a range of policy goals, but scholars have focused on one underlying justification, first identified by Wendy Gordon,[174] as capable of explaining a wide range of fair use decisions: transactions costs.[175] The increasing ease of obtaining copyright permissions, for example through the Copyright Clearance Center[176] or through online transactions, accordingly has led some to suggest that the Internet might facilitate a sharp constriction of fair use doctrine.[177] Some critics have argued that such a conclusion neglects the

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[172] If lending libraries had a large effect on the market for a work, the benefit of the exclusive lending right might still be greater than the cost. This may explain why owners of copyrights in computer software do have a public lending right. *See* 17 U.S.C. § 109(B).

[173] The four factors are:

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
> (2) the nature of the copyrighted work;
> (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
> (4) the effect of the use upon the potential market for or value of the copyrighted work. The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.

17 U.S.C. § 107.

[174] Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the* Betamax *Case and Its Predecessors*, 82 COLUM. L. REV. 1600, 1628-30 (1982). Gordon's article also addresses other market failures that figure in fair use doctrine. *See, e.g.*, *id.* at 1630-31 (discussing externalities).

[175] Landes and Posner emphasize transaction cost in their analysis of fair use. *See* Landes & Posner, *supra* note 71, at 357-61.

[176] *See generally* Shannon S. Wagoner, Note, American Geophysical Union v. Texaco*: Is the Second Circuit Playing Fair with the Fair Use Doctrine?*, 18 HASTINGS COMM. & ENT. L.J. 181, 206-13 (1995) (discussing the Copyright Clearance Center and arguments that the availability of copyrighted materials from it should negate fair use).

[177] Information Infrastructure Task Force, Working Group on Intellectual Property Rights, Intellectual Property and the National Information Infrastructure: The Report of the Working Group on Intellectual Property Rights, http://www.uspto.gov/web/offices/com/doc/ipnii (1995) (last visited Dec. 17, 2002); *see also* Am. Geophysical Union v. Texaco Inc., 60 F.3d 913, 930 (2d Cir. 1994) (considering the relevance of the Copyright Clearance Center). One concern is that content producers may be able to use rights management systems to prevent even uses that courts would count as fair. *See generally* Dan L. Burk & Julie E. Cohen, *Fair Use Infrastructure for Rights Management Systems*, 15 HARV. J.L. & TECH. 41 (2001) (considering the problem and possible legal responses).

low marginal cost of reproducing intellectual property,[178] but rather than enter the debate, I would suggest that rent dissipation theory can provide a complementary understanding of fair use doctrine. Fair use tends to excuse infringement where the otherwise infringing activity is less likely to result in rent dissipation associated with the production of redundant works.

The first fair use factor, "the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes," provides one example of how doctrine has incorporated rent dissipation concerns. The statute's explicit dictate that "nonprofit educational uses" be considered in the first factor, along with the preamble's reference to "news reporting,"[179] suggests that Congress was concerned about whether the use was beneficial to society.[180] As one court noted, however, "publishers of educational textbooks are as profit-motivated as publishers of scandal-mongering tabloid newspapers,"[181] and thus the statute might seem counterproductive from the view of incentive theory, discouraging production of just those works that society might most want to encourage. Implicitly recognizing the problem, the Supreme Court has held that news reporting establishes no presumption of fair use,[182] stressing that the use was "commercial," making the touchstone of commercial speech different for copyright than for First Amendment law.[183] The key, the Court held, is "whether the user stands to profit from exploitation of the copyrighted material without paying the customary price."[184]

In its hesitance to equate the first fair use factor with whether the work was generally beneficial, the Court has produced an analysis consistent with both the incentive theory and rent dissipation theory. If the user profits, such profits are likely coming at the expense of the copyright holder, and this diversion of profits both decreases incentives to produce and dissipates the rent to be earned from the work. The Court's further development of the factor, however,

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[178] *See, e.g.*, Stephen M. McJohn, *Fair Use and Privatization in Copyright*, 35 SAN DIEGO L. REV. 61 (1998).

[179] The preamble specifically lists "purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research" as being examples of fair use. 17 U.S.C. § 107.

[180] This assessment has produced some criticism. *See, e.g.*, PAUL GOLDSTEIN, COPYRIGHT § 10.2.2, at 10:33 (2d ed. 2002) ("On principle, it is far from clear that the commercial-noncommercial distinction should receive any weight at all, except perhaps as a covert subsidy to worthy nonprofit enterprises such as schools and universities…. [T]he distinction has little direct bearing on either the benefits or the losses produced by a defendant's use.").

[181] Salinger v. Random House, Inc., 650 F. Supp. 413, 425 (S.D.N.Y. 1986).

[182] Harper & Row, Publishers, Inc. v. Nation Enterprises, 471 U.S. 539, 562 (1985).

[183] News reporting for profit is not commercial speech under First Amendment doctrine. *See* Va. State Bd. Of Pharmacy v. Va. Citizens Consumer Council, Inc., 425 U.S. 748, 761 (1976) (explaining that the for profit nature of speech does not make it commercial speech).

[184] 471 U.S. at 562.

places more emphasis on the concerns of rent dissipation theory. The Court, adopting a consideration emphasized by Judge Pierre Leval,[185] has identified the "central purpose" of the first factor as determining "whether the new work merely supersede[s] the objects of the original creation, or instead adds something new, with a further purpose or different character, altering the first with new expression, meaning, or message; it asks, in other words, whether and to what extent the new work is transformative."[186] The first factor thus addresses not just whether the user profits, but whether the user's profits are attributable to something new and innovative. The extent to which a work is transformative seems irrelevant to incentive and transactions costs theories, but is central to rent dissipation theory, because a transformative work is less likely to be redundant. The focus on transformation is controversial,[187] because a general exception for transformative works would undo the exclusive right to create derivative works,[188] which I have already suggested reflects fair use concerns.[189] I shall return to this issue in considering one particular application of fair use, parody.[190]

The second fair use factor, the nature of the copyrighted work, reflects similar concerns. "Under this factor," one treatise summarizes, "the more creative a work, the more protection it should be accorded from copying."[191] The logic underlying the second factor is similar to that underlying doctrine on the copyrightability of facts.[192] Limiting fair use by consumers tends to increase the rent available to producers and thus encourages rent-dissipating entry into copyright markets. Copyright law is more likely to restrict fair use and tolerate rent dissipating entry for creative works, which are less likely to be redundant and thus rent dissipating, than for informational works. An additional consideration is that fair use is less likely to be found under this factor when the use would directly displace the intended market for the work. Thus,

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[185] *See* Leval, *supra* note 11.

[186] Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 579 (1994) (internal citations and quotation marks omitted) (alteration in original). The Court added that "the more transformative the new work, the less will be the significance of other factors, like commercialism, that may weigh against a finding of fair use." *Id.* at 579.

[187] *See, e.g.*, GOLDSTEIN, *supra* note 6, § 10.2.2, at 10:43 ("[T]he rule threatens to undermine the balance that Congress struck in section 106(2)'s derivative rights provision . . . ."); LAWRENCE LESSIG, THE FUTURE OF IDEAS 198-99 (2002); Niva Elkin-Koren, *Cyberlaw and Social Change: A Democratic Approach to Copyright Law in Cyberspace*, 14 CARDOZO ARTS & ENT. L.J. 215, 283 (1996).

[188] *See* 17 U.S.C. § 106(2).

[189] *See supra* notes 150-158 and accompanying text.

[190] *See infra* Part I.B.2.c.

[191] NIMMER & NIMMER, *supra* note 87, § 13.05[A][2], at 13-171.

[192] *See supra* Part I.B.2.d.

reproduction for classroom use is less likely to be fair use if the reproduced work is a textbook than a newspaper.[193] Reproduction is more rent dissipating when a product already occupies the market niche that the use represents.

The relevance of rent dissipation concerns to the second factor is also manifest in the treatment of unpublished works. In *Harper & Row, Publishers, Inc. v. Nation Enterprises*,[194] the Supreme Court found that the unpublished status of a manuscript counted against fair use, because "the author's right to control the first public appearance of his undisseminated expression will outweigh a claim of fair use."[195] Scooping a publication is even more rent-dissipating than duplicating an existing publication, because it creates an inefficient race to publish.[196] The Second Circuit, however, extended the Court's analysis to a context in which the rent dissipation concern was absent, because the original author had no intention of publishing the work.[197] This decision led to criticism, both in the Second Circuit[198] and elsewhere.[199] The concern was sufficient that Congress amended § 107,[200] with the intention of undoing the Second Circuit decision.[201] While the Second Circuit's initial action may have reflected concern about privacy rights,[202] the response to it reveals that Congress and critics were much more skeptical of privileging unpublished works where the exploitation of such works would not lead to rent dissipation.

The rent dissipation theory interpretation of the third factor, the amount and substantiality of the portion used, is straightforward. The more of a copyrighted work is taken, the greater the

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[193] *See, e.g.*, Triangle Publications, Inc. v. Knight-Ridder Newspapers, Inc., 626 F.2d 1171 (5th Cir. 1980).

[194] 471 U.S. 539 (1985).

[195] *Id.* at 555.

[196] For a discussion of how rent dissipation may prompt earlier than optimal marketing, see *supra* note 51 and accompanying text.

[197] Salinger v. Random House, Inc., 811 F.2d 90, 95-97 (2d Cir. 1987) (involving a biography of the writer J.D. Salinger excerpting some of his letters).

[198] *See* New Era Publications Int'l v. Henry Holt & Co., 873 F.2d 576, 593 (2d Cir. 1989) (Oakes, C.J, concurring) (following but criticizing *Salinger*); Wright v. Warner Books, Inc., 953 F.2d 731 (2d Cir. 1991) (finding for defendant despite unpublished status of work).

[199] *See, e.g.*, Catherine A. Diviney, Comment, *Guardian of the Public Interest: An Alternative Application of the Fair Use Doctrine in* Salinger v. Random House, Inc., 61 ST. JOHN'S L. REV. 615 (1987).

[200] Congress added the following sentence: "The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of the above factors." 17 U.S.C. § 107 (last sentence).

[201] *See, e.g.*, S. Rep. No. 102-141, 102d Cong., 1st Sess. 5-6 (1991) ("[W]e intend to roll back the virtual per se rule of *Salinger* . . . .").

[202] The opinion itself, however, nowhere mentions the word "privacy" and focuses on the potential market for Salinger's work. *See Salinger*, 811 F.2d at 99.

rent dissipation is likely to be. A book review quoting a few paragraphs of a book, for example, might substitute for the original for a few readers,[203] but the rents accruing to authors of book reviews are generally independent of the rents for writing books. Lengthier summaries of books, by contrast, are more likely to substitute for the originals, and thus demand diversion is a more prominent factor in their production than in the writing of book reviews. Copyright doctrine avoids mechanical rules for assessing the third factor, with the qualitative importance of an excerpted section relevant to the analysis.[204] Even if only a small portion of the work is excerpted, if the portion represents the heart of the work, then the excerpt may dissipate rents from the original. Rent dissipation theory would also predict that the importance of the excerpts to the defendant's work is relevant, since the defendant's work is less likely to be redundant, the less it relies on the plaintiff's. The Supreme Court has noted that "'no plagiarist can excuse the wrong by showing how much of his work he did not pirate,'"[205] recognizing that a single work conceivably could dissipate rents from multiple other works. At the same time, though, the Court has been less willing to find fair use where the plaintiff's work constitutes a large portion of the defendant's.[206]

The fourth factor, the effect upon the plaintiff's potential market, has been called the "most important" of the factors,[207] and it too fits squarely within rent dissipation theory. If there is no effect on the plaintiff's potential market, there is no rent dissipation. A difficulty in applying the test is the potential for circularity; as one treatise explains, "it is a given in every fair use case that plaintiff suffers a loss of a *potential* market if that potential is defined as the theoretical market for licensing the very use at bar."[208] Rent dissipation theory, however,

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[203] A typical book review with limited quotations is one of the paradigmatic examples of fair use. *See, e.g.*, *Harper & Row*, 471 U.S. at 601 ("Had these quotations been used in the context of a critical book review of the Ford work, there is little question that such a use would be fair use within the meaning of § 107 of the Act.") (Brennan, J., dissenting).

[204] *See, e.g.*, *id.* at 565 (approving of the district court's "evaluation of the qualitative nature of the taking").

[205] *Id.* (quoting Sheldon v. Metro-Goldwyn Pictures Corp., 81 F.2d 49, 56 (2d Cir. 1936) (Hand, J.))

[206] In *Nation Enterprises*, despite having just quoted Judge Hand, the Court noted, "Stripped to the verbatim quotes, the direct takings from the unpublished manuscript constitute at least 13% of the infringing article." *Id.* at 565-66. The Court explained that "the fact that a substantial portion of the infringing work was copied verbatim is evidence of the qualitative value of the copied material . . . ." *Id.* Other courts have also looked at the portion of the infringing work that was taken. *See, e.g.*, Wright v. Warner Books Inc., 953 F.2d 731, 739 (2d Cir. 1991) ("[T]his perspective gives an added dimension to the fair use inquiry.").

[207] Robinson v. Random House, Inc., 877 F. Supp. 830, 842 & n.4 (S.D.N.Y. 1995).

[208] NIMMER & NIMMER, *supra* note 87, § 13.05[A][4], at 13-184. This circularity would not exist if the test did not demand assessment of a potential market, but only of an actual market. One possible consequence of the fair use test's focus on a potential market is that uses toward the end of the copyright term may be more likely to be considered fair. *See* Justin Hughes, *Fair Use Across Time*, 50 UCLA L. REV. (forthcoming 2003).

provides an explanation of how this circularity can be overcome. The danger, rent dissipation theory suggests, is not the loss of plaintiff's licensing revenues, but the possibility of redundant exploitation of opportunities by the plaintiff and defendant. As long as the focus is on "traditional, reasonable, or likely to be developed markets,"[209] the formulation of the Second Circuit, courts can largely avoid duplicative efforts, allowing fair use where the plaintiff likely would not have exploited the opportunity in the absence of the defendant's actions and is thus unlikely to exploit the opportunity redundantly given the defendant's actions.

Perhaps the most perplexing aspect of fair use is not any of the factors themselves, but the consequence of a determination that the fair use requirements are met. Fair use is free use. This doctrinal outcome is hardly inevitable.[210] Maureen O'Rourke, for example, has advocated a fair use doctrine in patent law, but she has noted that it might be appropriate for payments to be made for a use.[211] The lack of required payment for copyright fair use is puzzling both from the perspective of a general incentive theory, since payment would improve incentives to produce copyrighted works, and from the perspective of transactions costs. Although transactions costs sometimes might prevent payment, it might seem that payment should be required if requested. At least where the defendant has bothered to bring suit, transactions costs do not seem a significant barrier to payment.[212] From the perspective of rent dissipation theory, however, the absence of payment is not a concern. The concern is not with harm to the plaintiff per se, but the possibility of redundant exploitation. There is thus no inconsistency between a doctrine that focuses on interference with the plaintiff's market, both in the fourth factor and indirectly through the others, yet gives no compensation at all where not quite enough interference is found.

c. Parody

Fair use embraces noneconomic as well as economic values, and nowhere are the former clearer than in parody law. The seminal Supreme Court parody case, *Campbell v. Acuff-Rose*

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[209] Am. Geophysical Union v. Texaco Inc., 60 F.3d 913, 930 (2d Cir. 1994).

[210] For a recent proposal suggesting that a profit allocation suit, similar to compulsory licenses but depending on the profitability of the work, might help save copyright law's constitutionality, see Rubenfeld, *supra* note 20, at 55.

[211] Maureen A. O'Rourke, *Toward a Doctrine of Fair Use in Patent Law*, 100 COLUM. L. REV. 1177, 1209-10 (2000).

[212] Litigation costs, however, could be a concern. *Cf.* Lichtman, *supra* note 75, at 4 (arguing that a desire to avoid difficult evidentiary questions helps provide a positive account of copyright law).

Music, Inc.,[213] involving 2 Live Crew's rap imitation of Roy Orbison's song "Oh, Pretty Woman," makes clear that "when a lethal parody, like a scathing theater review, kills demand for the original, it does not produce a harm cognizable under the Copyright Act."[214] This conclusion, "reflected in the rule that there is no protectible derivative market for criticism,"[215] ascribes noneconomic value to criticism. Though this embrace of free speech considerations thus acts as a constraint on economic factors, *Campbell*'s analysis nonetheless reflects the logic of rent dissipation. Indeed, it was in *Campbell* that the Court emphasized that transformative works are more likely to be found to be fair use under the first factor than nontransformative works.[216] Transformative parodies are less likely to be redundant than nontransformative parodies, and copyright law should thus be less concerned about rent dissipation from parodic derivative works.

What is perhaps most surprising about *Campbell* is not that the Court permitted a parody to engage in some borrowing from the original work,[217] but to the contrary that it refused to allow an evidentiary presumption in favor of parody[218] and remanded to the Sixth Circuit to apply the four-factor test anew.[219] While the Court may well have not been generous enough to parody, rent dissipation theory contributes to an explanation of its lack of generosity. In applying the third factor, the Court acknowledged that "[c]opying does not become excessive in relation to parodic purpose merely because the portion taken was the original's heart," since it is the heart that "most readily conjures up the song for parody."[220] The Court, however, emphasized that no more may be taken than necessary, and remanded to permit consideration of "whether repetition

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[213] 510 U.S. 569 (1994).

[214] *Id.* at 591-92.

[215] *Id.* at 592.

[216] *See supra* notes 186-189 and accompanying text.

[217] *See, e.g.*, 510 U.S. at 580-81 ("Parody needs to mimic an original to make its point, and so has some claim to use the creation of its victim's (or collective victims') imagination . . . .").

[218] The Court explained:

> The Act has no hint of an evidentiary preference for parodists over their victims, and no workable presumption for parody could take account of the fact that parody often shades into satire when society is lampooned through its creative artifacts, or that a work may contain both parodic and nonparodic elements. Accordingly, parody, like any other use, has to work its way through the relevant factors, and be judged case by case, in light of the ends of the copyright law.

Id. at 581.

[219] *Id.* at 594.

[220] *Id.* at 588.

of the bass riff is excessive copying."[221] By encouraging musical parodists to take only as much of the melody as needed to conjure up the original, the Court sought to prevent parodies from substituting for the original. One cannot capture the portion of the market that cares about the tune but not about the lyrics (such as non-English speakers) merely by changing the lyrics and claiming the parody label.[222]

An even more substantial obstacle to the would-be parodist emerges in the Court's analysis of the fourth factor, the effect on the market for the relevant work. The Court could have concluded that where there is a genuine parody that does not take too much of the original work, any effect on the market for the original is more likely attributable to the effect of criticism than to market substitution. Instead, the Court remanded for a determination of the extent to which the parody would interfere with the derivative market for a nonparody rap version of the original, if indeed such a market existed.[223] Even a true parody in a genre other than the original's, the Court's analysis makes clear, could be found to violate the derivative right if it interferes with the original copyright holder's ability to exploit that genre. This caveat is difficult to explain on incentive grounds,[224] and the Court's interpretation of the third and fourth factors together arguably place an excessive burden on socially useful parody,[225] but it does reflect rent dissipation concerns. By dissipating the rents from a potential nonparody derivative, a parody may vitiate fair use, depending of course on the other factors in the fair use test.

d. Copying

Perhaps the most important issue in copyright law, at least from an economic perspective, is the extent to which copying will be permitted. The reproduction right, after all, is the most important stick in the copyright bundle. While theorists have pointed out that sharing of

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[221] *Id.* at 589.

[222] Rent dissipation theory also produces a countervailing consideration. Once a parodist will be able to enter by sufficiently changing the melody, the fixed costs of entry could be lowered by allowing the parodist simply to take the melody. *See supra* text accompanying notes 115-116. Given the relatively small cost of altering the melody, however, it is plausible that the first rent dissipation effect outweighs this one.

[223] 510 U.S. at 593-94.

[224] *See supra* notes 150-151 and accompanying text (noting that a strong derivative right may decrease incentives to produce new works).

[225] A recent case testing the limits of parody involved *The Wind Done Gone*, which retold *Gone with the Wind* from a slave's perspective. *See* Suntrust Bank v. Houghton Mifflin Co., 268 F.3d 1257 (11th Cir. 2001). The novel seems a paradigmatic example of parody, but the work's borrowing of extraneous material made the case close under the *Campbell* approach. *See id.* at 1270 (noting the borrowing, but concluding that the parody could not have criticized the original "without depending heavily upon copyrighted elements of that book").

copyrighted works could benefit producers,[226] copyright owners are always free in any event to allow limited sharing.[227] Content producers complain often that piracy hurts their bottom line,[228] and while they may exaggerate the effect,[229] they presumably would not complain at all if copying benefited them. Copying is a particularly important issue today given technologies that make duplication, in particular digital duplication, ever easier. Lobbying on copying issues is likely to be more one-sided than on other issues, because no content producers is likely to benefit from a regime permitting unauthorized duplication, and we should thus be less confident that rent dissipation theory will predict the law.

Rent dissipation theory complicates the standard neoclassical argument that, at least where transactions costs are low, unauthorized copying should be prohibited.[230] If the number of works in a world with no copying is too high, or even if the social value from creation of marginal works is positive but small, some copying may increase social welfare. The point is the same as that in the context of library lending.[231] Just as the reduction in deadweight loss attributable to lending seems all the more important once rent dissipation theory diminishes what

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[226] *See, e.g.*, Yannis Bakos et al., *Shared Information Goods*, 42 J.L. & ECON. 117, 123 (1999); Stanley M. Besen & Sheila N. Kirby, *Private Copying, Appropriability, and Optimal Copyright Royalties*, 32 J.L. & ECON. 255, 271 (1989).

[227] Some authors explicitly encourage sharing, particularly in collaborative projects like the Linux operating system, where a final product is the result of numerous voluntary contributions. *See* Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 YALE L.J. 369 (2002) (describing "peer production" as an alternative production model); Dennis M. Kennedy, *A Primer on Open Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture*, 20 ST. LOUIS U. PUB. L. REV. 345 (2001) (discussing the "copyleft" license, which allows and encourages sharing). Collaborative projects could either reduce or increase redundancy. If a project were sufficiently successful, it might limit the need for market production; if Linux achieves a sufficient quality standard, then perhaps we won't need Windows, or at least we won't need specialized alternatives to Windows. On the other hand, collaborative projects themselves encourage redundant contributions from authors, which are then filtered into a final project. *See, e.g.*, Benkler, *supra*, at 438, 441.

[228] For recent studies claiming high dollar losses from pirating, see BUSINESS SOFTWARE ALLIANCE, U.S. SOFTWARE STATE PIRACY STUDY (2002), *available at* http://www.bsa.org/piracystudy/press/State_Piracy_Study_2001.pdf (last visited Dec. 27, 2002), which breaks down software piracy rates by region and claims $5.65 billion in U.S. revenue losses; and INTERNATIONAL FEDERATION OF THE PHONOGRAPHIC INDUSTRY, MUSIC PIRACY REPORT (2002), *available at* http://www.ifpi.org (last visited Dec. 27, 2002), which focuses solely on losses from pirated copies.

[229] *See, e.g.*, Mary Hodder, *MacWizard's Analysis of Music Sales Refutes RIAA Arguments on Piracy* (Dec. 23, 2002), *available at* http://journalism.berkeley.edu/projects/biplog/archive/000409.html (last visited Dec. 27, 2002) (challenging the methodology used by the Recording Industry Association of America to estimate losses from online copying). The Business Software Study calculates losses to software companies by multiplying the piracy rate times the wholesale cost of the software. BUSINESS SOFTWARE ALLIANCE, *supra* note 228, at 4. This approach assumes that users of pirated software all would have purchased the software if pirating were impossible. A recent literature has suggested that illegal copying of their own products can benefit producers in the presence of network externalities, which is most likely for computer software. *See, e.g.*, Kathleen Reavis Conner & Richard Rumelt, *Software Piracy: An Analysis of Protection Strategies*, 37 MGMT. SCI. 125 (1991); Moshe Givon et al., *Software Piracy: Estimation of Lost Sales and the Impact on Software Diffusion*, 59 J. MARKETING 29 (1995); Lisa N. Takeyama, *The Welfare Implications of Unauthorized Reproduction of Intellectual Property in the Presence of Demand Network Externalities*, 42 J. INDUS. ECON. 155 (1994). It is also possible that if pirating were impossible, some consumers would not purchase computers at all, and the software industry might lose some sales from such consumers.

[230] *See, e.g.*, Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655 (1994) (arguing that there should generally be property rule protection for intellectual property).

[231] *See supra* notes 168-172 and accompanying text.

otherwise would appear to be negative incentive effects from allowing lending, so too does rent dissipation theory tilt the balance toward the benefit from increasing consumers' access to works. Copying enables consumers to amass large libraries of copyrighted works, particularly audio and audiovisual works, but presumably reduces the number of new works created. Rent dissipation theory suggests that the second effect, at least up to a point, may be a benefit or at least not so large a cost, and therefore the benefits of allowing consumers to build collections loom larger in the social calculus than they otherwise would.[232]

More pervasive copying than currently exists conceivably could increase social welfare. Nonetheless, it is remarkable, given the united front of content producers, how much copying is allowed. The Copyright Act, for example, makes explicit that fair use allows "multiple copies for classroom use."[233] In addition, the Act grants libraries and archives limited rights "to reproduce no more than one copy or phonorecord of a work" and even "to distribute such copy or phonorecord."[234] The Supreme Court in the *Sony* case found that fair use entitled Betamax owners to "time-shift" by taping shows for later viewing.[235] These provisions are all instances in which a concentrated group in effect served as a proxy for the interest of consumers. That these groups were able to obtain exceptions, however, suggests that there is an intuitive appeal to the idea that copying sometimes may increase social welfare even if it decreases producer incentives.

Rent dissipation theory's strongest statutory reflection may be in the Audio Home Recording Act.[236] The Act was a congressionally enacted compromise among record companies, artists, and electronics companies,[237] and it allows importation and sale of digital audio recording

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[232] Record companies have considered subscription plans allowing subscribers access during the subscription to unlimited music within the record companies' libraries. *See, e.g.*, Don Clark, *E-Business: Music Sites Hope to Start Humming*, WALL ST. J., July 16, 2001, at B5. Such plans, however, will not eliminate deadweight loss. Even if all content providers joined together to offer a single plan, many consumers would not be able to afford it. These consumers thus would not be able to obtain music even where the cost of reproduction was less than the value to the consumers of listening to the music.

[233] 17 U.S.C. § 107 (2000). Congress included in its conference report an agreement negotiated by publishers and advocates of an expansive fair use doctrine concerning the scope of the exemption, but these guidelines are only persuasive authority. *See* H.R. Conf. Rep. No. 1733, 94th Cong., 2d Sess. 69 (1976), *reprinted in* 1976 U.S.C.C.A.N. 5810-11.

[234] 17 U.S.C. § 108.

[235] Sony Corp. v. Universal City Studios, 464 U.S. 417 (1984). As Randal Picker argues, *Sony* does not merely allow machines facilitating copying where the benefits exceed the costs. By finding no contributory infringement where a device has substantial noninfringing uses, the Court "removes any reason to redesign to minimize copyright infringement." Randal C. Picker, *Copyright as Entry Policy: The Case of Digital Distribution*, ANTITRUST BULL., July 1, 2002, at 13.

[236] Pub. L. No. 102-563, 106 Stat. 4244 (codified at 17 U.S.C. §§ 1001-1010).

[237] For a brief summary of the history and operation of the AHRA, see David M. Hornik, Recent Development *Combating Software Privacy: The Softlifting Problem*, 7 HARV. J.L. & TECH. 377, 405-09 (1994).

devices.[238] The devices must contain a serial copy management system that prevents the making of copies of copies,[239] and makers of devices are required to pay royalties to artists.[240] The compromise, though criticized by some as reflecting industry control of copyright policy,[241] represented a recognition that Coasean bargaining could maximize the combined rent to be shared among the various industry groups. That the result of this bargaining was to allow home audio copying suggests that this was an efficient result despite any adverse effects on production incentives. This is a remarkable outcome especially considering that consumers were not directly represented. Perhaps even more remarkable is that the statute arguably immunizes all home audio copying,[242] including at least analog copying despite the absence of royalty payments for such copying.[243] The compromise indicates that the portion of consumer surplus that is transferred to producers through higher prices for equipment and thus royalty payments is adequate to compensate the record companies and artists for any increased copying that results.[244] One reason for this may be that entry into the market for sound recordings dissipates much of the rents from sound recordings, and so any decrease in entry might have only a modest effect on the rents that record companies are able to capture.

Copyright law, of course, is not uniformly friendly to copying. The Copyright Act imposes criminal sanctions on those who infringe willfully "for purposes of commercial advantage or private financial gain."[245] Piracy seems particularly likely to be rent-dissipating as pirates can produce perfect copies at lower prices than content producers and thus if legal would

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[238] 17 U.S.C. §§ 1002(a), 1008.

[239] *Id.* § 1002(a). Serial copying is defined as "the duplication in a digital format of a copyrighted musical work or sound recording from a digital reproduction of a digital musical recording." *Id.* § 1001(11).

[240] *Id.* §§ 1003-1007.

[241] Lewis Kurlantzick & Jacqueline E. Pennino, *The Audio Home Recording Act of 1992 and the Formation of Copyright Policy*, 45 J. COPR. SOC'Y 497 (1998).

[242] 17 U.S.C. § 1008 ("No action may be brought under this title alleging infringement of copyright based on … [a digital or analog audio recording device] or medium for making digital musical recordings or analog musical recordings.").

[243] Whether the section immunizes all home copying from liability is somewhat uncertain. The principal complication is that a device may not qualify under the definition of a "digital audio recording device" and yet plainly not be an "analog audio recording device," an undefined term. This is particularly problematic given the Ninth Circuit's decision in *RIAA v. Diamond Multimedia*, 180 F.3d 1072 (9th Cir. 1999), construing "digital audio recording device" narrowly to exclude devices involving computers. The Senate Report on the bill, however, seems to suggest that Congress intended by referring to digital or analog recording to cover *all* home recording. *See* S. Rep. No. 102-294, 51 (1992), *available at* 1992 WL 133198 ("A central purpose of the Audio Home Recording Act of 1991 is conclusively to resolve [the] debate" over "audio recording for noncommercial use."). For a thorough treatment of this issue, see 2 NIMMER & NIMMER, *supra* note 87, § 8B.07[C][4], at 8B-94.

[244] An alternative explanation is that the record companies may have concluded that they were unlikely to win in court anyway and that the statute thus simply reflected an advantageous settlement.

[245] 17 U.S.C. § 506(a)(1).

threaten, more than noncommercial copying, to have drastic effects on the incentive to produce and market new works.[246] More controversially,[247] the Digital Millennium Copyright Act (DMCA) criminalizes the evasion of technological measures employed by copyright owners to limit use of their works.[248] By reducing consumers' ability to copy works, the DMCA seems to ignore consumers' interests in obtaining broad access to works in favor of producers' interests. Even the DMCA, however, reflects in part some of the concerns of rent dissipation theory. In particular, in the absence of a statute, there is a danger that content producers and software companies would engage in a spy-versus-spy rent dissipating contest, with the software companies at each turn seeking to overcome the newest form of copyright protection.[249] Moreover, the effect of the DMCA on copying ultimately will be limited. There is, after all, no practical way to prevent consumers from making analog copies of digital works. What consumers can hear and see they can record, with greater or lesser fidelity depending on the sophistication of their equipment.

The combination of the various permissions and restrictions in practice mean that consumers can copy, but for-profit companies cannot facilitate piracy, and the copies sometimes will be of lower quality,[250] or take longer to obtain, than the originals. At the same time, some consumers will be more likely to copy than others, either because some consumers are concerned about violating the law[251] or because only some consumers own the necessary equipment.[252]

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[246] Pirated copies are cheaper to produce because pirates free-ride on the marketing expenses of the record companies. *See generally* Andrew Burke, *How Effective Are International Copyright Conventions in the Music Industry?*, 20 J. CULTURAL ECON. 51 (1996) (discussing the market for pirated works).

[247] For a balanced assessment of the DMCA, see Orin Kerr, *A Lukewarm Defense of the Digital Millennium Copyright Act*, *in* COPY FIGHTS 163 (Adam Thierer & Clyde Wayne Crews Jr. eds., 2002).

[248] Pub. L. No. 105-304, 112 Stat. 2360 (1998), *codified at* 17 U.S.C. §§ 1201-1205.

[249] It is possible that some such contests will occur despite the DMCA. *See* Ariel Berschadsky, RIAA v. Napster*: A Window onto the Future of Copyright Law in the Internet Age*, 18 JOHN MARSHALL J. COMPUTER & INFO. L. 755, 782-85 (2000) (suggesting that a similar "cat-and-mouse" game will occur between content providers and online file-sharing services).

[250] A recent study has suggested that because of the relatively low quality of bootlegs relative to pirated copies of officially released CDs, the bootlegs do not substitute for officially released products. *See* Naghavi & Schulze, *supra* note 10, at 64-68. If it were possible to make low-quality (or inconsistent-quality) copies of CDs for free, such copying might similarly have only a modest effect on total sales and incentives to produce music.

[251] Such concern may exist because of the uncertain scope of § 1008 or, much more likely, because consumers are simply unaware of the provision. Interestingly, § 1008 is drafted in such a way that even if its scope became clear, some law-abiding consumers might be hesitant to copy. The Act specifies that "[n]o action may be brought" for home copying, providing at least a basis for an argument that home copying is forbidden even if the ban is unenforceable. 17 U.S.C. § 1008 ("No action may be brought under this title alleging infringement of copyright . . . .").

Arguably, a regime in which some consumers break the law (or appear to break the law) and copy while other consumers do not copy is harmful because it might breed a disrespect for law. *See, e.g.*, JANICE NADLER, FLOUTING THE LAW: DOES PERCEIVED INJUSTICE PROVOKE GENERAL NON-COMPLIANCE? (Northwestern Law & Econ Research Paper No. 02-9, Nov. 27, 2002) (reporting an experiment indicating that subjects exposed to laws perceived as unjust through newspaper stories

Perhaps this is in the end a sensible compromise. A regime without a reproduction right at all presumably would cause a great reduction in the number and perhaps quality of sound recordings. Although there would still be some incentive to produce copyrighted works, for example to increase concert ticket sales,[253] it seems at least plausible that there would be far fewer works, perhaps so many fewer that social welfare would decline. A regime in which consumers were unable to copy, even assuming such a regime could be enforced at reasonable cost, could be equally unattractive. Though it would maximize the production of works, rent dissipation theory indicates that the marginal works produced might be of little or negative social value, and consumers forced to pay would be able to own far fewer phonorecords than they otherwise might. The existing regime is somewhere between these two extremes.

Many regimes, however, would be between the extremes, and rent dissipation theory alone cannot offer an unambiguous prediction or prescription as to how many copying issues should be resolved. Napster and post-Napster programs[254] that facilitate file sharing pose a danger to the music recording industry,[255] although there is little evidence that they have led to noticeable decreases in the number of songs produced or on sales.[256] Progress and increased availability of technology, however, conceivably could mean that if Internet file sharing were unambiguously legal, eventually no one would pay for music.[257] On the other hand, these

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reported greater likelihood of engaging in criminal activity than other subjects in what subjects believed to be a second unrelated experiment).

[252] For an economic model of copying that takes into account the possibility of differential costs of obtaining a reproduction, see Ian E. Novos & Michael Waldman, *The Effects of Increased Copyright Protection: An Analytic Approach*, 92 J. POL. ECON. 236 (1984).

[253] One commentator has suggested that copyright's reproduction right may have a *negative* effect on the output of new creations, particularly music, because copyright protection leads to large marketing expenditures. *See* Mark S. Nadel, Questioning the Economic Justification for (and thus Constitutionality of) Copyright Law's Prohibition Against Unauthorized Copying: § 106 (Aug. 18, 2002) (unpublished manuscript, *available at* www.ssrn.com/abstract=322120).

[254] For a discussion of the evolution of these programs, see Lior Jacob Strahilevitz, *Charismatic Code, Social Norms, and the Emergence of Cooperation on the File-Swapping Networks*, VA. L. REV. (forthcoming 2003) (manuscript at 6-14). Strahilevitz observes that file-swapping programs have managed to avoid a "tragedy of the digital commons" in which everyone would have an incentive to download files but no one would have an incentive to upload them. The programs' success in overcoming this obstacle presents the danger that file-sharing might become too attractive, as pro-file swapping norms seem to defeat anti-file swapping norms in norm competition. *Id.* (manuscript at 30-31). Thus, even if Napster-like programs are socially beneficial now once product differentiation concerns are taken into account, they could become so effective that they lead to an excessive decrease in the amount of new music, outweighing any benefits.

[255] *See* Peter J. Alexander, *Peer-to-Peer File Sharing: The Case of the Music Recording Industry*, 20 REV. INDUS. ORG. 151, 160 (2002) (predicting that "major firms in the music recording industry will continue to face significant difficulties in controlling the reproduction and distribution of their products," but noting that "the potential impact of peer-to-peer file sharing on market structure is ambiguous").

[256] *See id.* at 157 ("[I]t is not obvious that sharing music files over the internet has thus far had an adverse effect on sales.").

[257] Much of the success of peer-to-peer file-sharing so far might be attributed to the fact that its beneficiaries are only a segment of consumers. *See* TIM WU, PEER NETWORKS AND OTHER RESPONSES TO REGULATION (University of Virginia School of Law

services allow users to accumulate large libraries of works, and absent a conclusion that users' allegedly[258] illicit benefits should not count in a social welfare calculus,[259] such increased access is welfare-enhancing.[260] The uncertain empirics of technology development thus complicate what would anyway be a complex social welfare calculation.[261] Rent dissipation theory, however, at least strengthens the case of those who would argue for greater copying.

3. *Copyright Remedies*

The winner of a copyright infringement suit ordinarily has a right, in addition to damages, to enjoin distribution of the infringing work.[262] At times the right to an injunction seems

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Working Paper Series No. 02-13, 2002). Wu's analysis indicates that peer-to-peer file-sharing ironically might not have been as successful if it were more universally available, because "the logic of collective action suggests that the ideal strategy for an individual or sub-group under copyright law is to create a system that limits evasion of copyright to an 'in-group,' leaving everyone else to pay for the incentives to create." *Id.* at 59.

[258] The Ninth Circuit in the Napster case did not adequately address the argument that Napster users' usage of the program was protected under the Audio Home Recording Act. The Court rejected the application of § 1008 on the ground that computers are not digital audio recording devices. A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1024-25 (9th Cir. 2001) (following *Recording Indus. Ass'n v. Diamond Multimedia Sys., Inc.*, 180 F.3d 1072, 1078 (9th Cir. 1999)). This argument itself is controversial, relying primarily on legislative history rather than statutory text. *See generally* 2 NIMMER & NIMMER, *supra* note 87, § 8B.02[A][3], at 8B-30 to 8B-32. But the court ignored altogether the separate argument, which has equal support in legislative history, that even if a computer is not a digital audio recording device, Congress intended to immunize all home copying. *See supra* note 251 (explaining this argument); *cf.* Jessica Litman, *War Stories*, 20 CARDOZO ARTS & ENT. L.J. 337, 356-60 (2002) (offering a comprehensive analysis of the § 1008 issue in the Napster case, concluding that the issue was a close one given that Congress did not foresee the possibility of Napster).

Perhaps the court could have defended its ultimate resolution by arguing that the consumers' infringement could provide a basis for a contributory infringement case even if consumers' infringement is immunized. But the Act provides that "[n]o action may be brought … *based on* the noncommercial use by a consumer." 17 U.S.C. § 1008 (emphasis added). The action against Napster was surely *based on* consumers' use. The district court also offered an additional argument against the applicability of § 1008, that plaintiffs' action was not under the Audio Home Recording Act. *See* A&M Records, Inc. v. Napster, Inc., 114 F. Supp. 2d 896, 916 n.19 (N.D. Cal. 2000), *aff'd in part, rev'd in part*, 239 F.3d 1004 (9th Cir. 2001). The Court of Appeals mentioned this argument without assessing it, *see* 239 F.3d at 1024, but it is clearly frivolous, as § 1008 states that "[n]o action may be brought under this title," a reference to the entire Copyright Act. *See* 2 NIMMER & NIMMER, *supra* note 87, § 8B.02[A][1], at 8B-24 (noting that the Audio Home Recording Act comprises but one chapter, namely Chapter 10, of title 17). Probably the strongest argument, not considered by the Court of Appeals in construing § 1008, is that distributing files wholesale is not a "noncommercial" use. The anonymity and volume of the exchange, however, would not seem under ordinary usage of the word "noncommercial" to be relevant, given that no money was involved.

[259] Some scholars have argued that wrongdoers' utility sometimes should receive no weight in social welfare calculations. For example, the scholars argue, any pleasure that a rapist derives from his crime should be irrelevant even if it could be shown that this pleasure were greater than the victim's pain. *See, e.g.*, Steven Shavell, *Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent*, 85 COLUM.L.REV. 1232, 1234 (1985) (disvaluing the offender's private gain in the social welfare analysis). Such arguments, however, do not extend easily to the gains an infringer obtains from copyright infringement, which is a *malum prohibitum* rather than *malum in se* offense.

[260] It is possible that much of the benefit of increased access could be obtained even if there were some fee for use of file-sharing services. Neil Netanel has argued for the legalization of such programs subject to a fee, on the model of the Audio Home Recording Act. *See* NEIL NETANEL, IMPOSE A NONCOMMERCIAL USE LEVY TO ALLOW FREE P2P FILE-SWAPPING AND REMIXING 22 (U. Tex. Public Law Research Paper No. 44, 2002).

[261] An additional consideration is the effort expended by consumers to make copies. *See* Novos & Waldman, *supra* note 252, at 237.

[262] *See* 17 U.S.C. § 502; *see also* Dane S. Ciolino, *Reconsidering Restitution in Copyright*, 48 EMORY L.J. 1, 6-17 (1999) (providing a comprehensive overview of copyright remedies). *But cf.* New Era Publications Int'l v. Henry Holt, Co., 884 F.2d 659, 661 (2d Cir.1989) (noting that an injunction is not an inevitable result of a finding of infringement).

comically inefficient, as when a preliminary injunction was issued against the distribution of the film *Twelve Monkeys* as a result of a single scene that allegedly infringed a copyright in the design of a chair.[263] The existence of property rule rather than liability rule protection for copyright seems inconsistent with an incentive theory of copyright, since allowing a compulsory license at a price simulating a negotiation for all use of copyrighted works would allow for more adaptations of existing works.[264] Transactions costs considerations make property rule protection seem especially unattractive, since negotiation barriers, including the difficulty of locating the copyright owner,[265] may sometimes frustrate a beneficial use of a copyrighted work. Although litigation costs argue against a liability rule regime, where compulsory licenses exist, Congress has found administrative remedies that minimize such costs.[266]

Rent dissipation theory, however, provides strong support for injunctive remedies. The justification is similar to that provided by Kitch in the patent context.[267] A prospecting system prevents a gold rush by providing property rights, and a liability rule alternative is unlikely to produce the optimal amount of entry. Perhaps the compulsory license will be too low, in which case there will still be excessive entry, or too high, in which case the liability rule in effect is a property rule, but there is little reason to expect the government to get it just right. The owner of a patent or copyright, meanwhile, has an incentive to maximize profits, the difference between revenues and expenses. In theory, a suitably set fee for a compulsory license could achieve such maximization, but the intellectual property right owner is better situated than the government to determine how much the right should be exploited. To be sure, property rules have problems associated with abuse of monopoly power, and assorted copyright law provisions seek to prevent a copyright owner from leveraging the monopoly right.[268] Rent dissipation theory, however, helps explain why compulsory licenses are not more widespread.[269]

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[263] *See* Woods v. Universal City Studios, Inc., 920 F. Supp. 62 (S.D.N.Y. 1996).

[264] For a defense of property rule protection, see Merges, *supra* note 230.

[265] *See* William M. Landes & Richard A. Posner, Indefinitely Renewable Copyright (Aug. 1, 2002) (unpublished manuscript, on file with author) (manuscript at 5-7) (discussing tracing costs)

[266] *See, e.g.* 17 U.S.C. §§ 115-116 (providing detailed compulsory licensing schemes).

[267] *See* Kitch, *supra* note 45.

[268] For a discussion of these provisions, see Jason S. Rooks, Note, *Constitutionality of Judicially-Imposed Compulsory Licenses in Copyright Infringement Cases*, 3 J. INTELL. PROP. L. 255, 266-68 (1995). A proposal to enact a new compulsory license provision along these lines is Alan M. Fisch, *Compulsory Licensing of Blacked-Out Professional Team Sporting Event Telecasts (PTSETS): Using Copyright Law to Mitigate Monopolistic Behavior*, 32 HARV. J. ON LEGIS. 403 (1995).

[269] We have already seen a justification for compulsory licenses of musical works. *See supra* text accompanying notes 162-167 (noting that differences in presentation make covers less redundant to consumers than the equivalent in other media would be).

4. *The Copyright Term*

Rent dissipation theory also helps provide an explanation for the long copyright term.[270] The Copyright Term Extension Act of 1998 grant a 20-year term extension both for existing and future works,[271] providing a term of life of the author plus 70 years, or, in the case of works made for hire, a fixed term of the lesser of 95 years from the year of first publication or 120 years from creation.[272] The Supreme Court upheld the Act in *Eldred v. Ashcroft*,[273] though even if the Court had struck it down, the copyright term would still be quite long, both by historical standards[274] and in comparison to the patent term.[275] At first blush, a rent dissipation theory of patent might seem to predict a relatively short term. If many copyrighted works are redundant, then a short term would result in the production of fewer works, and rent dissipation theory suggests that the decrease in incentives to produce new works might be welfare-improving, or at least not as welfare-reducing as would appear in the absence of the theory. This consideration, however, is small, because the present discounted value of revenues from copyright many years in the future are small. A brief by prominent economists in support of the challenge to the term extension calculated that the term extension would produce a 0.33% increase in present value for a new work protected by copyright,[276] and even that is generous, given the economists' assumption that the work produces equal revenues each year.

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[270] A separate puzzle concerning the copyright term is that it is ordinarily based on the life of the author. For a behavioral economics resolution of this puzzle, see Avishalom Tor & Dotan Oliar, *Incentives to Create Under a "Lifetime-Plus-Years" Copyright Duration: Lessons from a Behavioral Economic Analysis for* Eldred v. Ashcroft*,* 36 LOY. L.A. L. REV. 437 (2002). Rent dissipation theory offers a complementary explanation, that a work is less likely to be commercialized far beyond the author's death and that the author's life thus helps identify the period in which use would likely amount to rent dissipation. Because authors often do not own copyrights in their creations, this factor will often not be significant, but it may have been more significant in earlier times.

[271] Pub. L. No. 105-298, 112 Stat. 2827.

[272] 17 U.S.C. § 302(a), (c).

[273] 2003 WL 118221 (Jan. 15, 2003).

[274] For a brief history of the copyright term, see Joseph A. Lavigne, Comment, *For Limited Times? Making Rich Kids Richer via the Copyright Term Extension Act of 1996*, 73 U. DET. MERCY L. REV. 311, 315-21 (1996).

[275] *See* 35 U.S.C. § 154 (2000) (providing for a term of 20 years from the date the patent application was filed). For a criticism of this disparity, see Edward C. Walterscheid, *The Remarkable—and Irrational—Disparity Between the Patent Term and the Copyright Term*, 83 J. PAT. & TRADEMARK OFF. SOC'Y 233 (2001).

[276] Brief of George A. Akerlof, Kenneth J. Arrow, Timothy F. Bresnahan, James M. Buchanan, Ronald H. Coase, Linda R. Cohen, Milton Friedman, Jerry R. Green, Robert W. Hahn, Thomas W. Hazlett, C. Scott Hemphill, Robert E. Litan, Roger G. Noll, Richard Schmalensee, Steven Shavell, Hal R. Varian, and Richard J. Zeckhauser as Amici Curiae in Support of Petitioners at 6, Eldred v. Ashcroft (No. 01-618).

The small increase in present value for new works, the economists recognize, is not dispositive, as any costs in the future must be discounted as well.[277] The economists thus target the retroactive term extension, for the costs of that extension will be suffered immediately. Their arguments are straightforward. First, the term extension will produce deadweight loss from monopoly pricing.[278] Second, the extension will reduce innovation by restricting the production of new creative works using existing materials.[279] Third, the property right will lead to costly bargaining and contracting.[280] The economists' conclusion that the first and third arguments imply costs seem accurate, but the second argument is more problematic.[281] The economists seem to assume that production of new works using existing materials necessarily will be socially beneficial,[282] but they do not even acknowledge the industrial organization literature that points out the possibility of excessive entry.[283] Rent dissipation theory, by contrast, identifies unrestricted use of existing materials to produce new ones, i.e. the unauthorized creation of derivative works, as precisely the type of use most likely to be economically inefficient.[284]

The debate on the term extension act has focused intensely on just such a use, as commentators have recognized that Disney has lobbied in favor of the extension in order to protect its copyright on Mickey Mouse.[285] The assumption that Mickey Mouse's entry into the public domain would be welfare-enhancing is perplexing, even absent the analysis in this article. Should Mickey Mouse enter the public domain, there might be reduced monopoly pricing of *Steamboat Willie*, but that benefit seems trivial and is not the focus of the statute's critics.[286] The

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[277] *Id.* at 2 ("With respect to the term extension for new works, the present value of the additional cost is small, just as the present value of incremental benefits is small."). Landes and Posner identify the possibility of an argument that the appropriate discount rate for the costs might be lower than that for the benefits. *See* Landes & Posner, *supra* note 265, at 9 n.20.

[278] *Id.* at 10-11.

[279] *Id.* at 12-13 ("[T]he later innovator must pay for use of the earlier work, this will raise the innovator's cost of making new works, reducing the set of new works produced.").

[280] *Id.* at 13-14.

[281] An additional complication is that the copyright extension may encourage investment in existing works, for example in the colorization of a black-and-white movie. *See* Landes & Posner, *supra* note 265, at 15-22. For an argument that the Copyright Clause is not concerned with this class of public goods problems, see Wendy J. Gordon, *Authors, Publishers, and Public Goods: Trading Gold for Dross*, 36 LOY. L.A. L. REV. 159 (2002).

[282] The assumption is also clear elsewhere in the brief. *See, e.g.*, *id.* at 8-9 ("One might argue that the windfall to authors of existing copyrights has a positive consequence, by providing them with more resources for additional creative projects.").

[283] *See infra* Part II.A.

[284] *See supra* notes 150-155 and accompanying text.

[285] *See, e.g.*, Dinitia Smith, *Immortal Words, Immortal Royalties? Even Mickey Mouse Joins the Fray*, N.Y. TIMES, Mar. 28, 1998 (discussing the relevance of Mickey Mouse to debate over the copyright extension).

[286] A proponent of the term extension makes a similar point. *See* Scott M. Martin, *The Mythology of the Public Domain: Exploring the Myths Behind Attacks on the Duration of Copyright Protection*, 36 LOY. L.A. L. REV. 253, 309-10 (2002) ("Is there

more significant effect would be to allow, subject to trademark limitations,[287] anyone to insert Mickey Mouse into their own films and comic books. Do we really need even more Mickey Mouse movies and comic books than we already have? The term extension critics seem to assume that we do, and perhaps they are right. Parodic uses of Mickey Mouse especially might be enriching,[288] but encouraging such uses seems more relevant to fair use analysis. Rent dissipation theory, however, suggests that the benefits to even devoted fans of Mickey of increased production are likely to be relatively small.[289] These costs, in any event, are surely what animated Disney and are thus what explain the long copyright term.

I do not mean to suggest that the term extension question is an easy one. It is possible that the deadweight costs of monopoly pricing for existing works and the transactions costs of negotiating licenses make the copyright term extension inefficient, and rent dissipation theory cannot prove that increases to consumer welfare from increased production of derivative works will be less than the harm borne by producers. Even if we have enough Mickey Mouse, we may not have enough appropriation art.[290] It seems particularly problematic that the term extension covers even works that are no longer being exploited by their owners, for use of such works is not likely to be rent dissipating. Such works individually are generally of little commercial value, but collectively they might have considerable value, and a regime requiring frequent modest payments to renew copyrights, as suggested recently by Landes and Posner, seems sensible.[291] The rent dissipation analysis also explains only why there is a long copyright term for derivative uses. Although it might be conceptually challenging to separate the reproduction and adaptation rights,[292] rent dissipation theory would lend support to such a project. Rent dissipation theory,

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a huge market anxiously awaiting the royalty-free distribution of a 1928 black-and-white cartoon over the Internet?").

[287] *See id.* at 317 n.184 (asserting that Disney has trademark rights to use of Mickey Mouse for numerous products).

[288] *But see* Walt Disney Productions v. Air Pirates, 581 F.2d 751 (9th Cir. 1978) (involving the use of Mickey Mouse in adult comic books).

[289] It is possible that entry could produce price competition, allowing Mickey fans to obtain products at lower prices and reducing deadweight cost as well. *See infra* text following note 333. Casual empiricism, however, suggests that such effects are likely to be small. All movies rent for the same price at Blockbuster, and comic book producers compete more on quality than on price.

[290] *See supra* note 157 and accompanying text.

[291] *See* Landes & Posner, *supra* note 265. Landes and Posner note that most copyrights become valueless by the time of the first renewal period, as evidenced by the high percentage of copyright holders who fail to pay the small renewal fee. *See id.* at 26. I criticize the argument that they raise in favor of a long copyright term *infra* Part III.A.2.b.

[292] The problem is that the elements of infringement of the derivative right are the same as those for infringement of the reproduction right. Rubenfeld makes the point well:

> Contemporary copyright jurisprudence rarely distinguishes between reproductions and infringing derivative works. Under present law, the copyright owner's "reproduction right" (the exclusive right to reproduce) is viewed as already

however, complicates the analysis of the term extension and helps justify what otherwise seems explainable only as the worst form of political rent seeking.[293] At least, rent dissipation considerations make the optimal term longer than it otherwise would be.

II. COPYRIGHT AND THE ECONOMICS OF PRODUCT DIFFERENTIATION

The earliest and still probably the most famous work in the economics of product differentiation is Hotelling's model of two firms, both selling the same product, deciding where to locate along a straight line.[294] Customers, it is assumed, are uniformly distributed over the line and will purchase from the nearest firm, unless a lower price from a firm located farther away justifies the additional transportation costs. The firms, for example, might be ice cream salesmen along a beach.[295] The model shows that, in the absence of cooperation, if every consumer will buy an ice cream from one of the salesmen, the two salesmen will both cluster at the center of the beach. The result is intuitive. If either salesman is on one side of the beach rather than at the center, he can pick up more customers by moving closer to the center. Once both are at the center, neither has an incentive to move, because doing so would lead some consumers to switch to the competitor. From a social standpoint, the result is suboptimal, as customers' transport costs would be minimized if the firms located at one-quarter and three-quarters the length of the beach.

Although the producers in Hotelling's model are selling a homogeneous product, the model provides a metaphor for product differentiation, with location in physical space analogous to location in product space. For example, two adjacent Indian restaurants deciding how spicy to make their food, given a uniform range of customer preferences, might both sell moderately

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> encompassing much of what would otherwise be covered by the "derivative works right" (the exclusive right to prepare derivative works). Indeed, it has been claimed that the derivative works right, expansive though it might seem, is completely superfluous.

Rubenfeld, *supra* note 20, at 50 (adding that the "claim is an exaggeration, but a surprisingly modest one) (internal quotation marks and citations omitted). If Congress did provide different copyright terms for different rights, however, the courts presumably would develop tests to distinguish them.

[293] *See, e.g.*, Richard Epstein, *All Roads Lead to Rome*, FIN. TIMES, Sept. 4, 2002, *available at* 2002 WL 25245660 (calling the CTEA "a state giveaway of public domain property, pure and simple"). Arguably, the term extension might *reduce* costs associated with political rent-seeking since the enactment of the statute will leave advocates with nothing more to lobby for. *See* Landes & Posner, *supra* note 265, at 10-11. The success of the term extension movement, however, might encourage other rent seekers.

[294] Harold Hotelling, *Stability in Competition*, 39 ECON. J. 41 (1929), *reprinted in* 1 PUBLIC CHOICE THEORY 3 (Charles K. Rowley ed., 1993).

[295] Hotelling suggested that the line "may be Main Street in a town or a transcontinental railroad." *Id.* at 45. The advantage of the beach metaphor is that is makes more plausible the assumption that no consumer will travel off the line to obtain the product.

spicy food, even though consumer tastes would better be satisfied if one restaurant sold mild-medium and the other medium-spicy. The Hotelling metaphor has perhaps had its most significant application in political science, as a way of explaining why the platforms of two competing political parties might both tend toward moderation.[296] The literature offers numerous variations on the basic Hotelling setup,[297] with some variations producing dramatic changes in results. Perhaps most surprisingly in economics, d'Aspremont et al. altered assumptions in such a way that the firms would choose to locate on opposite extremes of the beach, thus achieving maximum differentiation rather than minimum differentiation.[298] Customers, they assumed, faced quadratic transportation costs, so traveling three miles was nine times worse than traveling one mile.[299] The result of maximum differentiation followed from the recognition that firms would locate as far from each other as possible to minimize price competition.[300]

This part's focus is not on whether there is too much or too little differentiation among works that are produced, an issue that was relevant to the rent dissipation theory analysis in Part I, but whether too many or too few works are produced. It is worth noting, however, that the phenomena are analytically connected. Commentators have observed homogeneity in radio station offerings, as listeners with minority viewing tastes may receive no attention while those with more typical tastes can choose from a number of stations seemingly distinguishable only by their call letters.[301] This might occur because a radio station owner would rather have a small piece of a large market rather than all of a small market, ignoring that the listeners will simply be transplanted from other stations. Catering to the otherwise neglected aficionado of ragtime or

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[296] Hotelling himself recognized this application:

> The competition for votes between the Republican and Democratic parties does not lead to a clear drawing of issues, an adoption of two strongly contrasted positions between which the voter may choose. Instead, each party strives to make its platform as much like the other's as possible. Any radical departure would lose many votes, even though it might lead to stronger commendation of the party by some who would vote for it anyhow. Each candidate "pussyfoots," replies ambiguously to questions, refuses to take a definite stand in any controversy for fear of losing votes.

Hotelling, *supra* note 294, at 54. Commentators relatively quickly seized on the political analogy and used it to explain subsequent electoral results. *See, e.g.*, A. Smithies, *Optimum Location in Spatial Competition*, 49 J. POL. ECON. 423, 423 (1941).

[297] For a survey, see Dominique Graitson, *Spatial Competition a la Hotelling: A Selective Survey*, 31 J. INDUS. ECON. 13 (1982).

[298] C. D'Aspremont et al., *On Hotelling's "Stability in Competition,"* 47 ECONOMETRICA 1145 (1979).

[299] *Id.* at 1148.

[300] *Id.* at 1149. Hotelling's model also included the possibility of price competition. Hotelling, *supra* note 294, at 45-47. In the absence of quadratic transportation costs, however, neither producer would have an incentive to move away from the other in order to reduce such competition.

[301] *See, e.g.*, Peter Siegelman & Joel Waldfogel, *Race and Radio: Preference Externalities, Minority Ownership, and the Provision of Programming to Minorities*, *in* ADVANCES IN APPLIED MICROECONOMICS 10 (Michael Baye ed., 2001); *see also* LISA GEORGE & JOEL WALDFOGEL, WHO BENEFITS WHOM IN DAILY NEWSPAPER MARKETS? (NBER Working Paper No. w7944, Oct. 2000) (reaching a similar conclusion with respect to newspaper markets).

gospel music might maximize the number of people who will spend time listening to radio and thus social welfare,[302] but it often will be in the radio station's interest simply to produce yet another top 40 or oldies offering. The number of radio stations, of course, is constrained by the radio frequency spectrum, but the number of many other media is essentially unlimited. The problem then becomes not only excessive clustering by those who have entered the market but also excessive entry into the relevant market. To see why this is, let us consider an alternative to the Hotelling model, and then a variety of extensions and complications.

A. The Salop Model

1. The Setup

The Salop product differentiation model will allow us to see how entry into an industry with differentiated products could be socially excessive.[303] Although the Salop model itself produces excessive entry, my intent is simply to show that excessive entry is possible, not that it is inevitable. This model can then serve as a baseline to compare with other variations that might produce optimal or inadequate entry into a market.[304] In the Salop product differentiation model, firms locate around a circle instead of along a straight line.[305] For example, the firms may be gas stations locating around a lake, though once again the physical lake can serve as a metaphor for product space. Thus, a consumer who incurs a relatively high transport cost driving around the lake to reach a gas station is analogous to one who in product space suffers from not being able to find the cookbook perfectly tailored to the consumer's needs. The cookbook purchaser's "transport costs" thus do not refer to actual transportation at all, but simply to buying a cookbook whose selection of recipes is not quite what the consumer was seeking.

One advantage of the circle metaphor relative to the line is conceptual. Product diversity in many markets is not linear, because products vary along more than one dimension. For example, consider Figure 1, illustrating four cookbooks. Traveling around the circle, the

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[302] Maximizing the number of listeners, however, is not the same as maximizing listeners' welfare. As David Haddock and Daniel Polsby point out, what is relevant is how much listeners value their listening, and it is thus possible that increased diversity of programming choices might maximize listeners at the expense of listeners' welfare. *See* David D. Haddock & Daniel D. Polsby, *Bright Lines, the Federal Communications Commission's Duopoly Rule, and the Diversity of Voices*, 42 FED. COMMUNICATIONS L.J. 331, 342 (1990) ("[T]here can be too much diversity for the public good, if the public good is to be measured by the value that members of the public place on the programming that they are offered.").

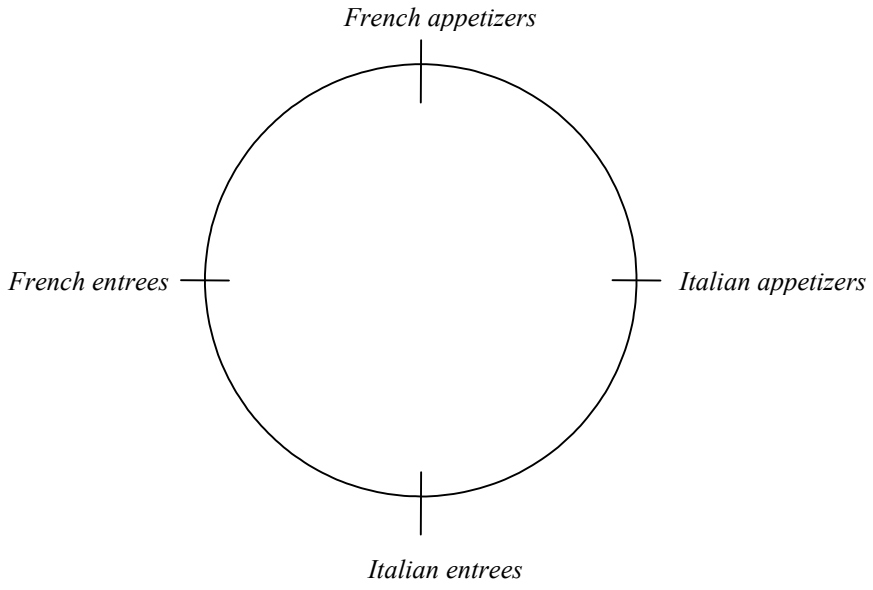
[303] *See* Steven C. Salop, *Monopolistic Competition with Outside Goods*, 10 BELL J. ECON. 141 (1979).

[304] *See infra* Part II.B.

[305] Salop, *supra* note 303, at 144.

cookbooks promise recipes on French appetizers, Italian appetizers, Italian entrees, and French entrees. One could imagine more points on the circle. For example, a cookbook might cover Italian cooking, and it could be placed between Italian appetizers and Italian entrees on the circle, or a cookbook on French and Italian appetizers could be located between the French appetizers and Italian appetizers cookbooks.[306] Regardless of the number of entrants, the circle reflects that there are no extremes; rather, there are simply a variety of products that are more or less like one another. Even the circle is an imperfect reflection of reality, however. The cookbook example is admittedly artificial, and an attempt to place an entire genre of actual works around a circle in a coherent way is likely to fail. A more realistic representation might allow for entry in *n*-dimensional space, an extension that I will undertake through a simulation model in the Appendix.

Figure 1: A simple illustration of the Salop model



The more significant advantage of the circle metaphor is that it is mathematically tractable. This is so relative to both the straight line and to *n*-dimensional space. If products are spaced equidistantly around the circle, then from an economic standpoint, each producer is in the

[306] Of course, there may not be books in the real world with precisely that focus, but there certainly are books that are close. *See, e.g.*, DIANA SHAW, SWEET BASIL, GARLIC, TOMATOES, AND CHIVES: THE VEGETABLE DISHES OF TUSCANY AND PROVENCE (1992).

same position as every other and thus makes the same decisions. The circle metaphor thus facilitates the calculation of a symmetric Nash equilibrium—that is, an equilibrium in which each producer reaches the same pricing decision and from which each producer has no incentive to deviate.[307] In Salop's model, all firms enter at once, spacing themselves evenly around the circle. This assumes away the question of whether there is too much or too little differentiation for a given number of firms, permitting a focus on the number of firms that enter rather than where they locate.[308] Consumers are uniformly distributed around the circle, and we will assume, in a temporary simplification of Salop's model,[309] that each will make a purchase from exactly one firm, taking into account their transportation costs to the firms. Transportation costs increase linearly with distance, so traveling a distance of two is twice as bad as traveling a unit distance.

After the firms enter, each will set a price that maximizes its future profits.[310] Collusion among firms is assumed to be impossible. Each firm must pay a fixed cost to enter, but because this fixed cost is sunk, it does not directly affect a firm's pricing decision. All firms are selling the same homogeneous good,[311] facing the same marginal cost, differing only in spatial location around the circle. Thus, each firm considers that increases in price will provide more revenue from each consumer who still purchases from that firm, but increases in price may lead some consumers to travel to one of the firm's neighbors along the circle. Each firm takes into account the expected pricing decisions of neighboring firms, but each firm will realize that because the circle is uniform, each firm is making exactly the same calculation as every other firm. Thus, each firm ends up calculating the uniform price from which no firm would have an incentive to deviate upwards or downwards. The greater the number of firms, the lower this price will be. Given a uniform price, each consumer ends up traveling to the firm closest to it, even though consumers would be willing to travel to more distant producers if their prices were lower. One of

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[307] For an introduction to the concept of a Nash equilibrium, see DOUGLAS G. BAIRD ET AL., GAME THEORY AND THE LAW 21-23 (1994).

[308] Jean Tirole explains, "[T]he point of Salop's model is not to look at the particular product choice but rather to study the extent of entry . . . . Omitting the choice of location allows us to study the entry issue in a simple and tractable way." JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 283 (2001).

[309] Salop considers the possibility that some consumers will not be served. *See* Salop, *supra* note 303, at 144-45. I will relax this assumption *infra* Part II.B.1.

[310] The model does not consider the possibility of price discrimination based on distance. If such discrimination were possible, then firms might have an incentive to charge less to more distant consumers. Because all firms are identically situated, however, any attempts at price discrimination ultimately would fail in any event, as the firm closest to each consumer would be able to meet any price decrease and still obtain the consumer.

[311] Note that it is the difference in space that corresponds to product differentiation, so sale of a homogeneous product is a useful simplification.

the attractions of the model is thus that it allows for price competition without producing a complex asymmetric equilibrium in which each producer charges a different price.

The analysis so far has assumed some number of firms entering the market, but a central question for our purposes is how many firms will enter. The number of firms that do enter is assumed to be the number that will lead to each firm's earning zero economic profit given the optimal pricing strategy. Zero economic profit corresponds to a normal rate of return on investments of capital and labor.[312] Thus, this assumption reflects that if there were expected to be greater than normal returns given a certain number of entrants, some other firms would decide to enter the market too.[313] The assumption of zero economic profits is central to many models of industrial organization, and the allowance of free entry is what justifies it.[314] Additional entry will, even apart from any price effect, lower existing producers' profits. If it did not cost anything to enter the market, then the only nonprice effect of additional entry would be to reduce transport costs, and entry would necessarily be socially beneficial. The fixed cost of entry, however, dissipates what otherwise would be the economic rent enjoyed by a small number of producers extracting higher prices from consumers. The ultimate social welfare calculus demands a determination of whether the fixed cost investments are sufficient to justify the corresponding reductions in transport costs.

2. *The Results*

Salop's model produces several interesting results. First, the number of competitive firms is equal to the square root of unit transport costs times the number of consumers divided by fixed costs.[315] The formula shows, as one would expect, that increases in transportation costs increase entry, because such increases raise the amount that a firm can charge without losing customers nearest it to another firm. Increases in the number of consumers raise entry too, for the obvious reason that more consumers mean a larger market. Meanwhile, smaller fixed costs increase entry, because they allow more firms can enter before the positive profits are dissipated away. Second,

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[312] A definition of "economic profit" is "[t]he amount by which total revenues exceed total opportunity cost." ROBERT B. EKELUND, JR. & ROBERT D. TOLLISON, ECONOMICS at G-6 (3d ed. 1990).

[313] The analysis ignores the "integer constraint," i.e. that the number of firms that enter must be an integer and not a fractional number. *See, e.g.*, Mankiw & Whinston, *supra* note 14, at 49. A small degree of supernormal returns is possible if an additional entrant would not only eliminate those returns for all firms, but also make total returns for each firm negative.

[314] "Free entry" here means that anyone can enter, not that anyone can enter for free.

[315] Salop, *supra* note 303, at 148.

each firm charges a price above marginal cost, specifically marginal cost plus the square root of the product of unit transport and fixed costs divided by the number of consumers. When transport costs rise, price competition is muted, because each producer needs to worry less about a consumer defecting to another producer. Price rises with increases in fixed costs, meanwhile, because of the assumption of zero economic profit in equilibrium. Increased fixed costs mean that firms must recover more to break even.[316]

The most interesting conclusion of Salop's model for our purposes is that the optimal number of firms from the perspective of the social planner is exactly *half* the number that enter in equilibrium. This result reflects the central intuition of this paper, that new entrants steal business from existing entrants. But the model shows more than this, because the model recognizes that increased entry provides a benefit to consumers by reducing the distance that they must travel to obtain the product, whether in geographical or product space. Thus, what is arresting is that Salop's model shows that even though there are competing effects, one effect tends to dominate the other. Salop himself acknowledges that this finding might not be robust,[317] and we will examine how changing some of Salop's assumptions might change the results.[318] Before we do so, however, let us develop an intuitive grasp of Salop's conclusion that entry is twice the optimum, with the fixed cost associated with the marginal entrant in equilibrium necessarily exceeding any benefits to consumers from that entrant.

The central intuition underlying the Salop model is that in deciding on whether to raise a price above any hypothetical equilibrium price, firms face inframarginal consumers. These are consumers who are so close to the firm that they will continue to purchase from it even if price increases, as long as the difference between the firm's price and that of its neighbor is not too

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[316] What may be less intuitive than the general direction of all these relationships is that the effects are sublinear, as indicated by the square root signs. The number of firms changes only slowly with increases in transport costs or decreases in fixed costs, and prices increase only slowly with increases in transport or fixed costs. For example, if transport costs increase by a factor of nine, the number of firms will increase by only a factor of three, and the difference between price and marginal cost also will increase by only a factor of three. The interrelationship between price and the number of entering firms explains this. The increased entry attributable to a rise in transport costs tends to reduce price, since more firms are crowded around the circle and thus alternative choices are more attractive to consumers. Thus, the increase in price attributable to transport costs will not be as high as it would be in a hypothetical world where entry made the market no more crowded. Because the increase in price is sublinear, the increase in entry is sublinear too. Similarly, because an increase in fixed costs increases price, more firms will enter, so the overall decrease in the number of firms that enter in response to an increase in fixed costs is smaller than it would be if an increase in fixed costs had no effect on price. The small size of this decrease, meanwhile, limits the amount by which the price can rise. In effect, the effects of transport or fixed costs are shared by relatively modest changes in the number of entering firms and the equilibrium price.

[317] *Id.* at 156.

[318] *See infra* Part II.B.

great. Because each firm is making this calculation at the same time, the equilibrium price ends up being relatively high, representing the point that even though an increase in price would cause a firm only to lose marginal consumers, it would still lose money from pricing any higher. Meanwhile, entry benefits both marginal and inframarginal consumers, but by a relatively small amount, especially for inframarginal consumers. Thus, the tendency of distance to mute price competition leads to relatively high prices that in turn lead to entry beyond the point at which the fixed costs of such entry would be justified by consumer benefits.

This explanation is not a proof that excessive entry will result, though Salop does prove the result. Salop derives his results with calculus, but I will offer an informal demonstration of the conclusion that twice as much entry as is socially optimal will occur to crystallize the intuition developed above. Social welfare is the sum of consumer welfare and producer welfare, so to maximize social welfare, we must minimize the sum of transport and fixed costs. We can disregard both gross consumer surplus and price, because of the assumption that every consumer will purchase one unit of the product regardless of the price. That is, we do not care how high prices are, because high prices simply affect the relative welfare of consumers and producers and by assumption do not result in any deadweight loss. Regardless of what the number of firms is, any change in the number of firms will have a proportionate effect on fixed costs and transport costs, so that, for example, doubling the number of firms will double fixed costs and halve transport costs. The social optimum therefore must be the number that equalizes fixed costs and transportation costs.[319]

This social optimum is not a stable equilibrium, because firms would earn profits at this point and thus more will enter the market. Firms will earn profits because the profit margin will be more than enough to cover fixed costs. The price margin, i.e. the difference between price and marginal cost, will always be equal to the transportation costs of traveling from one firm to its neighbor, regardless of how many firms have entered the market.[320] No consumer will ever have

[319] If fixed costs and transportation costs are both 1, then doubling either and halving the other would produce a sum of 2½ instead of 2. More generally, $A + B < nA + B/n$, where $n > 1$.

[320] Salop proves this mathematically, but it is also straightforward to recognize by a consideration of firms' incentives. At this price, any firm's attempt to increase or decrease its price will result in lost profits. For example, if from this price a firm raises its price margin by 25% (one-quarter of the transport costs between the firm and each of its neighbors), then it will lose 25% of its customers, as the marginal customer will be three-eighths of the distance between the firm and its neighbor, rather than one-half of that distance. If instead the firm lowers its price by 25%, it will increase its customer base by 25%. Both of these moves are unprofitable.

to travel that far, however. The farthest a consumer will have to travel is half the distance between two firms, and the average consumer will only have to travel one-fourth the distance. Thus, the price margin will always be equal to four times the transportation costs of an average consumer. But at the social optimum, we have seen that fixed costs are equal to transportation costs. The price margin must then be equal to four times fixed costs per consumer as well. Three-quarters of this price margin is thus profit at the social optimum, and firms will enter the market. Doubling the number of firms doubles fixed costs while cutting transport costs and thus the price margin in half. This eliminates profit. Thus, twice as many firms enter in equilibrium as would exist at the socially optimal level.

3. The Counterintuition: Pecuniary Externalities

One response to a claim that business stealing might lead to excessive entry is to point to the distinction between pecuniary and technological externalities. An externality is an effect of an individual's activity on someone else. Externalities can be negative or positive. A classic example of a negative externality is pollution, since the polluter does not bear the full cost of its activity, and an example of a positive externality is vaccination, which benefits not only the patient but also third parties.[321] Externalities also can be pecuniary or technological, with pecuniary externalities being those that operate through markets.[322] More formally, a technological externality is an externality that affects the production function of a firm. For example, if my pollution causes my neighbor's cows to develop more slowly, then my neighbor will be able to produce less beef or milk for a combination of cows and feed, so that is a technological externality. An externality is pecuniary if an effect is felt despite no change in the production function. For example, if I also decide to become a beef producer, then I may hurt my neighbor both by driving up the price of inputs and by driving down the price of outputs, but my neighbor will still be able to make the same amount of beef for any combination of cows and feed.

The externalities associated with the business stealing effect are pecuniary, as entry by one firm affects other firms' ability to sell their products, but not their ability to produce

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[321] *See, e.g.*, EKELUND & TOLLISON, *supra* note 312, at 507-08.

[322] For a useful discussion of the distinction, see Randall G. Holcombe & Russell S. Sobel, *Public Policy Toward Pecuniary Externalities*, 29 PUB. FIN. REV. 304, 306-07 (2001).

products. This may seem puzzling, because economists often emphasize that while technological externalities produce market imperfections, and thus are candidates for governmental intervention, pecuniary externalities do not. Consider, for example, Judge Posner's analysis in his *Economic Analysis of Law*:

> Competition is a rich source of "pecuniary" as distinct from "technological" externalities—that is, of wealth transfers from, as distinct from cost impositions on, unconsenting parties. Suppose A opens a gas station opposite B's gas station and as a result siphons revenues from B. Since B's loss is A's gain, there is no diminution in overall wealth and hence no social cost, even though B is harmed by A's competition and thus incurs a private cost.[323]

The example initially seems superficially similar to the present problem, but the comparison is imperfect. In Posner's example, *A*'s gas station is "opposite" *B*'s, but the central point of Salop's model is that firms are located in different places. Even apart from this difference, however, the example is flawed, at least if it is intended as a general statement that the pecuniary externality does not matter. Indeed, if *A* had to pay a fixed cost to open her gas station, then there would be a diminution in wealth if there were no other effects, because *A* might have invested the money instead on an activity that increases economic activity. Of course, there might well be other effects, such as a decrease in the price of gas closer to the marginal cost, allowing some who value gas at more than its marginal cost to obtain it, and thus avoiding deadweight loss. My point, of course, is not that business stealing is necessarily bad, but merely that it must be taken into account.

Posner, of course, is not the only economist to hint that pecuniary externalities should be ignored,[324] and this conventional wisdom makes sense under conditions of perfect competition.[325] It has long been recognized, however, that pecuniary externalities may lead to suboptimal results when the economy is not in a condition of competitive equilibrium. Tibor Scitovsky, who first developed the distinction between pecuniary and technological externalities fifty years ago,[326]

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[323] POSNER, *supra* note 35, at 7.

[324] Holcombe and Sobel provide another example: "Because efficiency requires individuals to take into account technological externalities but requires that they ignore pecuniary externalities, it follows that property rights should be defined over the ownership of all goods and services in an economy to eliminate technological externalities but should not be defined over the value of goods and services." Holcombe & Sobel, *supra* note 322, at 308-09.

[325] It may also make sense under conditions of imperfect competition, if the solution is worse than the problem. The point was recognized shortly after the distinction between technical and pecuniary externalities emerged. *See, e.g.*, J.A. Stockfisch, *External Economies, Investment, and Foresight*, 63 J. POL. ECON. 446, 448 ("[A] large number of private investors may have among them more knowledge than a central planning agency, whose members can also make errors in judgment.").

[326] Tibor Scitovsky, *Two Concepts of External Economies*, 62 J. POL. ECON. 143 (1954).

recognized that while pecuniary externalities do not require accommodation in competitive equilibrium,[327] they may matter at other times. Scitovsky focused directly on investment, identifying conditions in which investment produces pecuniary externalities that ideally would be internalized.[328] While investment in a market will tend to bring that market closer to equilibrium, Scitovsky noted, it might lead another market away from equilibrium.[329] While the specific example that Scitovsky cites involves a positive externality,[330] the Salop model provides just one example in the industrial organization literature of a negative pecuniary externality that matters. Indeed, pecuniary externalities matter so often in industrial organization and economic development that the phrase is rarely invoked, and when it is invoked it may be to point out that they may well matter in conditions of imperfect competition.[331]

B. Modifying the Salop Model

The Salop model developed in Part I.A involves a series of simplifications. That there might be too many books, movies, or CDs under some set of credible assumptions is itself an important result for legal decisionmakers, for two reasons. First, it at least undermines what may be an intuition that any increase in incentives to produce new works is necessarily beneficial.

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[327] Scitovsky noted, "[E]quilibrium in a perfectly competitive economy is a situation of Paretian optimum, except when there is interdependence among the members of the economy that is direct, in the sense that it does not operate through the market mechanism." *Id.* at 144. In other words, perfect competition maximizes welfare except when there are technological externalities. Later, he explained:

> What is puzzling . . . is that interdependence through the market mechanism should be held to account for the failure of the market economy to lead to the socially desirable optimum, when equilibrium theory comes to the opposite conclusion and *relies* on market interdependence to bring about an optimum situation. Pecuniary external economies clearly have no place in equilibrium theory.

Id. at 146.

[328] *Id.* at 147-51.

[329] *Id.* at 148.

[330] *Id.* at 149 ("We can conclude, therefore, that when an investment gives rise to pecuniary external economies, its private profitability understates its social desirability."). Scitovsky uses the phrase "external economies" to refer to what are now known as positive externalities, and the phrase "external diseconomies" to refer to what are now known as negative externalities.

[331] For example, Paul Krugman writes:

> In competitive general equilibrium, of course, pecuniary externalities have no welfare significance and could not lead to the kind of interesting dynamics we shall derive later. Over the past decade, however, it has become a familiar point that in the presence of imperfect competition and increasing returns, pecuniary externalities matter; for example, if one firm's affect the demand for the product of another firm whose price exceeds marginal cost, this is as much a "real" externality as if one firm's research and development spills over into the general knowledge pool.

Paul Krugman, *Increasing Returns and Economic Geography*, 99 J. POL. ECON. 483, 485 (1991). The results here do not depend on increasing returns, but Krugman's general point that pecuniary externalities may matter in imperfect competition is relevant. For other examples of articles explaining that pecuniary externalities may affect welfare, see Lee Hsien Loong & Richard Zeckhauser, *Pecuniary Externalities Do Matter When Contingent Claims Markets Are Incomplete*, 97 Q. J. ECON. 171 (1982); and Suzanne Scotchmer, *Local Public Goods in an Equilibrium: How Pecuniary Externalities Matter*, 16 REGIONAL SCI. & URBAN ECON. 463 (1986).

Indeterminacy itself is relevant to policy decisions, because if we have no more reason to believe that a change in production incentives is likely to be beneficial than that it is likely to be harmful, we should respond by placing more attention on those effects that we can classify as improving or harming welfare. Second, the question of whether any particular market is beyond or short of the point at which entry decreases welfare is ultimately not the most significant one. That would be the relevant question if the government were considering establishing a board to restrict entry in some market or across the economy.[332] The focus of this Article, however, is on the business stealing effect, which might be relevant even if entry would maximize social welfare, when only the producer and consumers who purchase the product are counted in that calculation. Nonetheless, to develop the fullest understanding of when excessive entry may occur, we should probe the assumptions of the Salop model to test its robustness and to determine where it is most applicable. The conclusion is that some models predict excessive entry while others produce inadequate entry, but all at least are unanimous in acknowledging the existence of the business-stealing effect.

1. Variability in Consumer Surplus

Perhaps the most vulnerable assumption in the presentation of the Salop model above is that each consumer will purchase exactly one unit of the good. This permitted us to ignore gross consumer surplus, thus focusing on the tradeoff between transport costs and entry costs. The assumption may work well for some markets, such as the market for textbooks or casebooks, since few students will dare not purchase an assigned textbook and few professors will dare assign more than one. It is, however, a simplification, especially across the range of markets protected by copyright. I may own a bookshelf full of vegetarian cookbooks, and my decision whether to buy the latest book on lentils may depend in part on its price. Each new cookbook that I purchase thus increases my gross consumer surplus. Moreover, I may be pleased that my cookbooks cover the full range of vegetarian cooking, rather than all focusing on my favorite topic of tofu preparation. At the same time, of course, your cookbook collection might not

[332] In developing the distinction between technological and pecuniary externalities, Scitovsky considers such a possibility, without explicitly endorsing it. *See* Scitovsky, *supra* note 326, at 150 ("Hence the belief that there is need either for centralized investment planning or for some additional communication system to supplement the pricing system as a signaling device."). The primary problem with such a project is that the costs of errors by a central government authority might outweigh the benefits, especially if government officials have motivations other than maximizing social welfare.

contain a single vegetarian cookbook, even though you would be willing to add one if you could find the perfect cookbook at the right price.

This reality check at first seems to force three distinct modifications to the model.[333] First, a single consumer might be located at multiple locations around the circle. I might ideally like an Indian vegetarian cooking book, a vegetarian desserts book, and an encyclopedia of soy products, and for each of these I will have to consider whether the best book available is close enough to what I am looking for. Second, a consumer might be willing to purchase cookbooks only if transport costs are sufficiently low, that is, only if the cookbook is just what the consumer is looking for. Third, a consumer might be willing to purchase a cookbook only if the price is sufficiently low, even if the cookbook is of just the sort that the consumer is seeking. That is, even in the absence of transport costs, the gross consumer surplus of the consumer might be above marginal cost but potentially below what might turn out to be the equilibrium price of a book.

The first of these modifications is relatively harmless. For analytical purposes, a consumer who is located at multiple points on the circle can be treated as multiple consumers, and so the model works just as before. If I wish to purchase a vegetarian desserts cookbook and an Indian vegetarian cookbook for my bookshelf, that is no different economically than if I wanted to purchase the first for myself and the second for my sister, or if I wanted to purchase the first and my sister wished to purchase the second. An objection is that this is not a fully accurate depiction of consumer preferences, because the purchase decisions may be interrelated. A consumer who buys one cookbook might be less willing to buy another. For example, once I buy a vegetarian desserts book, I will be willing to buy an Indian vegetarian cookbook only if it is exactly what I was looking for or only if it is sufficiently inexpensive, because I have spent a portion of my budget that I had allocated to cookbooks.[334] But this objection primarily means only that the second "consumer" associated with a particular individual is one subject to the second and third modifications above.

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[333] Consumers might be heterogeneous in ways beyond those described here. Michael Waterson, for example, considers the possibility of heterogeneity in how easy to serve consumers might be. *See* Michael Waterson, *Product Differentiation and Profitability: An Asymmetric Model*, 39 J. INDUS. ECON. 113 (1990). This type of heterogeneity seems less likely to be significant in markets for copyrighted works than in many other markets.

[334] *Cf.* RICHARD H. THALER, THE WINNER'S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE 107-21 (1992) (describing the tendency of people to make spending decisions based on mental budget accounts).

Let us thus consider the second modification, the possibility of a consumer who decides not to purchase because of high transport costs. Fortunately, this is an alteration to the model that Salop himself considers, one that I omitted earlier to focus on the situation in which a consumer necessarily would purchase from some firm. Salop recognizes that if gross consumer surplus is positive but finite, then above a certain price, a consumer will not purchase from a producer even if price plus transport costs would be higher from all other producers.[335] If we assume that all consumers have the same gross consumer surplus, as Salop does, then there will be some price threshold above which each producer in effect has a monopoly market and thus faces a monopoly demand curve. Salop calculates the price and the number of firms that enter the market, subject once again to a zero profits constraint.[336] The price margin is slightly lower than in the competitive equilibrium, because when gross consumer surplus is low, high prices will lead some consumers not to purchase at all. The number of firms that enter the market thus is slightly lower as well.[337] Nonetheless, the number is still greater than the optimal number of firms.[338]

Salop's model is uninteresting for our purposes with prices in the monopolistic range, because there is no competition between products.[339] As soon as gross consumer surplus is low enough that some consumers are outside both nearby firms' potential monopoly markets, there is

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[335] Salop also considers a third possibility, that a price could be so low that a firm not only would receive all of the consumers between it and its neighbor, but also half the consumers on the other side of its neighbor. Salop labels this price threshold, which produces a discontinuity in the demand curve, the "supercompetitive" price. Salop, *supra* note 303, at 143. The intuition is that if one firm's price is sufficiently low that it will attract customers who are located directly at its neighbor, it will also attract customers who are a bit farther. If it makes sense for someone at the neighbor to travel all the way to the firm, then, given linear transactions costs, once a customer a bit further arrives at the neighbor, it makes sense for that consumer to travel in addition the same distance that a customer initially located at the neighbor traveled. The supercompetitive price, however, is not an equilibrium, as the firm that loses all of its consumers would have an incentive to lower its price.

[336] *Id.* at 147.

[337] Intuitively, the existence of consumers who may or may not purchase a product has two effects on entry. The first is that the reduction in gross consumer surplus for these consumers makes them less likely to make a purchase for a given price, and the corresponding reduction in profits makes entry less attractive. The second is that price will fall because firms will not want to risk the possibility of losing consumers, and so entry again becomes less attractive.

[338] Salop, *supra* note 303, at 152. The number of firms will be in between the monopoly and competitive level if the equilibrium price is such that each producer's region of potential monopoly demand, that is consumers who would purchase from that firm in the absence of other firms, just touches those of its neighbors. *Id.*

[339] The comparison of the number of firms that will enter with monopolistic pricing to the number that optimally would enter is of apples and oranges, because the latter number is the number that optimally would enter given that the entire market is to be served. If the consumers immediately between two firms will not make purchases because gross consumer surplus is less than transport costs, then each firm has monopoly power over all its potential consumers. If this would also be true with one more firm in the market, then each firm would still have monopoly power over all its potential consumers, and there would be no business stealing effect from additional entry. At least until entry is sufficient so that all consumers are covered, any entry up to this point necessarily must be welfare-improving, given the assumption that all firms are equally spaced after entry. Thus, in a model like Salop's but without consumers whose gross consumer surplus is high enough that they plausibly might purchase from either of two firms, entry will be insufficient.

no consumer who would even consider anything other than the most closely located firm. This strange result stems from the assumption that all consumers have the *same* gross consumer surplus. This thus brings us to the third modification suggested above, the possibility of a consumer who will purchase the product only if its price is sufficiently low. Realistically, regardless of whether there are consumers who will not purchase from anyone because of high transport costs, there will also be consumers with low transport costs who simply might decide not to enter the market. By focusing exclusively on transport costs, Salop's model ignores this type of heterogeneity among consumers.

It is straightforward to see how this type of heterogeneity might lead to insufficient entry rather than to excessive entry. Suppose that consumers remain uniformly distributed about the circle, but there is also some random distribution of gross consumer surplus from purchasing a unit of the product around the circle. The number of consumers who will purchase the product will then depend on the price, and some consumers who value the product at above marginal cost will decide not to purchase the product if the price is too high. We have seen that increased entry decreases the equilibrium price level by increasing competition,[340] and it will thus also have the effect of increasing the total number of consumers who purchase the product and thus receive consumer surplus. In contrast to the Salop model, entry thus increases gross consumer welfare. The marginal entrant, however, does not fully take this effect into account, caring only about the fraction of consumers who otherwise would not have purchased a product and now purchase from this firm. The inability of firms to internalize the price effect thus produces a tendency toward underentry.

This tendency toward underentry competes with the business-stealing effect, with an indeterminate consequence for net social welfare.[341] There could be too few firms in the market under this model, however, only because prices are too high from a social perspective. Allowing

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[340] *See supra* text following note 311

[341] The balance would depend on the distribution of potential consumers' gross surplus. If there are many potential consumers who would have purchased the product at a price a bit lower than the equilibrium price, the underentry effect may be greater than the business-stealing effect. There would have to be a fair number of such consumers, however. All of these consumers receive relatively low consumer surplus from the product, because they are low-valuing consumers. Given that the business-stealing effect leads to twice as much entry as is socially optimal in the Salop model, the number of these consumers would have to dwarf the number who would have purchased anyway for the benefits of additional entry to dominate the business-stealing effect. Moreover, even some consumers whose gross consumer surplus is greater than the reduced price may not purchase the product because of transport costs. Consumers whose gross consumer surplus would be below the price even with additional entry, meanwhile, receive no benefit from additional entry.

entry is an expensive means of achieving price reductions. If a price control could be administered efficiently, a greater number of consumers could be served without incurring these fixed costs. While governmental experience suggests that direct price controls are administrative nightmares,[342] there are other means of reducing prices besides price controls and increased entry. This is especially so with markets for copyrighted products, where a broad allowance of copying will reduce both entry and the average price that consumers will pay for the product (counting a price of zero for those who copy).[343]

2. *Additional Modifications*

The possibility of variability in gross consumer surplus is the most obvious and perhaps most significant modification to the Salop model. There are, however, a variety of other modifications that one might attempt to make the model more realistic. This section will briefly consider several such possibilities. My purpose is not to exhaust the range of ways in which reality is more complicated than Salop's model, but rather simply to identify a few significant additional complications that could lead to underentry or optimal entry rather than excessive entry. This discussion is useful, lest readers conclude that overentry is inevitable and that any policies that reduce entry are necessarily welfare-improving. There are two reasons not to focus too much on the modifications that would be needed to perfect Salop's model, however. First, there are radically different industrial organization models also relevant to whether there is inadequate or excessive entry, and I will briefly discuss these to place Salop's model in economic context. Second, as I showed above,[344] policies that reduce entry may improve welfare

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[342] *See, e.g.*, Thomas W. Merrill, *Constitutional Limits on Physician Price Controls*, 21 HASTINGS CONST. L.Q. 635, 637-38 (1994) (discussing the potential administrative challenges associated with health care price controls).

[343] A fanciful example will help make the point. Let us assume that the Salop model accurately reflects the dynamics of a particular market, except that variations in gross consumer surplus make the existing number of firms optimal under rules that allow each firm to charge whatever it wants. Suppose that the government promulgates a new policy that firms can charge only marginal cost to citizens with even-numbered license plates, and suppose further that firms comply costlessly and that consumers do not engage in arbitrage. Recall that price in the Salop model was invariant to the number of consumers. *See* Salop, *supra* note 303, at 148. Thus, firms would charge approximately the same amount as before to citizens with odd-numbered license plates. Social welfare, however, unambiguously rises. While the transfer from producers to consumers who would have made purchases anyway is irrelevant to the social welfare calculation, consumers with gross consumer surplus between the marginal cost and price now would receive the good if they had even-numbered license plates. The social welfare calculation must take into account also the consumers' increase in transport costs and the producers' increase in fixed costs associated with the decreased number of firms, but the Salop model already shows that this tradeoff would increase social welfare. Thus, although reducing entry below the point that was optimal in its absence, the license plate policy both increases the number of consumers who receive a product and achieves a better balance between the fixed cost of entry and consumers' transport costs.

[344] *See supra* Part II.B.1.

even when there is not excessive entry initially. In the next section, I will return to this point, using a simulation analysis to demonstrate it more rigorously.

The Salop model is of products aligned along a circle, but, as I have suggested, product characteristics rarely seem to fit along a circle.[345] A slight improvement, albeit one that would be mathematically intractable, would be for producers to arrange themselves in two-dimensional space, for example in a checkerboard pattern. Even such a modest change could have significant implications for Salop's model. Along the circle, each producer faces competition from only two neighbors, but in two dimensional space, a producer would be competing with at least four neighbors. Conceivably, this increase in competition might lead to a lower price margin, and thus to reduced entry. The problem becomes even greater if producers are evenly arranged in three-dimensional space, and greater still in *n*-dimensional space. Products differ across countless dimensions, as attested by long lists of product characteristics that often accompany advertisements. Copyrighted works exist no less diversity, although their characteristics may not be subject to equally objective measurement and reporting.

An additional significant modification must be relaxation of the assumption that firms are all equally spaced from one another. Relaxation of this assumption makes derivation of a symmetric equilibrium impossible, because firms' pricing decisions would depend on the distance of other firms to them. It may, however, at first appear to be harmless, since some firms would end up charging more, and others less, with no inherent bias that would affect entry. The assumption, however, can have significant consequences when entry is sequential rather than simultaneous. In Salop's model, all firms enter at once, or, alternatively, when a new firm enters, all firms reposition themselves so that equal spacing is retained.[346] In reality, repositioning is likely to be impossible or at least expensive, and the wide product space between existing firms may produce what the literature has termed *entry deterrence*.[347] For example, if the equilibrium number of firms in Salop's model is seven with automatic repositioning, but the model is then adjusted to allow for sequential equilibrium without repositioning, then only four firms will

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[345] *See supra* text following note 306.

[346] Salop, *supra* note 303, at 143-44.

[347] *See, e.g.*, Giacomo Bonanno, *Location Choice, Product Proliferation and Entry Deterrence*, 54 REV. ECON. STUD. 37, 37-38 (1987) (explaining entry deterrence); Jonathan Eaton & Henryk Kierzkowski, *Oligopolistic Competition, Product Variety, Entry Deterrence, and Technology Transfer*, 15 RAND J. ECON. 99 (1984) (constructing a model incorporating entry deterrence).

enter, since a fifth would have to reposition between two of the existing firms and thus capture only one-eighth of the market.

A final variable is quality. The Salop model assumes that products are homogeneous except as to their location in product space, but products may differ in ways that do not affect their position in product space. For example, there could be a range of Indian vegetarian cookbooks, with some that are simply better than others, with the best perhaps featuring color photographs, large numbers of recipes, and endorsements from the best chefs. Consumers are likely to sort themselves according to their gross consumer surplus, with the highest-valuing consumers choosing the products of the highest quality and the highest prices, and lower-valuing consumers choosing products of lower quality and lower prices.[348] This is known in the literature as *vertical price differentiation*, with the differentiation in product space that we have considered so far known as *horizontal price differentiation*.[349] The existence of quality variations might increase entry, by giving each firm less competition, but it also might decrease entry, since firms that otherwise would be able to attract low-valuing consumers may expect to lose these consumers to cheap alternatives. Quality variations also complicate the notion of optimal entry, since there would not be just an optimal number, but also an optimal range of quality among those entrants.[350] It is possible that a reduction in the number of copyrighted works might produce an increase in quality as the author of each work will invest more to capture a larger market,[351] though it is also conceivable that product diversity might spur quality improvements.

Possible extensions to the Salop model in the end may be of less concern than the possibility of wholly different models. Indeed, there are countless theoretical models of product differentiation, with the Salop model belonging to the family of spatial models, sometimes also

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[348] Such sorting may not occur in markets for all copyrighted works. The price of admission to movies, for example, seems invariant to their quality. This is a somewhat mysterious phenomenon: Why don't movie theaters charge less for unpopular movies, just as they charge less for unpopular times? *Cf.* Michael J. Meurer, *Copyright Law and Price Discrimination*, 23 CARDOZO > REV. 55, 67 (2001). Even more puzzingly, why don't theaters charge less for Tuesday night than they do for Saturday night? Perhaps theaters believe that such pricing would offend consumers, or perhaps they worry about the signaling effect, as low prices would might consumers to reconsider movies that they were interested in but turned out to be priced cheaply.

[349] SIMON P. ANDERSON ET AL., DISCRETE CHOICE THEORY OF PRODUCT DIFFERENTIATION 305-07 (1992). The literature also offers models in which all firms offer products of the same quality, considering whether quality is too high or too low. *Id.* at 238-46. For a study illustrating a connection between horizontal and vertical price discrimination, see Helmuth Cremer & Jacques-François Thisse, *Location Models of Horizontal Differentiation: A Special Case of Vertical Differentiation Models*, 39 J. INDUS. ECON. 383 (1991).

[350] For a study describing how lack of consumer information might lead to an increase in the quality of goods, see Michael H. Riordan, *Monopolistic Competition with Experience Goods*, 101 Q.J. ECON. 265 (1986).

[351] *See, e.g.*, Haddock & Polsby, *supra* note 302, at 350 (making such an observation in the radio programming context).

called address models or locational models. Perhaps the most significant alternative to these models are representative consumer models, with a seminal contributions by Joseph Stiglitz and Avinash Dixit.[352] Instead of placing differentiated products in product space, these models take the simpler approach of assuming that consumers have a taste for product diversity. "Thus," Stiglitz and Dixit explain, "a consumer who is indifferent between the quantities (1,0) and (0,1) of two commodities prefers the mix (1/2,1/2) to either extreme."[353] The models conclude that while there could be excess entry, there also could be insufficient entry. The intuition is that the taste for product diversity produces a counterweight to the business stealing effect, with the precise balance uncertain.[354] A producer cannot capture the entirety of the increase in consumer surplus attributable to the additional diversity that the producer's product provides, but also does not take into account that some of its business comes from its competitors.

Representative consumer models thus advance the principal argument of this article, that because of the business stealing effect, one cannot assume that increased incentives to produce copyrighted works are necessarily beneficial. They have, however, been subject to considerable criticism. John Pettengill, in particular, has questioned the general applicability of the assumption that all consumers consume some of each product, and indeed the models seem least applicable to markets for some types of copyrighted works. "Some people do consume a large number of movies," Pettengill points out. "But very few consumers see all the movies available. And seeing half of twenty movies is not preferable to seeing all of ten movies . . . ."[355] Thus, models of product diversification applicable to beer or perhaps even to music might be less appropriate for movies or books. Dixit and Stiglitz reply that their model does not necessarily require individual consumers to consume a bit of each good, as long as variety turns out to be sufficiently desirable for society as a whole.[356] Archibald et al., however, question whether the assumption that Dixit and Stiglitz make will hold in the absence of consumers each consuming

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[352] Avinash K. Dixit & Joseph E. Stiglitz, *Monopolistic Competition and Optimum Product Diversity*, 67 AM. ECON. REV. 297 (1977).

[353] Dixit & Stiglitz, *supra* note 352, at 297.

[354] For a useful explanation, see TIROLE, *supra* note 308, at 288.

[355] John S. Pettengill, *Monopolistic Competition and Optimum Product Diversity: Comment*, 69 AM. ECON. REV. 957, 959 (1979).

[356] "As we clearly stated what is at issue is the convexity of Samuelsonian social indifference curves, and that can arise just as easily (and probably more commonly) because different consumers use different product types." Avinash K. Dixit & Joseph E. Stiglitz, *Monopolistic Competition and Optimum Product Diversity: Reply*, 69 AM. ECON. REV. 961, 962 (1979).

some of each product.[357] More significant for our purposes, they argue for the general superiority of address models over representative consumer models on the ground that the latter have explicit microeconomic foundations. A virtue of such foundations is that they allow for simulation modeling contingent on different parameters for consumers, producers, and product space, a task to which I will now turn.

3. *A Simulation Study*

To consider how variations in the Salop model might affect whether there is overentry or underentry in a particular market, I designed, programmed, and executed a simulation study. The simulation allows consumers randomly distributed in product space to make purchasing decisions (or choose not to purchase any particular good), and allows producers also randomly distributed in product space to adjust prices to maximize their profits. By calculating consumer and producer surplus in iterated runs with sets of parameter values, we can determine the equilibrium and socially optimal levels of producer entry. The purpose of this simulation is not to determine whether there is overentry or underentry in any particular real market. Although industrial organization scholars have begun to perform empirical studies that assess the optimality of entry in various markets,[358] these studies are generally not based on simulation models. The parameter values that I plugged into the simulation model are thus not based on actual empirical studies, but the simulation nonetheless helps to test whether overentry is indeed possible with a model richer than the Salop model and whether permitting copying can increase social welfare.

The result of the simulation is reported in full in the Appendix. There are several points, however, that are worth summarizing here. First, depending on the parameter values, both overentry and underentry can occur in a market. While this point challenges the complacent neoclassical assumption that entry into copyrighted markets is necessarily welfare-increasing, it also establishes that we cannot assume that overentry is pervasive. Second, the simulation model helps illustrate the potential effects of business stealing. Additional entry by producers into the market consistently increased consumer surplus, but at a declining rate; the more works that

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[357] G.C. Archibald et al., *Address Models of Value*, *in* NEW DEVELOPMENTS IN THE ANALYSIS OF MARKET STRUCTURE 3 (J.E. Stiglitz & F.G. Mathewson eds., 1986). For a discussion, see ANDERSON ET AL., *supra* note 349, at 132.

[358] *See infra* Part IV.

already exist in a particular market for copyrighted works, the less any new work is likely to contribute to consumer welfare. Third, excess entry is more likely with low marginal cost, and insufficient entry is more likely with high marginal cost. This helps explain why a consideration of business stealing is particularly important in the intellectual property context. Fourth, even where entry is optimal, the increased availability of technology allowing consumers to copy rather than purchase works may increase social welfare. Above a certain point, however, copying may become sufficiently widespread that the depressive effect of copying on welfare will lower total welfare.

III. ADDITIONAL ECONOMIC AND NONECONOMIC CONSIDERATIONS

A. Other Economic Considerations

The Salop model and other models of product differentiation assume that social welfare is simply the sum of producer and consumer welfare. This section considers two sets of arguments against any policy that would discourage (or do less to encourage) entry into copyright markets on grounds that social welfare is more complex than that. The first set of arguments is that distributional considerations might provide an argument for increased entry, and the second is that externalities might justify such entry. I address these arguments in part to challenge and refine the economic models on which this Article has relied, but more importantly to show how these models can challenge and refine existing scholarship. I will argue, for example, that negative consequences attributed to winner-take-all markets more accurately should be ascribed to demand diversion in markets for copyrighted works,[359] and that the recent suggestion that copyright markets might be subject to congestion externalities analyzes the problem too narrowly.[360]

1. Distribution

Wealth maximization is a central concern of positive economic analysis, and some argue that it should in fact be the sole concern.[361] Yet other economists, as well as legal scholars with

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[359] *See infra* Part III.A.1.b.

[360] *See infra* Part III.A.2.b.

[361] *See* RICHARD A. POSNER, THE ECONOMICS OF JUSTICE 76-79 (1981). *But see* Jules Coleman, *The Normative Basis of Economic Analysis: A Critical Review of Richard Posner's The Economics of Justice*, 34 STAN. L. REV. 1105, 1115-17 (1982) (critiquing Posner's focus on wealth maximization).

non-economic orientations, are willing to consider and evaluate the distributive implications of market arrangements.[362] So far, I have labeled entry excessive when it does not maximize social welfare, but I have adopted the anodyne assumption that social welfare is simply the sum of consumer and producer welfare. We might, of course, care more about one of these categories than the other, and we might also care about distribution in ways that cut across these categories. In this section, I will evaluate this distributional axis as well as two more subtle issues associated with distributional concerns. One of these is the possibility that in some copyright markets, a small group of top performers might obtain almost all of the producer welfare, an issue with distributive and other implications. The second is the possibility that copyrighted works and other economic products may be "positional goods," desired not just for their intrinsic value, but also as weapons in an arms race in the social hierarchy.

a. Producers vs. Consumers

The fixed costs incurred by producers of copyrighted works are central to the thesis that excessive entry is possible. If it took no time or money to produce a copyrighted work, then the possibility of business stealing would have no welfare consequences, leaving only the distributional issue of established producers versus newcomers. With fixed costs to enter the market—the price of writing, editing, and publicizing a book, for example—business stealing can no longer be a matter of indifference, because such demand diversion makes it possible that someone will have an incentive to enter even if the total social benefit of entry is less than the fixed cost. This focus on fixed costs cannot be dismissed as reflecting a paternalistic interest in the welfare of producers. The problem is a classic tragedy of the commons, and the legal obstacles to self-regulation make the tragedy one difficult to overcome. It might, however, seem that concern about the interests of producers is misplaced, that copyright law ought to focus solely on maximizing consumer welfare. We encourage production, the argument goes, because we value consumption. Because additional entry can only enhance price competition and consumer choice, it ought to be embraced, regardless of the effect on producers.

There are two principal responses to this. First, there is no reason in economics or philosophy to exclude the interests of producers altogether. The debate between natural law and

[362] Louis Kaplow and Steven Shavell stress that distributive concerns are potentially relevant to welfare economics, broadly conceived. *See* Louis Kaplow & Steven Shavell, *Fairness Versus Welfare*, 114 HARV . L. REV. 961, 989-98 (2001).

utilitarian approaches to intellectual property is sometimes framed in such a way that it may seem to be a debate about whether the law should care about artists' rights or those of consumers. Against that framework, concern about overentry might seem to reflect an antique advocacy of the former. But just as natural law theories of intellectual property properly conceived do take into account the concerns of consumers,[363] so too should utilitarian theories take into account value to producers. Economic advocates of strong property rights in intellectual property have paid little direct attention to the interest of producers. In the absence of concern about business stealing, there is no need to worry about producers per se, because in a simplified industrial organization framework, the marginal producer will serve a marginal consumer who otherwise would have been unserved and will make zero profit from doing so.

That the interests of producers should receive weight in a utilitarian calculus does not mean that each dollar of surplus should count the same for both producers and consumers. One argument for counting consumer welfare more than producer welfare would be that consumers are generally less wealthy than producers. To be sure, virtually all viewers of the latest *Star Wars* episode will have fewer material resources than George Lucas, but many consumers of copyrighted works seem like poor candidates for distributional concern. Distributive justice would seem to demand more concern for those who cannot afford movies and books than for those who own substantial compact disk collections. Moreover, media conglomerates are generally publicly owned, and so the same middle class individuals may have an interest in copyright policy both as consumers and as producers via their stock portfolios. That is not to say that the average recipient of a dollar in producer profits is no more wealthy than the average consumer paying such a dollar. It does, however, suggest that markets for copyrighted works are not good vehicles for remedying inequities between rich and poor. Maybe health care policy should concern itself with distribution, but the case for concern about distribution seems somewhat less for copyright policy.

In any event, even if producers were to receive no consideration at all in a welfare calculus, the fixed costs that they incur are still worth considering, because we have seen that legal policy can shift rents from one group to another. Even if consumers are always better off with additional entrants, all else being equal, they might be still better off if a tax reduced the

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[363] *See, e.g.*, Wendy Gordon, *A Property Right in Self-Expression: Equality and Individualism in the Natural Law of Intellectual Property*, 102 YALE L.J. 1533 (1993).

number of entrants and were transferred to consumers. The possibility of redistributive taxation is a common argument for placing wealth maximization as a central objective of law outside the domain of policies primarily designed to achieve distributive goals.[364] A limitation of such an argument is that a tax may be difficult to implement, either for political or practical reasons. The theoretical possibility of a tax on movies, books, or music does not serve to answer a distributive concern if no legislature would enact it.

More realistically, as I have already suggested, legal doctrine might change to give greater rights to consumers at the expense of producers.[365] Thus, even if consumers suffer from the decreased diversity attributable to a reduction in the number of producers, their overall welfare depends on how that reduction is achieved. If the legal vehicle for reducing the number of producers is a change in the law generally favorable to consumers with respect to works that are produced, then the benefits to consumers from this change might be greater than the costs to them from decreased diversity. In that case, even though the focus of this analysis is on producers' losses, one could offer no distributional complaint on behalf of consumers.

b. Winner-Take-All Markets

Though the producer-consumer axis is the most obvious along which to evaluate distributional issues, distribution *within* each of these groups is also of concern. This section will address distribution among producers, while the next will consider distribution among consumers. Authors, musicians, artists, actors, and other contributors to copyrighted works do not form monolithic groups. In each category, some are far more successful than others. There can be no more than one Oprah, Britney Spears, Thomas Kinkade, or Keanu Reeves, and only a few who enjoy comparable success at the top of their fields, financially at least, whether or not on the basis of any intrinsic merit. There can, however, be many, many starving wannabes, waiting tables part time to eke out a living. My primary concern here will not be with whether the distribution of rewards among such beneficiaries of copyright protection is fair, though surely

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[364] *See, e.g.*, Louis Kaplow & Steven Shavell, *Should Legal Rules Favor the Poor? Clarifying the Role of Legal Rules and the Income Tax in Redistributing Income*, 29 J. LEGAL STUD. 821 (2000); Louis Kaplow & Steven Shavell, *Why the Legal System is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667, 677 (1994) ("[I]t is appropriate for economic analysis of legal rules to focus on efficiency and to ignore the distribution of income . . . ."). *But see* Nicholas L. Georgakopoulos, *Solutions to the Intractability of Distributional Concerns*, 33 RUTGERS L.J. 279 (2002) (criticizing the argument); Chris William Sanchirico, *Taxes versus Legal Rules as Instruments for Equity: A More Equitable View*, 29 J. LEGAL STUD. 797 (2000) (same).

[365] *See supra* text accompanying notes 230-232.

all can agree at least that Reeves' acting ability ought to entitle him only to the wannabe category. Rather, it will be how a market structure in which a few participants make off with large rewards affects the analysis of overentry. Equally significant, I will show how an appreciation of overentry should cause reconceptualization of economic theories concerning asymmetric distribution of rents among producers.

The implications of "winner-take-all markets," which perhaps more accurately should be dubbed "winners-take-an-awful-lot markets," are explored in Robert H. Frank and Philip J. Cook's *The Winner-Take-All Society*.[366] The book explores a wide range of markets—including professions ranging from academics[367] to athletes.[368] Labor markets for producers of copyrighted works receive some attention in the book, for example in the perhaps overheated observation, "Book publishing is a lottery of the purest sort, with a handful of best-selling authors receiving more than $10 million per book while armies of equally talented writers earn next to nothing."[369] Similarly, they observe that in arts and entertainment fields, "only about 2 percent (16,000 people) earned $120,000 or more in 1989."[370] Yet their primary concern, like mine, is not the fairness of this inequitable distribution but its effects on decisions whether to enter the markets in the first place.

A central component of the thesis of *The Winner-Take-All Society* might initially seem superficially similar to that advanced here. "[P]otential contestants in winner-take-all markets," Frank and Cook observe, "generally ignore an important cost imposed on others by their entry—namely that each additional contestant reduces the odds that someone already in the contest will win."[371] The result is an excess of contestants in winner-take-all markets.[372] Frank and Cook realize that increased numbers of contestants will increase quality, but they argue that "[i]f the least talented contestants were to drop out and become engineers, teachers, or production workers, the performance levels of the top performers in winner-take-all markets would not fall

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[366] ROBERT H. FRANK & PHILIP J. COOK, THE WINNER-TAKE-ALL SOCIETY (1995).
[367] *See, e.g.*, *id.* at 12-13.
[368] *See, e.g.*, *id.* at 29.
[369] *Id.* at 9. I say "overheated" because of my assessment, which is consistent with most of the Frank-Cook argument, that the best-selling authors probably on average are more talented, at least at producing what consumers want, than the relevant armies.
[370] *Id.* at 88.
[371] *Id.* at 9.
[372] *Id.* at 101-23.

by much, if at all."[373] A lottery ticket that offers a chance at superstardom may be worth more to some than a predictable salary in a more stable profession, even if the social value of joining the stable profession would be much higher than the social value of having someone else try for stardom.

A consideration of the analysis in this Article, however, suggests that Frank and Cook's identification of the excessive entry problem with winner-take-all markets is too narrow. The winner-take-all problem offers just a variant on the more general problem of business stealing. It makes no difference to the analysis whether a new entrant into the market diminishes other players' market share or their probabilities of market dominance. Suppose that the market for singers were far more equitable than it is now, perhaps because consumers developed an affirmative distaste for familiar voices, so each of thousands of singers sold a roughly equal number of CD's instead of a few top performers virtually cornering the market. Each new entrant into this hypothetical singing market would still be stealing business from other singers and would have no reason to take this effect into account. As long as consumers can choose among various producers, business stealing will tend to lead to excessive investment regardless of whether the market is or approaches winner-takes-all.

Indeed, all else being equal, the excessive entry problem is likely to be of greater concern in a market with relatively even payouts than in a winner-take-all market. The reason is risk aversion. People who are risk-averse by definition will be more hesitant to enter a winner-take-all market than one with equal payoffs, and that will lead fewer to enter such a market, dampening any excessive entry. Frank and Cook offer a response to the argument that risk aversion might reduce excessive entry in winner-take-all markets, albeit without acknowledging the possibility that excessive entry might not be unique to winner-take-all markets at all. They argue that "[p]rivate entrepreneurs can stimulate entry into winner-take-all markets when it is insufficient,"[374] for example by entering into cooperative arrangements in which contestants agree to share their winnings. Such arrangements, however, are likely to be beset by adverse selection and moral hazard.[375] Even in the absence of these obstacles, private entrepreneurship

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[373] *Id.* at 109. A more accurate, though less dramatic, statement would be that if the contestants who *seem* to be least talented, based on their own evaluations or those of their backers, drop out, the loss would not be great. It is always possible, however, that the party dropping out in fact would turn out to be extraordinarily successful.

[374] FRANK & COOK, *supra* note 366, at 117.

[375] The adverse selection problem is that those most likely to be winners are least likely to enter into cooperative arrangements,

cannot fully offset risk aversion, given the costs of organizing such cooperatives. There is no need for such entrepreneurship in a market with more equitable distribution, and so risk aversion will make winner-take-all markets less susceptible to excessive entry than more equitable markets, all else being equal.

Excessive entry thus cannot be a consequence of winner-take-all markets, though I agree with Frank and Cook that, risk aversion notwithstanding, it is more likely to be present in winner-take-all markets than in other markets. The reason is that winner-take-all markets typically exhibit low marginal production costs. Frank and Cook recognize this association, and indeed they attribute the increase in the number of such markets to "increasing leverage for the talents of those who occupy top positions and corresponding less room for others to find a lucrative niche,"[376] for example because a singer can perform in everyone's living room instead of only a single location.[377] The possibility of such "production cloning"[378] not only tends to make markets winner-take-all, but also could make excessive entry a greater concern.

Low marginal cost may accentuate the business stealing effect because entry is unlikely to increase the number of consumers who are served. When Yo-Yo Ma can be in everyone's living room, there is less need to have dozens of other cellists than there would be in the absence of audio recording, and business stealing accordingly is less likely to have the side benefit of resulting in more consumers' being served. There is, to be sure, a competing effect. With low marginal cost, more consumers can benefit from each additional entrant. All consumers, in theory, can benefit from the thousandth cellist in a world of audio recording. This effect, however, is likely to dominate only when there are very few entrants. Though the addition of a second cellist would might substantially improve consumers' welfare by allowing them to purchase CDs of both performers, once the number of cellists is sufficiently high, the addition of a marginal cellist will not lead consumers to increase their CD budgets, but instead will result only in substitution of the new cellist's work by some consumers for that of other performers. While it is possible that we are not at or near this point in some markets for copyrighted works,

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and the moral hazard problem is that those who enter into the cooperative arrangements will have less of an incentive to perform well. *See generally* KENNETH S. ABRAHAM, DISTRIBUTING RISK: INSURANCE, LEGAL THEORY, AND PUBLIC POLICY 14-15 (1986) (defining "adverse selection" and "moral hazard').

[376] FRANK & COOK, *supra* note 366, at viii.

[377] *Id.* at 32-33.

[378] *Id.* at 32.

the vast number of available works in most markets provides some support for the intuition that the optimal number of works will be lower with relatively low marginal cost.

Frank and Cook's concern about excessive entry in winner-take-all markets is thus well-placed, though only because production cloning may make markets both winner-take-all and susceptible to business stealing, not because winner-take-all markets are inherently susceptible to business stealing. This clarification has significant implications for the scope of Frank and Cook's project. Frank and Cook see winner-take-all markets almost everywhere, yet their least persuasive examples are those in which the "production cloning" protected by copyright law is not involved. For example, they cite Alan Dershowitz as an example of a winner[379] and law more generally as a winner-take-all field,[380] but the case seems far weaker than in, say, music or athletics. While some lawyers undoubtedly earn far higher salaries than others, and while some rainmaker partners control a relatively large amount of business for their firms, the scale of production is still considerably restricted, because any one lawyer can oversee only so many cases.[381] Frank and Cook claim that students enter into law school because the education gives them lottery tickets that might turn into multi-million dollar jobs,[382] but they offer no evidence for this assertion, which seems inconsistent with the common intuition that in general, it is the most risk averse students who enter law school, in search of steady but unspectacular success.[383] While microcosms of the winner-take-all phenomenon may be pervasive, with the most successful in every field from catering to construction earning considerably more than other performers, Frank and Cook's argument would be stronger if it were focused specifically on labor markets producing copyrighted works, for low marginal cost is a more significant contributor to the excessive entry problem than the winner-take-all nature of markets.

Frank and Cook's analysis, however, does highlight one important feature of winner-take-all markets that is also likely to be present in markets for copyrighted works and that supports this Article's thesis: Consumer welfare may depend greatly on relative performance.

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[379] *Id.* at 223.

[380] *Id.* at 16-17. Frank and Cook emphasize that litigation services are offered in a zero-sum game, but this is not a winner-take-all problem.

[381] For an assessment of the degree to which the legal profession is winner-take-all, see REBECCA L. SANDEFUR & JOHN P. HEINZ, AMERICAN BAR ASS'N, WINNER-TAKE-ALL MARKETS FOR LEGAL SERVICES AND LAWYERS' JOB SATISFACTION (1999).

[382] FRANK & COOK, *supra* note 366, at 97-98, 111.

[383] A more plausible case of a winner-take-all market can be made for entry by recent law school graduates into law firms. *But see* Kevin A. Kordana, Note, *Law Firms and Associate Careers: Tournament Theory Versus the Production-Imperative Model*, 104 YALE L.J. 1907 (1995) (arguing that tournament theory fails to explain law firm organization).

Using boxing as an example, Frank and Cook argue that while today's heavyweights likely are "a little faster and stronger than the champions of earlier years,"[384] that improvement has not made the sport of boxing any better. "What most fans really care about is seeing the best fighters in the game go all out for the title,"[385] so boxing today would not be much less attractive in a parallel universe in which the top thousand fighters alive today had instead decided to become chiropractors. Fans in the parallel universe watching the boxers that they perceived to be the best would be unaware of the potential lost to chiropractic, the game would be almost as exciting as before, and chiropracty would gain some of its strongest practitioners. It may similarly be the case that consumers care about seeing the best new movie or hearing the hot new musical group, rather than about the absolute quality of the movie or group. Presumably, absolute quality matters in such markets as well.[386] To the extent that relative performance does matter, however, reductions in entry will have less of an adverse effect on consumer welfare and overentry is a greater danger.

c. Positional Goods

The winner-take-all market illustrates the possibility that competition among producers to be the best might reduce social welfare. Positional goods offer a similar dynamic among consumers. A positional good is one valued because it is scarce and thus conveys status.[387] For example, I may want a red Porsche convertible in part because I like the way the wind messes up my hair when I drive at 100 m.p.h., but I might also like such a convertible because my neighbor Jones will be impressed, or perhaps even a bit jealous. The consumption of positional goods is a matter of concern because consumption by one person inherently makes someone else worse off. If everyone buys the same impressive car for reasons other than inherent utility, then no one will

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[384] FRANK & COOK, *supra* note 366, at 115.

[385] *Id.*

[386] Frank and Cook acknowledge that consumer concerns about absolute and relative performance may coexist. *See, e.g.*, *id.* ("A buyer's satisfaction with his color television set depends not only on the absolute quality of its pictures but also on how that quality compares with other sets in use.").

[387] Robert Frank explains that the value of positional goods "depends relatively strongly on how they compare with things owned by others." Robert H. Frank, *The Demand for Unobservable and Other Nonpositional Goods*, 75 AM. ECON. REV. 101, 101 (1985). Frank Hirsh, who originated the idea of positional goods, defined the term more broadly to include those that are inherently scarce, even if not desired for status alone. *See* FRED HIRSH, SOCIAL LIMITS TO GROWTH 27 (1976). For example, we cannot all have full-time human servants, because someone must be the servant, and so the services of such servants may be defined as positional even though someone might want servants for reasons other than status. *See* Richard McAdams, *Relative Preferences*, 102 YALE L.J. 1, 19 (1992). I, for one, would be embarrassed to have a butler, but I must admit that a butler would be convenient when I feel like eating crepes but do not wish to get off the couch.

be impressed, and yet the result will be a Nash equilibrium because in such a world, no one would want to be the only one without such a car. But if only everyone could agree to purchase a low-end Toyota or Ford, everyone who otherwise would have purchased the Porsche for positional reasons would be better off. More generally, consumers will tend to excessively consume positional goods and insufficiently consume nonpositional goods,[388] because they do not take into account the zero-sum nature of the positioning game.

An assessment of where copyrighted goods fit on the spectrum from positional to nonpositional goods is relevant to consideration of whether entry is excessive. The apparent benefit of increased entry is additional consumer choice, and thus additional consumption of copyrighted goods. If copyrighted goods were purely positional, then this additional consumption would have no social value, and the case for reducing production incentives would be improved. Though the precise degree of positionality is an empirical question, it seems fair to intuit that copyrighted works have positional elements, but are far from sports cars. Books especially serve primarily utilitarian purposes, and while there are some collectors who take pride in the diversity of their libraries, they are in the minority. Positional aspects of books, however, should not be dismissed altogether. Many books purchased are never read. While that might be in part because book purchases, like new year's resolutions and health club memberships, are often aspirational, it also might reflect that ownership of a well-stocked library may be a matter of pride. Such a theory seems even more plausible with collections of compact disks, movies, or computer games. Nonetheless, there are undeniable utilitarian, nonpositional advantages to owning collections that require more than one shelf, chief among them reduction of boredom from being repeatedly subject to the same work over and over and over again.

There are, however, three reasons that we should be concerned about positional goods even if copyrighted goods are largely nonpositional. First, even if consumers derive substantial utility from nonpositional aspects of intellectual property, positional aspects of such goods may be significant in explaining why consumers choose one particular product over another. In particular, innovations in copyrighted goods may be significantly positional even if the good itself is largely nonpositional. Suppose, for example, that I want a vegetarian cookbook for prosaic reasons, because I like to eat eggplant when I go to restaurants but can't figure out how

[388] *See generally* ROBERT H. FRANK, CHOOSING THE RIGHT POND (1985).

to make it taste good at home. Even so, the reasons that I might prefer the newest cookbook with the most elegant cover to a heavily discounted alternative might be positional. I might not really believe that the newest cookbook is likely to produce tastier eggplant than an older one, but as long as I am buying a cookbook, I might as well buy a hip new one that will complement the overall imagine that I am trying to project with my kitchen. As the example shows, even a relatively small degree of positionality can lead to significant excess production, since the existing stock of copyrighted works often will be sufficient to satisfy nonpositional utilitarian desires. While this argument is stronger for books than, say, for movies, even the average moviegoer missed many movies with interesting trailers from the year before and thus it might seem ought to receive equal utility from viewing an old one. Part of the success of the newest movies may be attributable to status associated with having seen the latest movies.[389]

Second, even if the underlying good is not positional, product diversity may exist substantially to satisfy positional desires. The economic models of product diversity described above[390] posit a consumer located in some ideal point in product space, but it may be that a consumer's location in product space in fact depends on the locations of other consumers. A consumer, for example, might want to occupy a unique niche in product space, for example by purchasing a unique article of clothing that no one else is likely to wear to the prom. Or, a consumer may purchase an item because it is popular in a particular subculture with which the person wishes to identify. Though this theory seems to have greater explanatory power in fashion than for copyrighted works, the possession of unique or fashionable copyrighted works might convey status. The analysis here is more complicated than with classic positional goods, because the status benefits are not necessarily detriments to others. To the extent that product diversity brings relative status rather than improved utility, however, consumers are likely to value it excessively from a social perspective, and thus there are likely to be an excess of new works.

Third, and most important, any reforms that would make existing copyrighted goods more widely available to consumers might tend to *reduce* the extent to which copyrighted goods are positional. Imagine a world in which red convertibles could be produced at very low marginal cost. If such red convertibles also were sold at extraordinarily low prices, for example

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[389] Relatedly, preference for new movies relative to old ones may reflect a network effect, that one wants to see movies that others have seen recently to facilitate interesting conversations. *See infra* note 411.

[390] *See supra* Part II.

as indistinguishable knockoffs, then they would no longer be positional, because there would be no status advantage to owning them. At the same time, the population could obtain the nonpositional benefits of such automobiles, such as superior handling. This is almost surely a fantasy world, in part because it is difficult to imagine how one might cheaply copy a car. A regime permitting noncommercial copying of copyrighted goods, however, is feasible, and it would make intellectual property much less positional.[391] Any remaining positionality would be attributable to status attributable to ownership of an authorized rather than an unauthorized copy. Any doctrinal change that would enhance access to intellectual property at the expense of producers and of product diversity would thus counteract any tendency of consumers to invest excessively in copyrighted goods for status reasons.

2. *Externalities*

The last section questioned the assumption that social welfare was equal to the sum of producer and consumer welfare on the basis of distributional consumers. This section questions that assumption for an independent reason, that social welfare also depends on third-party effects. Perhaps my purchase of a book from you benefits or hurts someone who is not a party to the transaction. The analysis of winner-take-all markets and positional goods highlights specific types of externalities, but the issue is far broader. I cannot, of course, consider all possible externalities, and I will for example pass over the environmental effects of consumer consumption of books. The most obvious type of externality from consumption of copyrighted goods, an informational externality, might seem to push toward underentry, but I will argue that copyright doctrine would be an odd place to take such an externality into account. In addition, I will show how congestion externalities and network externalities strengthen the case that overentry might occur.

a. *Information Externalities*

A book is not like a pizza. If you consume a pizza, there is almost no conceivable cost or benefit to me, unless I have sold you the pizza. A book, however, is not simply consumed, because books teach, inform, and persuade. Some television programs do too, as do some movies

[391] It might, however, enhance the positionality of devices capable of performing such copying. *See supra* note 251 (noting the possible adverse effects of a regime in which only some consumers follow the law).

and music, though probably to a lesser degree. If a copyrighted work changes you, then it may change how you interact with me. A cookbook may improve someone's ability to cook, and perhaps that person's guests will have an easier time not cringing when complimenting the chef's cooking. Books may also serve as reference sources or teaching tools in a variety of professions, and the quality of products or services provided by those in such professions will thus rise, benefiting consumers. More subtly, a work of fiction or a movie may change the way someone thinks, perhaps by broadening the person's horizons in a way that will lead the person to be more sympathetic to those from different cultural backgrounds. Or, a computer game may warp a child's mind and lead that child on a violent shooting rampage.

The last of these would be a negative externality, while the rest are positive externalities. A theory that a reduction in incentives to produce copyrighted works would have negative third-party effects depends on the positive externalities of marginal copyrighted works being greater than the negative ones. This seems, on balance, like a close question. While the positive externalities of copyrighted works as a whole of any genre might well swamp the negative externalities, the effects on the margins may point in the other direction. While marginal consumption of books might produce greater positive than negative externalities, marginal consumption of movies, television shows, and music might produce more negative than positive externalities. If television programming suddenly became a bit less attractive, then the resulting decision of a television viewer to watch less television rather than more seems likely to lead that television viewer to spend more time on economic and family pursuits. Even if the viewer is worse off, an effect which is not an externality,[392] others are likely to be better off, if affected at all. I do not mean to suggest that third parties *would* be affected at all, but if they were, it is hard to fathom how the effect for the vast majority of copyrighted works would be more negative than positive.

If information externalities are thus relevant, they probably will be relevant only for a narrow class of copyrighted works. Garden variety pop culture may well benefit society greatly, but the bulk of the benefit is in entertainment value to the consumer, not advance of broader social welfare. This is a snobby position, and I imagine that one might develop an argument that

[392] That the consumer might be worse off is, of course, a consideration that the Salop model directly considers. *See supra* Part II.A.

pop culture in fact is an important shaper of social attitudes.[393] While I am skeptical that the effect tends to be more positive than negative,[394] I am still more skeptical that the effect is substantial enough to merit significant concern about marginal changes in the volume of entertainment harming anyone other than consumers of those products. This still leaves works that are explicitly informative, such as nonfiction books, television news, and law review articles, and for which there is thus a more plausible case of informational externalities. Perhaps, one might argue, copyright doctrine that encourages the production of as many works as possible is worth it even if most copyrighted works are rubbish, because of the large beneficial effects associated with informational works.

This argument, however, is flawed. Even if informational works as a whole produce substantial third-party benefits, marginal effects are unlikely to matter much. While I may benefit from your learning to cook, it probably will not have much of an effect on me if you use a slightly older cookbook rather than the newest one. And while the production of history books promotes historical knowledge among the populace, the level of the average person's historical knowledge is unlikely to depend much on the range of new copyrighted works available to that person. Of course, copyrighted works increase human knowledge, so even if substitution effects mean that the marginal production of one work has no effect on the average person's knowledge, increases in the overall store of knowledge may be significant. But copyright policy is unlikely to be the best vehicle for increasing the store of human knowledge; direct funding of scientific and humanities research is a better tailored approach. Similarly, even if increasing individuals' knowledge and awareness is a social benefit, that social benefit is likely best achieved through education spending rather than through copyright policy, even if some of that education spending is used to purchase books and other copyrighted works.

b. Congestion Externalities

The effect of informational externalities is on third parties who need not be consumers of copyrighted works themselves. Congestion and network externalities affect sellers and purchasers of related copyrighted works. With a congestion externality, the existence of too

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[393] For a work embracing commercially produced culture generally, see TYLER COWAN, IN PRAISE OF COMMERCIAL CULTURE (1998).

[394] A commonly alleged negative effect is the effect of television violence on children. *See generally* John P. Murray, *The Impact of Televised Violence*, 22 HOFSTRA L. REV. 809 (1994) (reviewing studies).

many copyrighted works of a particular type lowers demand for that entire class of works. A congestion externality thus affects consumers individually, while network externalities depend on the interaction of consumers' consumption. A positive network externality exists if one individual's consumption of a copyrighted work increases the benefit to others of consuming that work, while a negative network externality exists if one individual's consumption of a copyrighted work decreases the benefit to others of consuming that work. This section will consider congestion externalities, while the next will focus on network externalities.

Congestion externalities receive attention in William Landes and Judge Richard Posner's recent article urging that a regime of indefinitely renewable copyright replace the existing regime of time-limited copyrights.[395] I have already considered the issue of the copyright term, but their analysis of congestion externalities is important independent of their conclusion. Landes and Posner criticize a suggestion of a group of intellectual law professors that "[t]here can be no overgrazing of intellectual property . . . because intellectual property is not destroyed or even diminished by consumption."[396] Adapting a similar observation by Mark Grady in the right-of-publicity context,[397] Landes and Posner suggest that "congestion externalities" are possible with copyrighted works. Explaining the trademark example, they write, "[A] celebrity's name or likeness has public good characteristics . . . yet unlimited reproduction of the name or likeness could prematurely exhaust the celebrity's commercial value in much the same way that unlimited drilling from a common pool of oil or gas would deplete the pool prematurely."[398] Just as Humphrey Bogart's value might decline if his name or likeness in advertising were overused,[399] so too might Mickey Mouse's value, if, as a result of the absence of copyright protection, he appeared in too many comic strips, advertisements, and movies. "Not only would the public rapidly tire of Mickey Mouse, but his image would be blurred, as some authors portrayed him as a Casanova, others as catmeat, others as an animal-rights advocate, still others as the henpecked husband of Minnie."[400]

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[395] Landes & Posner, *supra* note 265.

[396] Denis S. Karjala, Statement of Copyright and Intellectual Property Law Professors in Opposition to H.R. 604, H.R. 2589, and S. 505, The Copyright Term Extension Act, Submitted to the Joint Committees of the Judiciary, Jan. 28, 1998.

[397] *See* Grady, *supra* note 133; *see also* Douglas G. Baird, *Does Bogart Get Scale? Rights of Publicity in the Digital Age*, 4 GREEN BAG (2D) 357, 363-64 (2001).

[398] Landes & Posner, *supra* note 265, at 14.

[399] *Id.* at 14; *see also* Baird, *supra* note 397, at 364.

[400] Landes & Posner, *supra* note 265, at 15-16.

Landes and Posner's argument provides some support for this Article's observation that the number of copyrighted works may be excessive, but the scope of the problem that they identify might be quite small, and their focus on congestion obscures what I believe to be a more general point about demand diversion. Landes and Posner are not noting the obvious, though insufficiently explored, point that one producer's use of a copyrighted character will make some customers likely to choose that producer over another. Rather, they are arguing that the absence of a property right might lead to lower demand for the products of all producers, as they illustrate with a demand curve that shifts down in response to the absence of a property right.[401] Thus, the theory goes, the value of Mickey Mouse will be optimized over time by making him relatively scarce initially, lest the "public rapidly tire" of him. Similarly, the value of Mickey Mouse will be optimized by ensuring that his image is kept sharp by resisting uses of him that might make him lose his identity.

These are relevant considerations, but the empirics are difficult to assess. Consider first the timing issue. It is possible that the best way to ensure future interest in Mickey Mouse might be to make sure that Mickey Mouse is omnipresent today. A purpose of advertising is to build product recognition, and the widespread presence of a product can be a profitable form of increasing market share in the future. Alternatively, the future consumption of Mickey Mouse might be so uncertain that the net value of the character is maximized by full exploitation today. ABC Television executives were surely aware of concerns that the public might tire of *Who Wants to Be a Millionaire?*,[402] yet nonetheless filled the network's schedule with Regis Philbin. Perhaps this is a cautionary tale, or perhaps interest would have faded anyway and the network was smart to snag ratings while viewers were interested, even if the volume of programming decreased later interest in the show. My point is not that the immediate exploitation strategy is necessarily best, but simply that sometimes it might be.

The empirics are also uncertain even within a given time frame. It is possible that an inundation of Mickey Mouse images might increase the aggregate demand for such images. The exposure to my successful film will help popularize the character and encourage others to seek out everything Mickey. Thus, additional production conceivably could increase the demand

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[401] *Id.* at 14 fig.1.

[402] *See, e.g.*, Bill Carter, *At 3 Times a Week, Will ABC's* Millionaire *Be Too Much of a Great Thing?*, N.Y. TIMES, Jan. 3, 2000, at C11.

curve. Even if my production of a Mickey Mouse film hurts other producers of Mousiana, the amount of business that I receive could be greater than the amount of business that I take away from others. The presence of an additional Mickey Mouse product will increase aggregate demand for such products by allowing each customer to consume the product most closely tailored to her interests. This is, of course, the logic of the product differentiation literature, with differentiation making product space more dense, to the benefit of consumers. Landes and Posner's scenario is empirically plausible, but in the ordinary course of events, increased product diversity will have no effect or increase aggregate demand rather than decrease it.

These observations, of course, do not diminish Landes and Posner's recognition that a copyright owner will have appropriate incentives, inundating the market in one case or manufacturing scarcity by limiting use of a copyrighted work in another, and that a property right may encourage optimal use of the resource.[403] If scarcity across product markets or time does maximize the value of intellectual property, then the absence of a property right might lead to excessive use, because no individual producer has an incentive to take congestion externalities into account. It does, however, suggest that congestion externalities in the form that Landes and Posner describe them are an unusual or at least not a pervasive phenomenon. Landes and Posner's criticism is a narrow one, targeted at copyright in characters and the like.[404] Overdistribution of any particular copyrighted work seems less likely to produce a congestion externality. While I may be willing to see *It's a Wonderful Life* only a certain number of times or may not wish to see it for a year or so after I have last seen it,[405] it is hard to believe that increased access to the production would on the whole decrease my demand for it. Surely I will see the film more if it played often than if it is played seldom.[406]

Congestion externalities, in any event, are unlikely to be a significant factor producing a tendency toward excessive production of works, because copyrighted works are far more

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[403] Property rights have long been understood to be important not only in providing optimal production incentives, but also to encourage optimal current uses. *See* Landes & Posner, *supra* note 265, at 12 & n.24 (citing Frank Knight, *Some Fallacies in the Interpretation of Social Cost*, 38 Q.J. ECON. 582 (1924)).

[404] Landes & Posner, *supra* note 265, at 13.

[405] I mention *It's a Wonderful Life* because of the unusual state of its copyright. The work appeared to fall into the public domain because of a failure to observe copyright formalities by owners of the film. The copyright owner, however, later argued that unauthorized distribution of the film would infringe the copyright on the short story on which the film was based and on the music in the film. *See* Steven Mitchell Schiffman, *Movies in the Public Domain: A Threatened Species*, 20 COLUMBIA-VLA J. L. & ARTS 663, 671-72 (1996).

[406] I do not mean to imply that a copyright owner would ensure that *It's a Wonderful Life* will be on television every night. There are opportunity costs to broadcasting a show, and I might prefer on some night to see a rerun of *Greatest Police Chases II*.

economically important than uncopyrighted works. This conclusion, however, does not diminish the possibility of excessive production more broadly, a possibility of which Landes and Posner take no account. Indeed, in discussing congestion externalities, Landes and Posner emphasize that "it is important to distinguish between technological and merely pecuniary externalities,"[407] and they thus ignore the demand diversion phenomenon. As I show above, however, pecuniary externalities can matter in circumstances of imperfect competition.[408] What Landes and Posner thus miss is the significance of investments in copyrighted works. Even if my decision to produce a new *Mickey Mouse* film has no effect on aggregate demand, or even increases it, the production may lower social welfare once the fixed costs of producing the film are taken into account. While Landes and Posner recognize the possibility that congestion in product markets on occasion may lessen consumers' interest in those markets as a whole, they take no account of the social cost of producing the congestion in the first place.

c. Network Externalities

While the analysis of congestion focuses on individual consumers confronted by a range of similar products, the network externality analysis highlights the effects of one consumer's consumption on another.[409] The analysis of network externalities has been particularly important in the software market, because one person's decision to use a particular brand of software makes that software more attractive to others.[410] Network effects might exist to a lesser extent with consumers of books, movies, or music. My enjoyment of a book may depend in part on my ability to discuss it with others, so your decision to read the same book as I will produce a benefit to me.[411] If two torts professors assign the same casebook, students in different classes will find it

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[407] Landes & Posner, *supra* note 265, at 13.

[408] *See supra* Part II.A.4.

[409] I use the term "network externality" rather than "network effect" because I am analyzing here whether nonoptimal entry may occur as a result of the effect of one consumer's consumption on another consumer. I recognize, however, that network externalities sometimes can be internalized and that network effects need not inherently lead to suboptimal outcomes. Some authors have suggested reserving the term "network externality" for markets in which these externalities lead to inefficiencies. *See, e.g.*, S.J. Liebowitz & Stephen E. Margolis, *Network Externality: An Uncommon Tragedy*, 8 J. ECON. PERSP. 133, 135 (1994).

[410] For an analysis considering both software and other markets, see Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998).

[411] A book would thus be a solidarity good. Guy Pessach has recently used the phenomenon of solidarity goods to argue that copyright law may discourage even non-infringing works, particularly non-infringing works made by other than major media companies, which may never reach consumers as a result of the dominance of major media products. *See* GUY PESSACH, COPYRIGHT LAW AS A SILENCING RESTRICTION ON NON-INFRINGING MATERIALS: UNVEILING THE REAL SCOPE OF COPYRIGHT'S DIVERSITY EXTERNALITIES (Yale Law & Econ. Research Paper No. 268, 2002). In the terms of this section, the network benefits

easier to study together. Similarly, the tendency of many moviegoers to see movies right when they arrive in theaters, rather than waiting for the crowds to thin or even the price to drop, suggests that these effects may be important indeed. Finally, I may wish to exhibit familiarity with the same music that others enjoy.[412]

The increasing returns associated with network markets are, of course, beneficial to the participants in these markets. There are, however, at least two reasons that network externalities could lead to inefficient outcomes. First, realization of positive network externalities requires implicit coordination, and entrants into markets may not fully take into account that their entry might frustrate such coordination. Company *A* and Company *B* may produce two incompatible word processing programs, and all consumers would benefit if only they could settle on one company or the other. But because the companies' products are so similar in quality, the existence of rival programs may persist for a period of time, thus limiting the positive network benefits that consumers can receive. Thus, it is possible that reduced rents to software companies might improve the utility of software by reducing the number of companies that decide to enter software markets. Analogous phenomena, though not as powerful, apply for other media. If I see movies because I like to discuss them with others, then the existence of a diverse array of movies may frustrate our attempts at conversation. If two good movies are released one weekend, but you and I each have time for only one and do not coordinate, then we may end up seeing different movies. Even if each of us benefited from the density of product space in the moviegoing experience itself, that same density may limit our ability to share our experiences. This consequence likely produces a tendency toward excess production, but it should not be exaggerated. People, after all, often do succeed in implicitly coordinating their behavior, as one movie, perhaps because of hype or word-of-mouth, becomes a "focal point,"[413] so that those who wish to discuss movies will see that one rather than some other.

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from solidarity goods may produce a type of path-dependence that prevents the marketing of alternative works. *See infra* note 414 and accompanying text.

[412] Of course, for the same reason, music might be characterized as a "positional good." *See supra* Part III.A.1.c. Perhaps I invest in music to be in the cool crowd, but my investment may thereby harm others who therefore are not as cool as I am. Stated purely in network externality terms, network externalities that are positive because they cement in-group relations may also be characterized as negative because of their effect on those outside the group.

[413] *See generally* THOMAS C. SCHELLING, THE STRATEGY OF CONFLICT 54 (1979) (discussing "tacit coordination games" where participants seek out a focal point).

Second, network externalities may contribute to path dependence. The most popular example in the literature is the QWERTY keyboard, which, though it is allegedly an inferior layout, is the dominant standard.[414] Because there are network benefits to using the same keyboard as others, keyboard users are unable to switch to a better standard, or so the story goes. The welfare implications might seem to point to the production of an insufficient number of works, because a greater number of works may help prevent path dependence. But any benefits from a reduced number of works come at the expense of network benefits. It seems unlikely that a decrease in the number of works will increase welfare by frustrating network effects. Perhaps it could happen in a rapidly growing market, since the welfare of the initial users may be of much less significance than the welfare of subsequent users, but in such a market, an innovative product might be able to overcome the network effects enjoyed by a dominant but inferior product. In any event, path dependence is only a concern with software, not with other copyrighted works. Thus, the network externalities analysis on the whole supports this Article's observation that an excessive number of copyrighted works may be produced.

B. Differentiation and Democracy

This Article focuses on the economics of copyright, but scholars in recent years increasingly have focused on copyright through the lens of democratic theory.[415] Most prominently, Neil Netanel has analyzed copyright's importance to democracy in a series of articles,[416] suggesting that copyright underwrites an expressive sector and an independent press

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[414] The inferiority, however, may be exaggerated. *See, e.g.*, S.J. Liebowitz & Stephen E. Margolis, *The Fable of the Keys*, 22 J.L. & ECON. 1 (1990).

[415] *See, e.g.*, C. Edwin Baker, *First Amendment Limits on Copyright*, 55 VAND. L. REV. 891 (2002); Yochai Benkler, *Free as the Air to Common Use: First Amendment Constraints on the Enclosure of the Public Domain*, 74 N.Y.U. L. REV. 354 (1999); Michael Birnhack, *The Copyright Law and Free Speech Affair: Making-Up and Breaking-Up*, IDEA: J.L. & TECH. (forthcoming 2003); Erwin Chemerinsky, *Balancing Copyright Protections and Freedom of Speech: Why the Copyright Extension Act is Unconstitutional*, 36 LOY. L.A. L. REV. 83 (2002); Elkin-Koren, *supra* note 187; Andrew Hetherington, *Constitutional Purpose and Inter-Clause Conflict: The Constraints Imposed on Congress by the Copyright Clause*, MICH. TELECOMMUNICATIONS & TECH. L. REV. (forthcoming 2003); Mark A. Lemley & Eugene Volokh, *Freedom of Speech and Injunctions in Intellectual Property Cases*, 48 DUKE L.J. 147, 189 (1998); Lawrence Lessig, *Copyright's First Amendment*, 48 UCLA L. REV. 1057 (2001); Eugene Volokh & Brett McDonnell, *Freedom of Speech and Independent Judgment Review in Copyright Cases*, 107 YALE L.J. 2431 (1998); Rubenfeld, *supra* note 20.

[416] *See* Neil Weinstock Netanel, *Asserting Copyright's Democratic Principles in the Global Arena*, 51 VAND. L. REV. 217 (1998) [hereinafter Netanel, *Global Arena*] (assessing the relevance of copyright to developing democracies); Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283 (1996) [hereinafter Netanel, *Democratic Civil Society*] (presenting a comprehensive view of copyright's role in democratic governance); Neil Weinstock Netanel, *Locating Copyright Within the First Amendment Skein*, 54 STAN. L. REV. 1 (2001) (considering the appropriate First Amendment treatment of copyright law); Neil Weinstock Netanel, *Market Hierarchy and Copyright in Our System of Free Expression*, 53 VAND. L. REV. 1879, 1884 (2000) (arguing that concentration of media ownership may lead to "the disproportionate power of wealthy speakers and audiences to determine the mix of speech that comprises our public discourse"). For a critique of Netanel's work, and in

that play an integral role in democratic governance. It might thus seem that even if economic analysis suggests that overentry is likely to be a problem, these concerns would be swamped by democratic considerations. I do not question the importance of copyright to democracy, and many of Netanel's recommendations for copyright doctrine are consistent with an understanding of overentry. Nonetheless, I will argue that democratic considerations, though relevant to the resolution of some doctrinal issues, do not offer a strong challenge to a focus on demand diversion. This is so for two reasons, which I will explain in the two subsections that follow. First, the democratic and economic interests underlying copyright are likely for the most part to be aligned on issues of copyright policy. Second, to the extent that these interests diverge, there is reason to believe that a reduction in the number of works would have as significant democracy-enhancing as democracy-harming effects.

1. Democracy vs. Economics

Netanel suggests several related vehicles through which copyright fosters a democratic civil society. First, the dissemination of copyrighted works is "a fundamental building block of democratic association," facilitating "the exchange of information and ideas" in associations of like-minded individuals.[417] Second, copyright promotes education, allowing "citizens to articulate their interests" and draw upon existing knowledge and ideas. Third, "public communication . . . serves as an independent, critical component of civil society," providing "a locus of democratic discourse."[418] Fourth, copyright allows for "considerable independence from government administrators and private patrons who would otherwise meddle in expressive content."[419]

As all of these points suggest, deliberation is integral to democratic governance, and copyrighted works play important roles in such deliberation. The more difficult question is the extent to which in the absence of copyright, uncopyrighted works could serve much the same function. Democratic associations, for example, would have an incentive to communicate with their members even if third parties could copy the associations' newsletters. In a world without

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particular of his *Market Hierarchy* article, see Christopher S. Yoo, *Copyright and Democracy: A Cautionary Note*, 53 VAND. L. REV. 1933 (2000). My focus here will be on Netanel, *Democratic Civil Society*, *supra*.

[417] Netanel, *Democratic Civil Society*, *supra* note 416, at 348.

[418] *Id.* at 349.

[419] *Id.* at 352.

copyright, citizens would be at least as free to draw upon existing works and ideas, albeit on a smaller stockpile. Surely many forms of public communication would exist even in the absence of copyright, and indeed politically motivated speech might occupy a larger relative place, since profit is but one motivation for the production of such speech. And because free speech protection applies as much to uncopyrighted works as to copyrighted ones, those who create such works enjoy the same legal independence, if not an equal ability to make a living by engaging in speech. The volume of works on issues of public concern is so vast that even if copyright were abolished, there would likely remain a very large number of works to serve as foundations for democratic deliberation, far more than any individual could read, even if a fraction of the previous total. Academics and think tanks, after all, do not create work primarily for profit, and some form of press would likely exist even without copyright protection.[420]

Of course, I do not mean to suggest that the world without copyright would be better than the world with it. Netanel succeeds in convincing at least me that democracy would be relatively impoverished in a world without copyright, especially in emerging democracies,[421] and I suspect that democratic discourse would be far less vibrant in the United States if speech were limited to those who had a noneconomic motive to engage in it. But the difficulty of establishing an unequivocal democratic case for the existence of copyright at all should make us suspicious of any doctrinal recommendations that operate primarily on the margins. It is one thing to point out copyright's importance to democracy, quite another to suggest that a marginal decrease in the number of works produced would impinge on democratic deliberation. The question is whether at the margins economic and democratic considerations point in opposite directions, and while Netanel seems to imply that they might, his examples do not clearly demonstrate this.

Consider, for example, Netanel's discussion of the copyright term.[422] Netanel argues that neoclassical economics "lends unreserved support to the lengthened copyright term," because neoclassical economists believe that "broad, fully transferable property rights are the best mechanism for putting existing works of authorship to their most socially valued uses."[423] As a result, Netanel writes, neoclassical economists would favor copyright protection at least until the

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[420] Breyer, *supra* note 12, assesses the extent to which such first-mover advantages might be sufficient.
[421] *See* Netanel, *Global Arena*, *supra* note 416.
[422] I consider the copyright term further *supra* Part I.B.4.
[423] Netanel, *Democratic Civil Society*, *supra* note 416, at 368.

social benefit of a copyrighted work was less than the cost of obtaining permission for that work.[424] The democratic paradigm, by contrast, would "support a richer vision of the public domain," recognizing that "works should become a part of our common cultural heritage because they have considerable social value, not simply because of market failure."[425] The democratic paradigm, however, should have no preference between the private and public domains as such. Rather, Netanel's analysis suggests that democratic theorists, like economists, should value both the production of new works and the distribution of existing works. If the neoclassical economists are correct in seeing property rights as "putting existing works of authorship to their most socially valued uses," then Netanel's insistence that the works be placed in the public domain nonetheless is perverse. Of course, the neoclassical economists might be wrong, but that is an argument on the economists' own terms.[426]

Similarly, consider Netanel's position on "personal uses," such as reading, listening to, or copying existing works, in the context of digital works.[427] Netanel rejects, perhaps rightly so, both the neoclassical economists' view that strong property rights in copyright owners will optimize "achieve efficient resource allocation" and the minimalists' view that all free use tolerated in the hard copy world should be allowed as well in cyberspace.[428] Netanel explains that "the democratic paradigm eschews the neoclassicist principle" while seeing "no reason to cling to hard copy distinctions in the digital network environment,"[429] and that "the democratic paradigm would not support author and publisher appropriation of a greater portion of the consumer surplus than is necessary to support self-reliant and diverse authorship."[430] But Netanel gives no explanation of why the amount "necessary to support self-reliant and diverse authorship" should be different from the optimal amount from an economic perspective. Indeed, the arguments that he provides fall well within the ambit of traditional welfare economics. For example, he claims that collective licensing organizations "are plagued by problems of

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[424] *Id.* (citing Landes & Posner, *supra* note 71, at 361-62).

[425] *Id.* at 368-69.

[426] Rubenfeld makes a similar point, though not directly in response to Netanel's argument. *See* Rubenfeld, *supra* note 20, at 21 ("If copyright law gets the economics right, speech will be maximally incentivized, and copyright will therefore be constitutionally unobjectionable. From this point of view, the policy analysis is the First Amendment analysis.").

[427] Netanel, *Democratic Civil Society*, *supra* note 416, at 371-76.

[428] *Id.* at 372-73.

[429] *Id.* at 373.

[430] *Id.* at 375.

monopoly power and pricing,"[431] quintessentially economic problems. That these problems have ramifications for democratic governance does not mean that the democratic balance would be any different from the economic one.

Netanel's argument might be stronger if he sought to identify where economic interests and democratic ones diverge. Economics is concerned with both the production of copyrighted works and their distribution, and Netanel is right to emphasize that both the production and distribution of copyrighted works are important for democratic purposes as well. What he needs to show to make the democratic paradigm significant is not that existing economic arguments ignore or overemphasize distribution or production, but that an aggregation of consumer and producer welfare is insufficient to capture the social optimum. Perhaps copyrighted works have, in addition to direct effects on the wealth and utility of consumers and producers, third-party effects, for example by enriching public discourse even among those who have not purchased the work. If this is so, then the balance that economics strikes on a particular copyright issue between production and distribution might be different from what democratic theory would strike. An economist could correctly respond that this is just an example of a market failure, but at least an advocate of the democratic paradigm could retort that conventional economic tools offer no useful models for understanding or combating such a failure.

Netanel comes closest to making an argument about third-party effects in assessing the scope of the derivative right. "Given copyright owners' propensity to private censorship and systematic ability to demand supracompetitive license fees, copyright owners' expansive control over transformative uses unduly stifles the creative reformulation of existing expression," Netanel argues.[432] The point about license fees is within the ambit of economics, but the censorship point may not be. A copyright owner's antidissemination motive may optimize consumer and producer welfare at the expense of potentially useful expression,[433] and the democratic interest in producing criticism sometimes may be sufficiently strong to trump economic concerns about wasteful rent dissipation. This is an important caveat relevant to particular doctrinal issues,[434] but it cannot form the basis for a broader attack on the point that

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[431] *Id.* at 376.

[432] *Id.* at 378.

[433] *See, e.g.*, LANDES, *supra* note 157, at 15 (noting that copyright holders may voluntarily license transformative uses of their work only "if they approve of the way their images are used").

[434] *See supra* Part I.B.2.c (discussing parody).

there may be overentry in copyright markets. The example is anomalous, because the production goal of maximizing incentives to produce and the distribution goal of bringing a range of copyrighted works to consumers are in alignment with each other though not necessarily with economic considerations more broadly.

The derivative right is thus a useful example of how democratic considerations might matter, but it tells us little about how to resolve cases in which both economic analysis and the democratic paradigm seek to achieve some optimal tradeoff between the production and distribution goals. This Article's observation that the production goal might in fact point in the other direction, suggesting that the number of works may be in excess of the optimal number, does not offer an escape from the dilemma. Many of the doctrinal issues that Part I considered involve situations in which a change would both decrease the number of works and increase distribution. Even if democratic theorists would lament any decrease in the number of works, the attendant increase in distribution might not be worth it. Indeed, Netanel's emphasis on "diverse authorship"[435] would suggest that he should be relatively indifferent about any reductions in the number of works if indeed demand diversion is pervasive.

Might a democratic theorist, however, offer an argument for production over distribution? One might argue that the third party effects of copyrighted works are so great that production is far more important than distribution. For example, one might argue that critical commentary about the government has substantial value independent of how widely it is distributed, for example because the most relevant decisionmakers are likely to read it. Such arguments seem plausible, but they are merely another form of the informational externality arguments that I have already addressed.[436] The same response is then applicable, that if a policy goal is to increase human knowledge, copyright seems an inefficient vehicle. The point, however, becomes even clearer once we recognize the tradeoff between production and distribution inherent in most copyright issues. Although we cannot eliminate the possibility that a different resolution of this tradeoff might be appropriate given a democratic rather than an economic perspective, there is as yet no democratic criterion that would allow us to assess which way the distinction cuts. A reasonable presumption then is that democratic benefits are roughly

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[435] Netanel, *Democratic Civil Society*, *supra* note 416, at 375.
[436] *See supra* Part III.A.2.a.

proportional to social welfare. Perhaps a democratic theorist might argue that producer surplus should be of less interest than consumer surplus, but Netanel appropriately emphasizes the value of a "self-reliant" productive sector.[437] In any event, as I have argued, the attention that product differentiation pays to producer surplus need not be out of concern for producers per se, as policy levers may allow reallocation between producers and consumers.[438]

2. *Too Many Works?*

Even if there were no tradeoff between production of new works and distribution of existing works in copyright law, there is substantial reason to doubt that democracy would be impoverished if there were fewer works, holding constant the extent to which works are distributed. One point is simply that most works don't matter much for democracy. Democratic considerations are presumably more important in some areas than in others, and copyright law explicitly recognizes the particular importance of certain types of speech.[439] Netanel asserts that copyright's role in democratic civil society is applicable not only to works specifically concerning "matters of political or social importance," but also to "creative works" and "works of popular culture."[440] Art and popular culture are undoubtedly important democratic forces, but democratic considerations seem less salient with respect to the significance of a college football broadcast than with respect to the publication of a news magazine that might reach approximately the same number of people. Moreover, any attempt to assess normatively whether the effects on culture of marginal changes in copyright doctrine would be for better or for worse is impossible. It does seem fair, though, to conclude that the effects would be small. Our public discourse was not obviously less "rambunctious" and "effervescent" in the past than today,[441] even if the total number of copyrighted works created annually was lower then.[442]

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[437] Netanel, *Democratic Civil Society*, *supra* note 416, at 288.

[438] *See supra* text accompanying notes 364-365.

[439] *See* Part I.B.2.b (discussing fair use).

[440] Netanel, *Democratic Civil Society*, *supra* note 416, at 350. Netanel explains, "Our public discourse … is part entertainment, but as it entertains, it often reveals contested issues and deep fissures within our society, just as it may reinforce widely held beliefs and values." *Id.*

[441] These are words that Netanel uses to describe our popular culture, but he makes no explicit claim that the quantity of works has a meaningful effect on the quantity of public discourse. *Id.* at 350.

[442] The one relevant caveat to this is that the growth of the Internet has created an entire new form of discourse. But the Internet too seems to advance the case, as recent changes in the expanse of the Internet, whether as a result of the dot-com bust or as a result of the ever-increasing number of pages, may have made it more useful, but hardly can be said to have made it a less powerful or productive cultural force.

Even with respect to works of obvious social or political import, however, there is at least some reason to believe that public discourse might be better if there were fewer copyrighted works. In *Republic.com*, Cass Sunstein laments the potential of the Internet to increase group polarization and lessen shared experiences.[443] Increasingly, Sunstein observes, technology fuels "the growing power of consumers to filter what they see."[444] In a well-functioning democracy, Sunstein argues, citizens both have shared experiences and are "exposed to materials that they would not have chosen in advance."[445] Public forums ensure that "[p]eople will get a glimpse, at least, of the lives of others," as well as "of the arguments being made by people with a particular point of view."[446] In contrast, if citizens' views are formed by encounters with others who are initially like-minded, they not only are unlikely to change their views, but moreover "people are likely to move toward a more extreme point in the direction to which the group's members were originally inclined."[447]

This group polarization phenomenon presents the danger that too many works may threaten democratic values. If liberals watch CNN while conservatives watch Fox News, if liberals read the *Washington Post* while conservatives read the *Washington Times*, and if liberals listen to NPR while conservatives listen to Rush Limbaugh, the chance for democratic interaction, let alone consensus, is reduced. Neutral media, of course, would not solve the problem entirely. Even independent of media influences, Robert Huckfeldt and John Sprague have noted that Democrats tend to talk about politics with other Democrats, while Republicans tend to talk about politics with other Republicans.[448] As it becomes increasingly easy to choose not only a form of media but also a particular channel or publication, however, the problem conceivably could get worse. Similarly, the more books there are on education reform, the environment, criminal justice, or any other topic, the greater the chance that someone will be

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[443] CASS R. SUNSTEIN, REPUBLIC.COM (2001).

[444] *Id.* at 8 (emphasis omitted).

[445] *Id.* at 8-9.

[446] *Id.* at 33.

[447] *Id.* at 65. Sunstein has explored this phenomenon of "group polarization" in several additional works. *See, e.g.*, David Schkade, Cass R. Sunstein, and Daniel Kahneman, *Deliberating About Dollars: The Severity Shift*, 100 COLUM. L. REV. 1139 (2000); Cass R. Sunstein, *Deliberative Trouble? Why Groups Go to Extremes*, 110 YALE L.J. 71 (2000); Cass R. Sunstein, *Why They Hate Us: The Role of Social Dynamics*, 25 HARV. J.L. & PUB. POL'Y 429 (2002).

[448] *See* ROBERT HUKFELDT & JOHN SPRAGUE, CITIZENS, POLITICS, AND SOCIAL COMMUNICATION: INFORMATION AND INFLUENCE IN AN ELECTION CAMPAIGN (1995).

able to find one that supports her preexisting conceptions on the topic, however complex these preconceptions might be.

I do not mean to conclude that a greater number of copyrighted works necessarily harms democracy. Sunstein recognizes one reason that they might not, that "enclaves" of like-minded individuals might produce a broader range of ideas that ultimately challenge even those outside the particular enclaves.[449] Another reason might be one that should by now be familiar, that marginal effects may be opposite from the gross effects. Just as the likelihood that we are better off with existing copyright than with no copyright does not mean that a shrinking of copyright scope is necessarily bad, so too might a small increase in the number of works decrease group polarization. It seems unlikely that the number of media sources would decline sufficiently that the public would not continue to have a choice among liberal and conservative outlets. Perhaps marginal books therefore will be those that tend to take a middle position, since the first books may tend to be more extremist.

The democratic effects, like the economic ones, are likely to be small. Technological and sociological changes affecting group polarization will probably swamp any effects from copyright law. Similarly, voter ignorance may be a substantial problem for democracy, but education is far more likely than copyright to give any hope of a solution.[450] There are, after all, plenty of existing works, from sophisticated textbooks on economics to far simpler descriptions of how government works, that would alleviate ignorance if only people would read them.[451] That effects are uncertain and small, of course, does not make the issue irrelevant. After all, the economic ramifications of changes in copyright law are perhaps almost as difficult to anticipate as the political ones, and whether marginal changes in copyright law occur will not have drastic economic ramifications either. Moreover, if Jed Rubenfeld is right that the First Amendment should be read as providing a right to imagine that trumps any economic considerations of copyright,[452] then no balancing between economic and constitutional considerations is even

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[449] SUNSTEIN, *supra* note 443, at 75-79.

[450] *See generally* MICHAEL X. DELLI-CARPINI & SCOTT KEETER, WHAT AMERICANS KNOW ABOUT POLITICS AND WHY IT MATTERS (1997) (assessing the problem of voter ignorance).

[451] One sign that the number of works may be of little importance relative to how those works are disseminated is that television networks' decisions about which stories to report have significant effects on viewers' conceptions of what the important issues are. *See* Shanto Iyengar et al., *Experimental Demonstrations of the "Not-So-Minimal" Consequences of Television News Programs*, 76 AM. POL. SCI. REV. 848 (1982).

[452] Rubenfeld, *supra* note 20, at 40 (arguing that imagination should be protected even if the right causes harm).

appropriate. In the end, perhaps the most that can be said then is that democratic theory is not so clear that we should cease paying attention to economics. This Article seeks to clarify the economics, and democratic theory offers no reason to think an economic point about product differentiation is more dangerous than any other economic consideration.

IV. CONCLUSION

This Article has challenged the standard law-and-economics account of copyright by relaxing the assumption that copyrighted works are goods produced in perfectly competitive markets. Copyrighted works are better understood as differentiated products, and this understanding highlights that many copyrighted works are similar to other copyrighted works, and that part of the incentive for the production of a new work is that some consumers will purchase the new work instead of another work. Such demand diversion may lead to overentry in markets for copyrighted goods. Copyright law cannot prevent entry into such markets, but it blocks the most rent-dissipating examples of demand diversion, for example through a broad derivative right. Whether or not overentry is systematic, the existence of demand diversion suggests that marginal works should have a relatively small weight in the policy calculus when other copyright values are at stake. This provides support to copyright's broad fair use rights and possibly to even broader rights to engage in noncommercial copying than courts have recognized.

These suggestions are tentative, relying on theoretical rather than empirical considerations. The tension between production of new works and dissemination of existing ones is already quite complex, and the consideration of demand diversion and rent dissipation adds another wrinkle. It also, however, points to a literature that may allow copyright theory to become more scientific. The recent empirical turn of industrial organization scholarship[453] and development of both data sources[454] and tools make the prospect of careful welfare analysis a plausible one. Already industrial organization scholars have analyzed entry into the markets for yellow pages directories[455] and radio broadcasting.[456] We should not have too much confidence

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[453] This turn has been called the "new empirical industrial organization." *E.g.*, www.aw.com/info/waldman_jensen/book.html (advertising a new edition of an industrial organization textbook by emphasizing its treatment of the "new empirical industrial organization).

[454] One new source that will be useful if made available to scholars is Nielsen's Bookscan data tracking retail sales of over 140,000 titles. *See* http://www.booktrack.co.uk (discussing the data source).

[455] *See* MARC RYSMAN, COMPETITION BETWEEN NETWORKS: A STUDY OF THE MARKET FOR YELLOW PAGES (Boston Univ.

that an answer will come shortly. A recent cutting edge industrial organization article with a similar ambition analyzed the social welfare effects of the introduction of the minivan,[457] and the diversity of copyrighted works is likely to make the analogous project considerably more challenging.[458] Perhaps this Article's safest claim is that the most significant future research on copyright will come not from legal scholars borrowing broad generalizations of economic theory, but from economists seeking to combine more nuanced theory with ever more sophisticated econometric tools.

Industry Studies Project Working Paper No. 104, Feb. 12, 2002). Yellow pages markets involve complexities that do not always exist in markets for other copyrighted goods, particularly the existence of advertising and the resulting existence of network externalities.

[456] *See* Steve Berry & Joel Waldfogel, *Free Entry and Social Inefficiency in Radio Broadcasting*, 30 RAND J. ECON. 397 (1999). Berry and Waldfogel find a large business-stealing effect but note that the overentry from the producers' perspective might be optimal if consumers' valuations of listening to radio are sufficiently high.

[457] *See* AMIL PETRIN, QUANTIFYING THE BENEFITS OF NEW PRODUCTS: THE CASE OF THE MINIVAN (NBER Working Paper No. 8227, Apr. 2001).

[458] One challenge is that a welfare analysis requires data on revenue and costs. *See* Berry & Waldfogel, *supra* note 456, at 398 ("To calculate the optimal number of firms in an industry, one needs information on revenues and costs. In particular, one needs to know how revenue per firm changes with entry."). An additional challenge is that many attributes of consumer products are unobservable or at least not easily coded, and it is thus difficult to determine the extent to which products are substitutes for one another. *See, e.g.*, Daniel A. Ackerberg & Marc Rysman, Unobserved Product Differentiation in Discrete Choice Models: Estimating Price Elasticities and Welfare Effects (Feb. 4, 2002) (unpublished manuscript, on file with author) (considering some of the econometric difficulties associated with unobserved product differentiation and biases that can result in attempts at estimation). A recent econometric technique that seeks to avoid this problem is to calculate the covariance of utility for different products across consumers. *See, e.g.*, Ronald L. Goettler & Ron Shachar, *Spatial Competition in the Network Television Industry*, 32 RAND J. ECON. 624 (2001) (using this technique in assessing competition by television networks for viewers). A similar technique is likely to be helpful in analyzing markets for books, but the large number of books relative to the number of television shows on networks at any given time may make the project far more challenging.

V. APPENDIX

This Appendix reports the results of a simulation study of entry into markets for copyrighted works.[459] The simulation is designed to reveal how the values of different parameters, reflecting both the economics of the particular market and the possibility of copying, affect the degree of overentry or underentry into the market, as well as total social welfare.

The following is a step-by-step description of the algorithm for the simulation. Italics are used to indicate parameters that were varied to determine the effect on the outcome.

Step 1: Consumer entry. A group of *num_consumers* representative consumers is placed in a *dim*-dimensional address space. Each representative consumer represents 10,000 actual consumers, so a purchase by a representative consumer counts 10,000 times in the calculations of producer and consumer surplus that will be reported below. A random number generator is used to assign a variety of characteristics to each representative consumer, as follows:

Location. Each representative consumer is assigned to a random location in the address space. Each dimension in the address space is bounded by 0 and 10. The random number generator produces a uniform distribution among those values, and the selection of each dimension is independent. For example, if *dim* = 2, then a representative consumer is as likely to be positioned at (1.10, 1.10) as at (9.90, 5.60) or (1.34, 8.56).

Gross consumer surplus. Each representative consumer is randomly assigned a gross consumer surplus from a uniform distribution between *min_surplus* and *max_surplus*. A representative consumer's gross consumer surplus is the maximum amount that the representative consumer will pay for a work, counting both dollar costs and transport costs.

Transport cost. Each representative consumer is randomly assigned a transport cost from a uniform distribution between *min_transport* and *max_transport.* The transport cost reflects how costly in dollars it is to a consumer to purchase a work located in product space at a point some distance from the consumer's current location. For example, if a representative consumer's gross consumer surplus is 10.0, and the representative consumer's transport cost is 2.0, then the consumer will be willing to spend up to 4.0 to purchase a work located at a distance of 3.0 from the consumer, assuming there is no better deal elsewhere.

Ability to copy. Each representative consumer is randomly determined to be capable of copying works or incapable of doing so. The probability that a consumer is assigned to the group that is capable of copying works is *percent_can_copy*.

Quality concern. Each representative consumer who is assigned to the group that is capable of copying works is randomly assigned a "quality concern" from a uniform distribution between 0 and *max_quality_concern*. This parameter interacts with a separate parameter, *quality_degrade*, which is selected for the entire simulation. These parameters operate to affect how much gross consumer surplus a representative consumer obtains from a copy of the work. Gross consumer surplus is multiplied by (1 – quality concern * (1 – *quality_degrade*)). For example, suppose a representative consumer's gross consumer surplus is 10.0.

[459] The complete C++ source code for the simulation, as well as the full output from execution of the simulation, is available from the author.

Then, if this representative consumer's quality concern is 1.0 and *quality_degrade* is 0.8, then the gross surplus that a consumer would obtain from the copy is only 8.0. If the representative consumer's quality concern were 0.5, keeping all other parameters the same, then the gross surplus that a consumer would obtain from the copy is 9.0. Thus, the higher *quality_degrade*, the greater the reduction a copy produces in gross consumer surplus for consumers in general, and the higher quality concern, the greater the reduction in gross consumer surplus for a particular consumer.

Step 2: Producer entry. A producer enters. The producer's work is placed at a random point in address space, using the same algorithm used to place the representative consumers. To enter, the producer pays *fixed_cost*.

Step 3: Producer price optimization. After entry, the producer sets an initial price by anticipating the choices of the representative consumers. The producers have full information about the representative consumers and about other producers' locations and prices. (Thus, the producers perfectly anticipate the consumer purchases in Step 5, below.) No producer will ever set a price lower than *marginal_cost* dollars, which will be charged to the producer for each purchase. In setting a price, the producers consider how many consumers will decide to purchase from the producer at each possible price. For simplicity, however, each producer assumes that the other producers will not change their prices. That is, no producer considers whether a change in its own price might lead one of its rivals to change its prices in turn.

Step 4: Repeated producer entry. Steps 2 and 3 are repeated four times, so that producers enter in groups of five before the consumers make their purchasing decisions.

Step 5: Tentative consumer purchases. Each representative consumer decides whether to make a purchase, a copy, or neither. To do this, the representative consumer first calculates the net surplus that it would obtain from purchasing from each producer. The net surplus is equal to gross consumer surplus – distance * transport cost – price. If the representative consumer is one who is randomly assigned to the group that can copy, then the representative consumer also calculates the net surplus that it would obtain from copying, taking into account the *cost_of_copying*, which reflects factors such as the time cost of downloading or duplicating copyrighted works. The net surplus from copying is equal to gross consumer surplus – distance * transport cost – *cost_of_copying.* If the net surplus from all possible copying and purchasing is less than zero, then the consumer will neither purchase nor copy any work (and thus receives a net consumer surplus of zero). Otherwise, the consumer maximizes net surplus in determining whether to purchase or copy and from whom.

Step 6: Reoptimization of producer prices. Based on these tentative consumer decisions, producers reoptimize their prices, as in Step 3. Producer decisions may change in part because of the entry of other producers.

Step 7: Consumer purchases. Consumers make their purchase decisions, as in Step 5. After these purchase decisions are made, the simulation calculates total producer and consumer surplus. The total producer surplus aggregates revenue from all consumers (10,000 per representative consumers), less fixed and marginal costs. The total consumer surplus aggregates the net consumer surplus of all consumers, according to the formulas indicated in Step 5. The simulation also calculates the marginal producer surplus, i.e. the producer surplus of the last producer to enter.

Step 8: Repeat. Steps 2 through 7 are repeated, until a total of 150 producers have entered.

Step 9: Iterate. Steps 1 through 8 are repeated, so that the simulation is run a total of 200 times. The simulation then calculates the optimal entry and equilibrium entry. The optimal entry is the number of producers that produces the highest total surplus. The equilibrium entry is the largest number of producers for which the marginal producer surplus is greater than zero. Note that because producers enter five at a time (to conserve computer processing power) the equilibrium and optimal levels of entry will be reported as multiples of five.

Before reporting the results, there are several caveats worth mentioning. Even if we could ensure that each parameter represented the appropriate value for a particular market, the simulation model as a whole contains a number of significant simplifications. In a real market, variables like gross consumer surplus might not be distributed uniformly. Fixed and marginal costs might vary from producer to producer, and higher cost works might tend to be of higher quality. Instead of purchasing zero or one works, each consumer in a real market may produce any number of works, and a simulation taking that into account would need to feature a variety of parameters, including parameters reflecting the consumer's income, taste for the type of work in general, and taste for diversity of works. Producer pricing might not be based on complete information. Producers are likely to consider the price responses of their rivals to their pricing decisions. Moreover, while this simulation assumes one work per producer, a more realistic simulation would recognize that each producer might produce a number of works, and the relatively small number of producers to works might dampen price competition. The purpose of this simulation, however, is not to produce definitive conclusions, but to provide a richer framework than is possible within the confines of a particular economic model and to draw tentative conclusions about the effects of altering different parameters.

The following table reflects a single execution of the simulation with a baseline set of parameters. These parameters were selected in part because they seemed both computationally manageable and at least roughly reasonable for markets for typical copyright goods, and in part because in this combination, optimal and equilibrium entry were approximately equal. The purpose of this table is thus not to determine whether entry is excessive or inadequate; both results can be achieved with adjustment of different parameters. Rather, it is to provide a baseline from which to assess changes in different parameters. In particular, this baseline will help test the theory that even if entry is optimal, policy changes may still improve social welfare. Of course, any conclusions could be different with an alternative baseline, and with the number of parameters in this model, it is impossible to test all possibilities. I have, however, not found the principal conclusions to vary with reasonable changes in the parameters.

Table 1: Baseline simulation

The parameter values for this simulation are as follows: num_consumers = 70, min_surplus = 5, max_surplus = 45, min_transport = 0.5, max_transport = 4.5, max_quality_concern = 1.0, fixed_cost = 45000, marginal_cost = 3.0, cost_of_copy = 3.0, quality_degrade = 0.7, percent_can_copy = 0.4, dim = 4. The columns, from left to right, are as follows: # indicates the number of producers, PS indicates total producer surplus per potential consumer, CS indicates total consumer surplus per potential consumer, TS indicates total surplus per potential consumer, S% indicates the percentage of potential consumers who make purchases, C% indicates the percentage of potential consumers who copy, AP indicates the average price paid by consumers who make purchases, and MPS indicates the producer surplus of the last producer to enter. All of these numbers are averages across 150 iterations. In this simulation, optimal entry and equilibrium entry both turn out to be 35 firms.

#	PS	CS	TS	MPS	S%	C%	AP	#	PS	CS	TS	MPS	S%	C%	AP
5	0.568	1.01	1.58	0.114	0.133	0.0472	9.99	80	-1.81	3.84	2.04	-0.0219	0.550	0.0427	9.09
10	0.634	1.54	2.18	0.0745	0.207	0.0509	9.33	85	-2.05	3.92	1.88	-0.0151	0.561	0.0414	9.11
15	0.614	1.97	2.58	0.0526	0.263	0.0539	9.10	90	-2.28	3.99	1.71	-0.027	0.572	0.0404	9.15
20	0.498	2.24	2.74	0.0344	0.305	0.0531	8.93	95	-2.53	4.05	1.52	-0.022	0.583	0.0396	9.16
25	0.362	2.47	2.84	0.0165	0.340	0.0501	8.84	100	-2.77	4.10	1.33	-0.0237	0.594	0.0394	9.19
30	0.234	2.68	2.92	0.0094	0.371	0.0499	8.87	105	-3.03	4.16	1.13	-0.0278	0.604	0.039	9.17
35	0.0744	2.87	2.94	0.0126	0.399	0.0481	8.86	110	-3.28	4.21	0.939	-0.0262	0.612	0.0382	9.22
40	-0.0915	3.00	2.91	-0.00591	0.421	0.0476	8.92	115	-3.56	4.27	0.717	-0.0357	0.620	0.0371	9.20
45	-0.252	3.13	2.88	0.00084	0.442	0.0479	9.01	120	-3.79	4.33	0.534	-0.0144	0.629	0.0366	9.25
50	-0.463	3.26	2.80	-0.0119	0.463	0.0473	8.97	125	-4.04	4.37	0.330	-0.0253	0.638	0.0359	9.28
55	-0.677	3.40	2.72	-0.00959	0.482	0.0469	8.96	130	-4.30	4.41	0.113	-0.027	0.645	0.0355	9.30
60	-0.883	3.51	2.63	-0.0189	0.498	0.0469	9.00	135	-4.57	4.46	-0.110	-0.0361	0.652	0.0351	9.31
65	-1.11	3.59	2.48	-0.0159	0.512	0.0459	9.01	140	-4.85	4.51	-0.342	-0.0404	0.659	0.0347	9.31
70	-1.37	3.68	2.31	-0.0141	0.525	0.0451	8.98	145	-5.10	4.56	-0.540	-0.0369	0.667	0.0334	9.34
75	-1.57	3.76	2.19	-0.0203	0.538	0.0436	9.06	150	-5.36	4.60	-0.759	-0.0306	0.673	0.0326	9.37

This simulation reflects the central point of this Article, that the business stealing phenomenon means that marginal works will be of less economic importance than inframarginal works. (All parameter values that I have experimented with produce the same basic result.) This can be seen by considering changes in the number of producers on producer surplus, consumer surplus, and total surplus. As more producers enter the market, consumer surplus always rises, because consumers always benefit from increases in the number of works, but each increase is smaller than the last. As the number of producers rises from 0 to 5 to 10, consumer surplus increases from 0 to 1.01 to 1.54, but when the number of producers rises from 30 to 35, consumer surplus rises from 2.68 to just 2.87. At the same time, however, producer surplus quickly begins to fall, with a decline from 0.634 to 0.614 as the number of producers falls from

10 to 15. These numbers reflect the sum of all producers' surplus, so the benefit of entry to the 11th through 15th producers are less than the costs of such entry to the 1st through 10th. (Note that both the consumer and producer surplus numbers are expressed relative to a constant, the total number of potential consumers in the market, i.e. *num_consumers* * 10,000.) The total surplus (sum of producer and consumer surplus) begins to fall after 35 producers have entered, and the optimal number of firms is thus 35. The column indicating marginal producer surplus shows that the equilibrium number of firms is 35 as well.

The remaining columns of Table 1 further illustrate business stealing. Note that the percentage of consumers who make purchases rises dramatically initially as more producers enter, but then levels off. With 5 producers, 13.3% of potential consumers make purchases; with 10, 20.7%. As the number of producers increases from 30 to 35, the percentage of consumers making purchases rises from 37.1% to just 39.9%. Interestingly, the percentage of consumers who choose to copy in this model initially rises as the number of producers increases but then falls. The initial rise reflects that the cost of copying becomes increasingly worth bearing as consumers find works that are more precisely what they seek. The subsequent fall reflects that increased competition makes purchasing more attractive, and thus some consumers decide to purchase instead of copying. The change in price is reflected in the average price column, which generally falls with increased numbers of producers, though at times the price rises. Price increases may be possible because once a producer loses its marginal customers, it may raise its price so that it can obtain more revenue from its inframarginal customers. (Idiosyncratic deviations from trend may also reflect noise attributable to the random element of the simulations.) It is striking, however, that the average price charged to purchasing consumers never changes very much, staying always between $8.84 and $9.99.

Let us now consider how changing various parameters of the model affect the results. Consider, for example, Table 2, which illustrates how changes in the principal parameters defining representative consumers affect consumers. Each of the parameters whose value is altered is represented in reverse print, along with the different values of that variable simulated. All other parameters besides the single variable tested are set to the same values as in the baseline simulation in Table 1.[460] In the rows beneath the top row, the consumer surplus, producer surplus, and total surplus associated with the equilibrium level of entry are reported. Each of these values is provided for ease of comparability in terms of the number of potential consumers, which is constant for all parameters except, of course, for alterations in the num_consumers variable. Below total surplus is listed the maximum total surplus, i.e. the total surplus associated with optimal rather than equilibrium entry. Finally, the last three rows indicate the optimal number of firms, the number of firms that enter in equilibrium, and the difference between these two numbers (positive for excess entry or negative for insufficient entry).

[460] In some columns, the parameter is set to the same value as in the baseline simulation. Nonetheless, because the simulations were generated anew to produce these tables, and thus the numbers reported here may differ slightly from those in Table 1 as a result of random factors.

Table 2: Effect of changes in consumer parameters

This table illustrates the effect of changes in the number of consumers, the maximum consumer surplus (the higher end of the consumer surplus range from which any given consumer's surplus is selected), and the maximum transport costs (the higher end of the range from which any given consumer's transport cost is selected).

num_consumers	40	50	60	70	80	90	100	110	120	130
Consumer surplus	1.34	2.00	2.04	2.49	2.75	3.18	2.80	3.05	3.37	3.63
Producer surplus	0.12	-0.11	0.16	0.06	-0.09	-0.30	0.26	0.18	0.03	-0.01
Total surplus	1.46	1.89	2.20	2.55	2.66	2.88	3.06	3.23	3.40	3.62
Max total surplus	1.48	1.90	2.20	2.55	2.66	2.96	3.07	3.24	3.43	3.65
Optimal entry	15	15	20	30	40	40	50	55	60	70
Equilibrium entry	10	20	20	30	40	55	40	50	65	75
Excess entry	-5	5	0	0	0	15	-10	-5	5	5
max_surplus	5	15	25	35	45	55	65	75	85	
Consumer surplus	0.00	0.00	0.39	1.44	2.37	3.64	4.63	6.72	8.02	
Producer surplus	0.00	0.00	0.09	-0.04	0.06	-0.08	0.28	-0.97	-0.69	
Total surplus	0.00	0.00	0.47	1.40	2.43	3.56	4.91	5.75	7.34	
Max total surplus	0.00	0.04	0.55	1.40	2.43	3.59	4.94	6.27	8.00	
Optimal entry	0	5	10	20	30	40	45	65	70	
Equilibrium entry	0	0	5	20	30	45	55	100	115	
Excess entry	0	-5	-5	0	0	5	10	35	45	
max_transport	0.5	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5
Consumer surplus	14.60	12.00	9.56	7.74	5.81	4.94	3.81	3.11	2.23	1.72	1.63	1.28
Producer surplus	-0.40	-0.30	-0.15	-0.11	0.19	-0.17	-0.05	-0.13	0.26	0.19	0.05	0.13
Total surplus	14.20	11.70	9.42	7.64	6.00	4.77	3.76	2.99	2.49	1.91	1.68	1.41
Max total surplus	14.50	12.00	9.73	7.86	6.05	4.83	3.77	3.01	2.50	1.96	1.70	1.46
Optimal entry	30	40	45	45	50	45	40	35	30	25	25	20
Equilibrium entry	50	60	65	65	55	55	45	40	25	20	20	15
Excess entry	20	20	20	20	5	10	5	5	-5	-5	-5	-5

Table 2 confirms the intuitive connections between the variables defining representative consumers and the surplus enjoyed by consumers and producers. Increases in the number of consumers increase the consumer surplus enjoyed by each consumer, from 1.34 for 40 representative consumers (400,000 potential consumers total) to 3.63 for 130 representative consumers (1.3 million potential consumers total), and total surplus rises proportionately. The greater the number of consumers, the more producers will enter the market, thus increasing competition and decreasing the transport costs faced by consumers. Producer surplus, meanwhile, hovers near zero regardless of how many consumers exist, an expected result given that producers enter until the marginal producer surplus is zero. Similarly, increases in the maximum consumer surplus, and thus in the average gross consumer surplus, have dramatic effects on consumer surplus. This, of course, is true by definition, but the increases are more than proportional. An increase in the maximum surplus from 55 to 85 (and thus in the average gross consumer surplus from 30 to 60, since the minimum surplus is 5) results in a more than doubling of gross consumer surplus. Once again, this is because the additional purchasing by some consumers with higher gross surplus leads to greater entry, thus benefiting other consumers, and once again, producer surplus hovers near zero regardless. Finally, decreases in transport costs also increase consumer surplus while having little effect on producer surplus.

Table 3 assesses the effect of changes in the parameters determining the fixed cost of entry into a market for copyrighted work and the marginal cost of producing an additional unit of the work. As one would expect, higher costs of both forms, by decreasing purchases, decrease

the optimal level of entry, and consumer surplus falls accordingly. More interesting, however, is the effect of changes in marginal cost on whether there is underentry or overentry. As marginal cost rises, the degree of excess entry declines, and eventually there is insufficient entry. This provides some support for the proposition that excess entry is more likely to be a problem in a market with low marginal cost, such as a market for copyrighted works, than in one with high marginal cost. When marginal cost is low, there is little social need for additional entry, because a single work can be cheaply copied, but as long as there are rents to be gained from entry, producers will choose to enter the market anyway. Thus, with low marginal cost, business stealing is likely to be a more significant factor than with high marginal cost. A caveat here is that the changes in marginal cost simulated here are across a relatively small range, and thus this simulation may not provide an accurate assessment of whether there is overentry in markets where marginal costs are comparable to or greater than fixed costs.

Table 3: Effect of changes in cost parameters

This table illustrates the effects of changes in the fixed cost of entering a market for a copyrighted work and in the marginal cost of producing an additional unit of the work.

fixed_cost	0	10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000
Consumer surplus	4.06	4.15	3.98	3.50	2.88	2.28	2.04	1.37	0.90	0.84
Producer surplus	3.81	1.67	0.02	-0.56	-0.15	0.02	-0.07	0.13	0.25	0.18
Total surplus	7.87	5.83	4.00	2.94	2.73	2.30	1.97	1.50	1.15	1.01
Max total surplus	7.87	5.83	4.20	3.21	2.77	2.30	1.97	1.62	1.45	1.19
Optimal entry	150+	150+	85	45	40	25	20	20	15	10
Equilibrium entry	150+	150+	125	85	45	25	20	10	5	5
Excess entry	N/A	N/A	40	40	5	0	0	-10	-10	-5
marginal_cost	0	1	2	3	4	5	6	7	8	9
Consumer surplus	3.92	3.21	2.86	2.41	2.08	1.69	1.57	0.71	1.01	0.65
Producer surplus	-0.22	0.07	-0.07	0.02	0.04	-0.04	-0.10	0.19	0.05	0.08
Total surplus	3.70	3.29	2.79	2.43	2.12	1.65	1.48	0.90	1.05	0.73
Max total surplus	4.04	3.35	2.86	2.43	2.15	1.68	1.48	1.27	1.12	0.96
Optimal entry	40	30	35	30	30	25	20	20	20	15
Equilibrium entry	65	45	40	30	25	20	20	5	10	5
Excess entry	25	15	5	0	-5	-5	0	-15	-10	-10

Finally, Table 4 assesses the effect of changes in parameters related to copying. The table shows that increased potential for copying can increase social welfare. In the set of simulations for the *percent_can_copy* variable, optimal entry equaled equilibrium entry when 50 percent of consumers could copy. When 60 percent, 70 percent, or 80 percent of consumers could copy, there was insufficient entry, and yet total surplus increased. This establishes that some increase in copying can increase social welfare even in a market that has neither overentry or underentry and even if that copying might lead to underentry. The intuition is that broader copying increases consumer surplus, and the phenomenon of business stealing makes it more likely that this increase will be more than sufficient to offset any decrease in consumer surplus attributable to reduced entry. Of course, it does not establish that more copying necessarily will increase social welfare. Indeed, once 90 percent of consumers can copy, consumer surplus in this simulation falls dramatically. Moreover, changes in the *cost_of_copy* parameter have only modest effects on total surplus, and these effects are not consistent.

Finally, Table 4 also provides limited support for the proposition that some quality degradation in copying may be better than no quality degradation, because the quality degradation leads the consumers with the highest gross consumer surplus to purchase the product. When copying produces very little quality degradation, for example when *quality_degrade* = 0.90, total surplus is lower than when there is significant quality degradation, for example when *quality_degrade* = 0.40 or 0.50. The differences, however, are modest here as well, and no clear trend emerges from this data. The data on the *max_quality_concern* variable is still more difficult to interpret, with changes leading to relatively small, inconsistent effects. It is interesting, however, that total surplus has its lowest value when consumers have no concern about quality degradation from copying. This provides at least some support for the view that in our world, in which many consumers unquestionably do care about quality, a copyright regime that allows some copying but with some degradation in quality may be optimal. For example, a regime in which consumers can obtain analog copies but not digital copies of works could be more efficient than either a regime that successfully prevented all copying or one that enabled or tolerated some degree of perfect copying of digital works.

Table 4: Effect of changes in copying parameters

This table illustrates the effects of changes in parameters affecting whether consumers copy copyrighted works. The parameters reflect the percentage who have the technical ability to copy, the quality degradation from copying (including any decrease associated with psychic costs of having a copy rather than an original), the maximum concern that a consumer could have about quality, and the cost of making a copy.

percent_can_copy	0	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
Consumer surplus	2.08	2.47	2.34	2.55	2.28	2.35	2.47	2.74	2.60	1.97
Producer surplus	-0.09	-0.58	0.00	-0.17	0.16	0.08	-0.13	-0.16	-0.11	0.11
Total surplus	2.00	1.89	2.33	2.38	2.44	2.43	2.33	2.58	2.49	2.08
Max total surplus	2.37	2.38	2.42	2.49	2.46	2.43	2.37	2.58	2.59	2.55
Optimal entry	30	30	30	30	30	25	30	30	30	25
Equilibrium entry	55	60	40	40	25	25	25	25	20	10
Excess entry	25	30	10	10	-5	0	-5	-5	-10	-15
quality_degrade	0	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
Consumer surplus	2.22	2.21	2.40	2.39	2.30	2.59	2.54	2.54	2.12	2.08
Producer surplus	0.00	0.06	-0.31	-0.20	-0.01	-0.26	-0.29	-0.15	0.16	0.10
Total surplus	2.22	2.27	2.09	2.19	2.29	2.33	2.25	2.39	2.28	2.18
Max total surplus	2.38	2.39	2.32	2.34	2.41	2.45	2.36	2.41	2.37	2.46
Optimal entry	30	30	35	30	30	35	30	30	30	35
Equilibrium entry	45	45	50	45	40	45	40	35	20	15
Excess entry	15	15	15	15	10	10	10	5	-10	-20
max_quality_concern	0	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
Consumer surplus	1.85	2.21	2.43	2.05	2.00	2.48	2.26	2.11	2.63	2.24
Producer surplus	0.16	0.07	-0.03	0.08	0.15	-0.10	0.16	0.18	-0.10	0.15
Total surplus	2.01	2.28	2.40	2.13	2.15	2.39	2.41	2.29	2.53	2.40
Max total surplus	2.56	2.54	2.54	2.41	2.42	2.41	2.53	2.42	2.53	2.40
Optimal entry	30	30	35	35	30	30	30	30	30	35
Equilibrium entry	10	15	20	15	15	25	20	20	30	25
Excess entry	-20	-15	-15	-20	-15	-5	-10	-10	0	-10
cost_of_copy	0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
Consumer surplus	2.25	2.68	2.22	2.16	2.39	2.83	2.49	2.27	2.78	2.62	2.34
Producer surplus	0.19	-0.12	0.20	0.23	0.06	-0.36	-0.03	0.04	-0.57	-0.26	0.10
Total surplus	2.44	2.56	2.42	2.39	2.44	2.48	2.46	2.32	2.22	2.36	2.44
Max total surplus	2.53	2.56	2.53	2.48	2.48	2.52	2.46	2.32	2.47	2.49	2.45

Optimal entry	30	30	30	30	30	30	30	30	30	35	25
Equilibrium entry	20	30	20	20	25	40	30	30	50	45	35
Excess entry	-10	0	-10	-10	-5	10	0	0	20	10	10