Copyright Freeconomics

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I. INTRODUCTION

Technological and business-model innovations have wreaked Schumpeterian creative destruction on the traditional avenues of content[1] delivery and consumption. During the decade following the

1. As used throughout this Article, the term "content" refers to the types of creative works affected by the innovations described herein, not to all potentially copyrightable works. Broadly speaking, the relevant types are audio and audiovisual recordings, text-based works, and (some) visual works (i.e., the works that are relatively susceptible to reproduction and distribution). As technology advances, this list may well expand. At some point in the near future, for example, advances in 3-D printing may cause sculptural works to be added to this list. *See generally* Lisa Harouni, *A Primer on 3D Printing*, TED (Jan. 2012), http://www.ted.com/talks/lisa_harouni_a_

rise and fall of Napster, the content-based business community carried out a two-pronged deterrence-and-persuasion effort in an attempt to combat the dramatic downward pricing pressure created by the advent of zero-price, illegitimate content. This campaign attracted a torrent of debate among scholars and stakeholders, who variously decried the end of creativity,[2] heralded the end of copyright law,[3] worried that copyright owners would be left at the mercy of infringers,[4] and fretted that those same owners were acquiring too much control over their works.[5]

To a large extent, however, this ongoing debate has missed the forest for the trees.[6] The threats (or boons) posed by online content distribution, as well as the dangers (or merits) of the industry's attempt to stifle online copyright infringement, have been at the center of the legal conversation. Yet, in the meantime, content-industry trade groups have largely abandoned their deterrence-and-persuasion campaigns, and entrepreneurs and innovators have been busy devising and implementing business models aimed at competing directly with illegitimate offerings. On a wide scale, legitimate-content firms have incorporated a radical change into their delivery models: many now offer consumers pseudo-ownership control over legally licensed content at a price of $0.00.

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primer_on_3d_printing.html (overview of recent 3D-printing developments).

2. *E.g.*, Stan J. Liebowitz, *File Sharing: Creative Destruction or Just Plain Destruction?*, 49 J.L. & ECON. 1 (2006).

3. *E.g.*, Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 269 (2002); *see also* Paul A. David, *The End of Copyright History?*, 1 REV. ECON. RES. ON COPYRIGHT ISSUES 5, 7 (2004) ("[W]e are approaching the effective demise of . . . copyright . . . .").

4. *See, e.g.*, John Tehranian, *Infringement Nation: Copyright Reform and the Law/Norm Gap*, 2007 UTAH L. REV. 537, 538 ("Copyright maximalists . . . argue that the ease of digital reproduction has enabled piracy on a scale never before witnessed in human history . . . .").

5. *E.g.*, LAWRENCE LESSIG, FREE CULTURE: HOW BIG MEDIA USES TECHNOLOGY AND THE LAW TO LOCK DOWN CULTURE AND CONTROL CREATIVITY 8 (2004) ("For the first time in our tradition, the ordinary ways in which individuals create and share culture fall within the reach of the regulation of the law, which has expanded to draw within its control a vast amount of culture and creativity that it never reached before.").

6. A few notable exceptions aside. Professor Lastowka, for example, noted in 2007 that "the trend in open copyright is toward a price point of zero." Greg Lastowka, *Digital Attribution: Copyright and the Right to Credit*, 87 B.U. L. REV. 41, 54–55 (2007). Yet his observations were limited to the field of "open copyright," wherein "amateurs" make content available for "free." *Id.* at 47. What Professor Lastowka meant by "free" was, presumably, extremely low-cost content (i.e., content that required end users to expend only (low) fixed costs, near-zero variable costs, and opportunity costs in order to consume it). This Article employs a broader focus, including works that are "free" in the sense that they are offered at a price of zero but may require consumers to pay, e.g., attention costs due to advertisements. Generally, I will use the term "zero-price" to denote such content.

This sea change in favor of zero-price, *legitimate* content has ushered in an era of what I refer to as "copyright freeconomics."[7] This Article draws on an emerging body of behavioral economics and consumer psychology research to demonstrate that the downward shift from positive prices to zero prices holds extraordinary consequences for all content-market participants—producers, distributors, and consumers alike. In the face of the "magic" of zero prices, the neoclassical economic model that underpins modern U.S. copyright law[8] largely collapses. Consequently, the shift toward a freeconomic model carries with it sweeping implications for copyright law and discourse.

Copyright law must rebuild itself to adapt to this new reality. To effectively and efficiently incentivize the creation and distribution of original works in the era of "content abundance,"[9] U.S. copyright law will need to account for the new and altered incentives that are now being faced by content-market participants. This evolution will not come easily. The changes I advocate threaten two well-entrenched principles that lie at the very heart of copyright law and scholarship—the distinction between use and ownership, and the dichotomy that divides utilitarian rights from moral rights.

This Article is structured as follows. Part II begins with a brief overview of the standard economic theory currently underlying U.S. copyright law. I then construct a simple economic model of content-consumer choice. Drawing on this model as a convenient shorthand reference point, I outline the changing economic conditions faced by content-market participants throughout recent history. I next analyze the development of new business models that rely heavily on zero prices and pseudo-ownership end user control. Part II concludes by arguing that these models were made not only possible, but inevitable, by the historical developments described previously.

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7. With apologies to Steven Levitt and Stephen Dubner, whose FREAKONOMICS: A ROGUE ECONOMIST EXPLORES THE HIDDEN SIDE OF EVERYTHING (2005) is one of the most successful popular economics books of all time. *See Amazon Best Sellers: Best Sellers in Popular Economics*, AMAZON, http://www.amazon.com/gp/bestsellers/books/355577011 (last visited July 27, 2013) (ranking *Freakonomics* seventh on the Popular Economics Best Sellers list).

8. *See, e.g.*, Shyamkrishna Balganesh, *Foreseeability and Copyright Incentives*, 122 HARV. L. REV. 1569, 1580 (2009) (analyzing *Harper & Row, Publishers, Inc. v. Nation Enterprises*, 471 U.S. 539 (1985), as an example of a neoclassical application of copyright's fair-use doctrine); Neil Weinstock Netanel, *Copyright and a Democratic Civil Society*, 106 YALE L.J. 283, 286 (1996) (discussing the "neoclassicist" approach to copyright law); Alina Ng, *Rights, Privileges, and Access to Information*, 42 LOY. U. CHI. L.J. 89, 107 (2010) ("United States copyright jurisprudence has generally accepted neoclassical economics as the predominant theoretical approach to allocating entitlements in literary and artistic works . . . .").

9. *See* Ellen P. Goodman & Anne H. Chen, *Modeling Policy for New Public Service Media Networks*, 24 HARV. J.L. & TECH. 111, 153 (2010) (referring to "the world of content abundance").

Next, Part III surveys the emergent body of literature on the unique incentives created by zero-price markets. Drawing from the fields of behavioral economics and consumer psychology, I derive three observations of particular relevance to copyright law and content markets. These are the "zero-price effect,"[10] the shift from "market" to "social" transactions,[11] and the presence of "irrational"[12] consumer behavior in zero-price markets.[13]

Part IV begins by discussing two of the most salient implications of copyright freeconomics. First, I argue that the old distinction between content ownership and content use[14] retains little value today for copyright courts awarding damages for infringement. I also contend that the presence of the irrational consumer behaviors discussed in Part III should give rise to a "non-usage" defense under certain circumstances. On this point, I conclude by setting forth an efficient analytical framework that incorporates decision-theoretic burden shifting to guide courts in evaluating such cases.

Second, I maintain that copyright's centuries-old dichotomy separating utilitarian[15] rights from moral[16] rights is likely no longer justified. In some instances, copyright's constitutionally mandated goal of promoting "Progress"[17] may now be served much more efficiently by moral rights rather than by the bundle of rights traditionally identified with the utilitarian/incentivizing theory. Thus, the controversial addition of moral rights to U.S. copyright law[18]

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10. The zero-price effect refers to consumers' seemingly irrational predilection toward zero-price options, as indicated by their revealed preferences under both laboratory and real-world conditions. *See* DAN ARIELY, PREDICTABLY IRRATIONAL: THE HIDDEN FORCES THAT SHAPE OUR DECISIONS 55–72 (2008).

11. *See infra* Part III.D.1 & 2.

12. The preferred terminology is "boundedly rational," but the implication is the same. *See, e.g.*, Joshua D. Wright, *The Antitrust/Consumer Protection Paradox: Two Policies at War with Each Other*, 121 YALE L.J. 2216, 2224 & n.25 (2012).

13. *See infra* Part III.D.3.

14. *See, e.g.*, Llewellyn Joseph Gibbons, *Entrepreneurial Copyright Fair Use: Let the Independent Contractor Stand in the Shoes of the User*, 57 ARK. L. REV. 539, 581 (2004) ("[C]ourts must distinguish between the ownership of a copy, the license to use a copy, and the ownership of the copyright.").

15. Or "economic." These generally consist of the exclusive rights of reproduction, distribution, and public display and performance, as well as the right to prepare derivative works.

16. Or "noneconomic." This group of rights has generally consisted of (at least) the rights of attribution and integrity.

17. U.S. CONST. art. I, § 8, cl. 8 ("Congress shall have the Power . . . To promote the Progress of Science . . . by securing for limited Times to Authors . . . the exclusive Right to their . . . Writings . . . .").

18. *Compare* ROBERTA ROSENTHAL KWALL, THE SOUL OF CREATIVITY: FORGING A MORAL RIGHTS LAW FOR THE UNITED STATES 1–10 (2009) (arguing that moral rights, including

may—for the first time—be justified on utilitarian grounds. I propose evaluating the codification of these rights and suggest an efficient means of doing so without sacrificing the public interests in content access and usage.

Part IV closes with a call for further scholarship, highlighting three broad areas that require additional theoretical and empirical research. Finally, Part V offers a brief conclusion.

II. THE EVOLVING TECHNOLOGY, ECONOMIC INCENTIVES, AND MARKET STRUCTURES OF CONTENT CREATION, DISTRIBUTION, AND CONSUMPTION

The centuries that have passed since the invention of the Gutenberg Press in 1450 have witnessed enormous advancements in the technology used to reproduce, distribute, and consume artistic and literary content. Increasingly, a pattern of Schumpeterian "creative destruction" has emerged as the dominant paradigm in content-based markets.[19] Periods of stasis, with costs, prices, and quality holding relatively steady, have repeatedly been upended by disruptive innovations. By dramatically decreasing costs (and therefore prices[20]), increasing availability, increasing quality, or some combination of the three, such innovations have radically changed how society interacts with creative content. The following discussion traces the recent history of innovation in content markets and reveals a master narrative: the past two centuries have witnessed an inexorable march toward freeconomic models, conditions, and incentives.

Of course, content-industry stakeholders and consumers do not operate in an entirely free market. Multiple forces—from various bodies of law, to prevailing social norms, to individual affect—combine to constrain or influence both creative decisions and revealed

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attribution and integrity, ought to play a more prominent role in U.S. copyright law), *and* Lior Zemer, *Moral Rights: Limited Edition*, 91 B.U. L. REV. 1519, 1522 (2011) (arguing for an expanded version of Kwall's suggested moral-rights regime, while noting that "[a]ny call to strengthen moral rights in American copyright tradition is an invitation for fierce criticism"), *with* Amy M. Adler, *Against Moral Rights*, 97 CALIF. L. REV. 263, 301 (2009) (arguing that "we should consign moral rights law to the dustbin"), *and* Rebecca Tushnet, *Naming Rights: Attribution and Law*, 2007 UTAH L. REV. 789, 816 ("Adding a new, generalized attribution right to American copyright law would be a mistake at this time . . . .").

19. The economist Joseph Schumpeter famously coined this term to describe dynamic competition. JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 82–86 (1942).

20. Though first-mover advantages and IP protections can temporarily allow an innovative firm to raise prices above the level that would prevail in a classically competitive market, nearly all economists would agree that in the long run a decrease in costs will lead to a corresponding decrease in consumer prices, absent some intervening force or other market failure.

preferences with regards to content. Among the relevant bodies of law, the primary driver is copyright law, the subject of the next Subpart.

A. Overview of the Economic Theory of Copyright Law and Model for Infringement

Underlying all of U.S. copyright law is the central tenet that if content were left entirely unregulated, a large-scale market failure would occur. Broadly speaking, the theory is that society would systematically underinvest in artistic creation absent copyright protections.[21] Creating artistic content generally entails sunk costs that are relatively high in comparison to the low marginal costs of reproducing the finished work. Were copying to be freely allowed, copiers could sell their copies at lower prices than creators, given their lower total costs. In order to allow authors, artists, and (arguably) intermediate content firms to recoup the sunk costs of initial creation, copyright law bestows a limited monopoly upon the author of a work.

Law and economics scholars have pointed out that this monopoly is a "legal monopoly"—a government-granted bundle of exclusive rights—and not necessarily a monopoly in the sense that economists typically use the term.[22]

An economic monopoly exists any time one entity controls a large share of a market with relatively high barriers to entry, such that it can charge supracompetitive prices.[23] Neoclassical price theory tells us that prices in a competitive (i.e., nonmonopolized and nonoligopolized) market will decline to a firm's marginal costs; thus, supracompetitive prices are set above the seller's marginal costs.[24]

Yet, if a copyright does not always grant a monopoly in the economic sense, the central tenet of copyright law can operate only if copyrights frequently do in fact grant their owners such a monopoly. U.S. copyright law operates on the premise that copyright protections allow their owners to charge above-marginal-cost prices (i.e., it frequently also grants owners a de facto economic monopoly), although empirical evidence for this intuition is unfortunately almost

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21. *See generally* Wendy Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case*, 82 COLUM. L. REV. 1600, 1610–14 (1982) (discussing copyright markets).

22. *See, e.g.*, Kathleen A. Dorton, Comment, *Intellectual Property Tying Arrangements: Has the Market Power Presumption Reached the End of Its Rope?*, 57 DEPAUL L. REV. 539, 559 & n.157–60 (2008).

23. *See, e.g.*, E. THOMAS SULLIVAN & JEFFREY L. HARRISON, UNDERSTANDING ANTITRUST AND ITS ECONOMIC IMPLICATIONS 10–25 (4th ed. 2003).

24. *Id.*

nonexistent.[25] By allowing the copyright owner to charge above-marginal-cost prices, this grant of rights allows recoupment of sunk costs and capture of enough profits to, ex ante, incentivize creation and dissemination of the copyrighted work.[26] Without this financial incentive, authors and artists would produce suboptimal levels of socially desirable creative output. Thus, copyright law is meant to solve a market failure and to incentivize artistic creation.[27]

The existence of copyright law creates a structural divide between two content types: legal and illegal. And this divide, in turn, creates competition between legitimate copyright holders and illegitimate copyright infringers. Because of the legal differences between them, these two types of suppliers incur different costs, offer products that are valued differently by consumers, and charge different prices for those products. The following subsections recount the technological advances in content industries, along with the changing economic structures and incentives that accompanied the creative destruction wrought by these advances. These subsections also highlight the differing ways that innovations have impacted the two types of suppliers (legitimate and infringing) and their potential and actual customers.

To provide a convenient shorthand method for discussing changing costs and values of the products offered by legitimate- and illegitimate-content suppliers, I set forth below a simple model of how customers evaluate the choice between the two. Here, A represents the choice of buying the legal (or legitimate) copyrighted product at a cost to the customer of C_a. The other choice, B, represents buying the illegal (or illegitimate) product that infringes the copyright at a cost of C_b. Let V_a represent the value to the customer of A, and V_b represent the value to the customer of B.

Facing the choice between the two,[28] a rational, utility-maximizing customer will choose A, the legal product, if:

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25. *See, e.g.*, William M. Landes & Richard A. Posner, 18 J. LEGAL STUD. 325, 327–28 (1989); Stan J. Liebowitz, *Is Efficient Copyright a Reasonable Goal?*, 79 GEO. WASH. L. REV. 1692, 1694–95 (2011).

26. Liebowitz, *supra* note 25, at 1711 ("[I]t is far from clear that creators do not need financial rewards to induct creations, nor is it clear that financial rewards might actually decrease the value of creative works that are created.").

27. *E.g.*, Li-Jen Shen, *A Duration No More Than Necessary: A Proposed Test for the Duration Requirement of RAM-Copy Fixation*, 51 JURIMETRICS J. 217, 241 (2011) ("[T]he purpose of copyrights is to supply enough of a creation incentive to overcome the market failure that would result from a complete failure to protect.").

28. Of course, the customer might very well choose neither. Under this formulation, she would do so where $V_a < C_a$ and $V_b < C_b$. For purposes of this Article, however, this third option may be ignored.

$$V_a > C_a \text{ and } V_a - C_a > V_b - C_b$$

This is so because not only must *A* yield benefits that are higher than its costs, it must also offer a greater consumer surplus ($V - C$) over *B*. Conversely, the customer will choose *B*, the infringing product, if:

$$V_b > C_b \text{ and } V_b - C_b > V_a - C_a$$

The legal difference between *A* and *B* has implications for C_a and C_b. Because *A* will in theory be offered at a price that is above the seller's marginal costs, C_a will generally be higher than it would be in a world without copyrights. And because *B* entails the possibility of liability for copyright infringement, C_b will likewise be higher than it would in an environment without copyrights.[29] Suppliers and customers account for this possibility by including it in C_b, such that:

$$C_b = Z + (L \times P)$$

Where *Z* consists of nonliability costs (those allocable to reproduction, distribution, transaction costs, etc.), *L* represents the costs of potential liability should one be found liable for copyright infringement, and *P* represents the probability of liability.

This simple model helps conceptualize the effects of various historical developments on content-market behavior. It does so by isolating the variables that affect the decision whether to engage in copyright infringement. The changes discussed below will be related back to their effects on these variables as well as their effects on market participants' incentives and behavior.

B. The Analog Era of File Sharing and Content Consumption: 1801–1982

File sharing[30] is generally thought to be the catalyst for the digital-content revolution at the turn of the millennium. But file sharing is not a novel development. Indeed, the practice of file sharing traces its roots at least as far back as the turn of the eighteenth century. When the Jacquard loom appeared in 1801, it revolutionized

29. To the extent the customer is risk averse, it is also true that V_b will be lower. But for present purposes, it is safe to assume the customer is perfectly rational.

30. For purposes of this Article, I will roughly define "file sharing" to mean "the distribution of encoded information among machines."

textile production.[31] Its use of coded punched cards containing operating instructions made it vastly more flexible than previous looms and enabled enormous leaps in production speed.[32] And while these early iterations may be unfamiliar to students of modern information technology, IBM and others marketed a remarkably similar punch card technology in connection with the emergence of electronic computers in the 1940s.[33]

The quest for better and faster means of transferring files among computers ultimately led to the replacement of punched cards with successive generations of floppy disks that both decreased in size and increased in storage capability. Despite their advantages over previous iterations of file-sharing technology, however, the physical, analog nature of these data-storage devices—and their consequent slow and costly production and distribution—limited their appeal to average consumers as potential tools for copyright infringement.[34] Furthermore, at least in early formats, operating these technologies required substantial programming expertise.[35] Finally, their storage capacity was generally too limited to allow for storage of copyrighted content like books,[36] audio, and audiovisual works. Thus, their attractiveness as a platform for copyright infringement was generally limited to those interested in copying software. And in any event, early computers were largely incapable of displaying such works; their size, expense, and required level of operator expertise dictated that they be designed for more "serious" tasks.[37]

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31. For an in-depth exploration of the history of the Jacquard loom and its impact on subsequent information technology developments, see JAMES ESSINGER, JACQUARD'S WEB: HOW A HAND LOOM LED TO THE BIRTH OF THE INFORMATION AGE (2004).

32. *See id.*

33. Not all of these applications were beneficial—IBM infamously "provided the Third Reich with punch card technology and organizational systems that helped them automate much of their activities." Jason M. Solomon, *New Governance, Preemptive Self-Regulation, and the Blurring of Boundaries in Regulatory Theory and Practice*, 2010 WIS. L. REV. 591, 615.

34. *See* LAWRENCE LESSIG, THE FUTURE OF IDEAS: THE FATE OF THE COMMONS IN A CONNECTED WORLD 7 (2001) (noting the "high costs of production" and "the extraordinarily high costs of distribution" present in real-space markets); John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681 (2012).

35. *See generally* Arthur L. Norberg, *High-Technology Calculation in the Early 20th Century: Punched Card Machinery in Business and Government*, 31 TECH. & CULTURE 753, 766–68 (1990) (discussing punch cards).

36. At least formatted books—unformatted e-books can be quite small. The viewing devices of the day, however, were limited to desktop computers with relatively low-resolution displays.

37. *See* Peter S. Menell, *Envisioning Copyright Law's Digital Future*, 46 N.Y.L. SCH. L. REV. 63, 99 (2003) ("Available microprocessors, the low fidelity of computer peripherals, and limitations of memory storage capacity prevented music from being stored, perceived, and reproduced efficiently on computer devices until the mid-1990s.").

As a result, consumers of creative content instead remained faithful to analog technologies. The year 1932 had seen the advent of recorded audio books,[38] but the vast majority of the market remained occupied by paper-based products that had not changed substantially since the invention of the Gutenberg press in 1450.[39] From the late 1800s through the 1960s and 1970s, end users of audio works also generally remained faithful to analog platforms—first vinyl records,[40] then compact audiocassettes. The quality of machines using these formats advanced rapidly during the mid-twentieth century, while their costs simultaneously declined.[41] Video cassettes appeared in 1969[42] and followed a similar trajectory of rapid cost and quality improvements. Although both types of cassette technologies were initially capable only of playback, by the 1970s, both had also become capable of duplication. And, as with playback, duplication capabilities rapidly increased in quality of output and ease of use.

Recognizing the imminent possibility that consumers would use these new technologies to reproduce copyrighted content, corporate copyright holders attempted to stifle these innovations,[43] perhaps most famously in the *Sony* litigation involving the Betamax home videotape recording device.[44] The suit ultimately failed after the Supreme Court held that "time-shifting" (recording television programs to allow viewing at consumers' convenience) constituted a fair use of the copyrighted programs,[45] a decision that paved the way

38. *See Evolution of Audio Books and Media Players*, BOOKSALLEY, http://booksalley.com/bAMain/bAlleyT02_Museum.php (last visited July 27, 2013) (discussing the "talking-book program" established by Congress in 1931).

39. *Cf.* DAVID A. VISE & MARK MALSEED, THE GOOGLE STORY 1 (2008) ("Not since Gutenberg invented the modern printing press more than 500 years ago . . . has any new invention empowered individuals, and transformed access to information, as profoundly as Google.").

40. Though record players were at first far too expensive for average consumers to afford, the introduction of the Victrola in 1925 brought high-quality audio playback into the reach of the middle class. *See generally New Music Machine Thrills All Hearers at First Test Here*, N.Y. TIMES, Oct. 7, 1925, at 1.

41. *See* FRIEDRICH ENGEL & PETER HAMMAR, A SELECTED HISTORY OF MAGNETIC RECORDING 3 (Richard L. Hess ed., 2006), *available at* http://www.richardhess.com/tape/history/Engel_Hammar--Magnetic_Tape_History.pdf ("[T]he recording technology was beyond the means of most consumers and was aimed at the professional audio and government markets.").

42. *History of the Video Cassette*, SCANDIGITAL (Dec. 22, 2009, 7:00 AM), http://www.scandigital.com/blog/video-transfer/history-of-the-video-cassette/.

43. In some ways, this backlash echoed the sheet music publishing industry's reaction to the advent of disruptive new technologies at the turn of the twentieth century. ADRIAN JOHNS, PIRACY: THE INTELLECTUAL PROPERTY WARS FROM GUTENBERG TO GATES 328–33 (2010).

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

45. *Id.* at 456.

for further refinements of analog reproduction technology by Sony and others.[46] Consequently, large-scale reproduction became a relatively accessible technology for intermediate firms. These intermediate firms inevitably used the new technologies to create infringing reproductions of copyrighted works for sale to the public. And it was these firms, rather than individual end users, that were generally the targets of industry lawsuits.[47]

On the whole, however, analog home recording was still beset by the distribution problems that inhere in tangible products.[48] Additionally, making copies using analog formats inevitably degraded data quality, reducing the utility of the copies produced (V_b). And, importantly, even if individual users could create relatively high-quality copies from home or engage the services of a professional infringer, it was still difficult for the average individual to exploit demand for infringing copies outside her own circle of acquaintances. The nature of the market was, by definition, underground, and the need for secrecy made it difficult or impossible to capture a broader consumer base through advertising. Furthermore, transaction costs in an underground market for real-space goods are generally higher than those incurred in legitimate markets—avoiding detection by private investigators or law-enforcement officials necessitates using relatively inefficient transaction methods.[49] Because infringing suppliers were unable to spread the fixed costs of specialized, high-end equipment over as many customers as were legitimate suppliers, legitimate suppliers enjoyed either a quality advantage (such that $V_a > V_b$) if infringing suppliers used low-end equipment, or a price advantage due to economies of scale (such that $C_a < C_b$) if infringing suppliers used high-end equipment. And, of course, after both suppliers and (by extension) buyers accounted for the potential liability for copyright infringement (L x P), any relative price advantage enjoyed by infringing content providers was reduced accordingly.

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46. VHS ultimately succeeded in destroying Betamax where Universal and others failed—after losing a bitter format war in the 1980s, Betamax was relegated to little more than a historical curiosity.

47. *See, e.g.*, RCA Records v. All-Fast Sys., Inc., 594 F. Supp. 335, 337 (S.D.N.Y. 1984) (involving a retailer that owned an audiocassette copying machine that it used to make unauthorized copies of copyrighted sound recordings); Elektra Records Co. v. Gem Elec. Distrib., Inc., 360 F. Supp. 821, 822 (E.D.N.Y. 1973) (involving a record store that offered an on-site tape recorder, sold blank tapes, and rented audio recordings to customers). Even *Sony* involved the manufacturer of a technology, rather than its users. *See Sony Corp.*, 464 U.S. at 419.

48. *See supra* note 34 and accompanying text.

49. *Cf.* Philip J. Cook et al., *Underground Gun Markets*, 117 ECON. J. 558, 589 (2007) (finding that transaction costs are high in underground gun markets).

Assuming copyright law's grant of a legal monopoly was functioning as intended, then the prices of *A* during this period were above marginal costs—thus, it would seem that illegitimate providers (who do not need to recover sunk creation costs) should have enjoyed at least some price advantage (such that $C_b < C_a$).[50] But as long as content existed in real space, the quality disadvantage, lack of economies of scale, higher transaction costs, and litigation risk uniquely entailed by infringement meant that even if copyright holders were exacting above-cost prices from consumers, infringement was not a particularly attractive alternative for either suppliers or consumers during the analog era.

All of the foregoing fits well within the standard economic theories and assumptions underlying copyright law. Yet, as demonstrated infra, the standard account fails to capture a great deal of real-world incentives and behaviors in modern content markets. For now, it should be noted that supplying infringing content during the analog era still entailed monetary costs. To the extent analog-era individuals wanted to supply infringing content at a price of $0.00 for nonfinancial (or indirectly financial) reasons, or as part of a barter system,[51] they would have incurred more than just litigation-risk costs; they would also necessarily forfeit reproduction and distribution costs. Thus, potential zero-price suppliers remained relatively unwilling to commit copyright infringement and were therefore unable to put much downward pressure on retail prices of legal content.

C. PCs and Digital Media Increase Demand for All Content and Supply-Side Capacity for Infringement

The confluence of several factors in the 1980s and 1990s laid the groundwork for a radical shift in how individuals consume—and infringe—copyrighted materials. Primary among these was the largely exogenous introduction and widespread acceptance of the personal digital computer, which allowed consumers to harness previously unheard-of processing and storage capability in the privacy of their

50. The general intuition regarding monopoly rents (often associated with the Chicago School) is that they will attract both price and nonprice competition. *See, e.g.*, Maurice E. Stucke, *Should the Government Prosecute Monopolies?*, 2009 U. ILL. L. REV. 497, 497–98.

51. As it turned out, once given the opportunity, quite a few individuals began to do just that. *See* Tushar K. Nandi & Fabrice Rochelandet, *The Incentives for Contributing Digital Contents over P2P Networks: An Empirical Investigation*, 5 REV. ECON. RES. ON COPYRIGHT ISSUES 19, 31 (2008) (finding that "contribution behavior" can be "motivated by social influence").

own homes.[52] At the same time, several important endogenous developments appeared in rapid succession.

The first was the development of compact discs ("CDs") in 1982, which broadly readied the public for digitized content files.[53] Relative to previous formats, CDs allowed for near-perfect reproduction and substantially increased storage capacity. CDs were also less specialized—they could contain an array of content or data. Soon thereafter, CDs became readable by computers. And beyond mere playback, end users could also copy files from CDs onto their hard drives with no data-quality degradation.[54] Computers, unlike previous content devices, access data stored intangibly in strings of object code.[55] The intangibility of code, coupled with years of exponential growth in processing speeds[56] and hard drive capacity, allowed for nearly instantaneous, high-quality copying that entailed marginal costs approaching zero.

As personal computers came into broad use, individual end users found that they could suddenly make thousands, even millions, of copies of digital files from their own homes. And they could do so at virtually no cost.[57] Of course, an individual end user would have no use for or incentive to create digital copies of files she already possessed. Without some way to distribute copies to others, the rapidly increasing ability of end users to create high-quality reproductions of media files was largely irrelevant.

By 1988, consumers could acquire computer hardware and accompanying software programs (together, "CD burners") that offered the ability to reproduce files from a hard drive onto an empty

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52. *See generally* Menell, *supra* note 37, at 69–73 (discussing the advent of the digital computer).

53. CDs also became the dominant distribution platform for software programs, although that function is increasingly being served by online delivery paths. And beyond the advantages of online software distribution lie those offered by cloud computing—"Software as a Service" ("SaaS") models are fast becoming the predominant method of software provision and consumption. *See* Zvi Grauer, *SaaS Coming of Age*, SERVERBEACH, http://www.serverbeach.com/resources/SaaS%20Coming%20of%20Age (last visited July 27, 2013).

54. *See* Mohsen Manesh, *The Immorality of Theft, the Amorality of Infringement*, 2006 STAN. TECH. L. REV. 5, ¶ 5, *available at* http://stlr.stanford.edu/pdf/Manesh-immorality.pdf.

55. *See generally* Heidi S. Bond, *Many-to-Many Contracts*, 86 TUL. L. REV. 519, 533 (2012) (briefly discussing the differences between object code and source code).

56. "Moore's Law" was coined to describe the rapid pace of growth in processing capability over the previous two decades. *Moore's Law and Intel Innovation*, INTEL, http://www.intel.com/content/www/us/en/history/museum-gordon-moore-law.html (last visited Sept. 29, 2013).

57. Without an Internet Protocol ("IP") address discoverable through a subpoena of an Internet Service Provider ("ISP"), such end user copying was virtually undetectable by copyright owners—thus, both Z and (L_c x P_l) were almost nonexistent.

CD.[58] This functionality allowed individual consumers to cheaply and quickly reproduce digital media files onto a transferable—albeit still physical—medium with no data-quality degradation. And again, video followed a similar (though delayed) trajectory.[59]

Thus, during this time period, production costs—and also C_b—continued to decrease. And, for the first time, V_b began to rival V_a. But while the variable costs allocable to reproduction had fallen to essentially zero for an isolated end user creating infringing copies on her own computer's hard drive, real-space reproduction and distribution still entailed costs for both infringers and legitimate firms. The difficulties of transacting in a real-space, underground market and the liability risk accompanying illegitimate content, however, still uniquely disfavored infringing-content providers and consumers. And because reproduction aimed at distribution, as well as distribution itself, still entailed monetary costs, those who wanted to supply content at zero price were still generally unwilling or unable to do so.

D. The Infringement Explosion: A Network of Networks, Data Compression Technology, and Nonliability and Liability Costs

No single innovation has changed content reproduction, distribution, and consumption more than readily available, low-cost, high-speed Internet access.[60] The speed with which the U.S. population has adopted usage of the Internet has been truly remarkable—from 1995 through 2013, usage rates among American adults more than sextupled from 14% to 85%.[61] This phenomenon was partly exogenous and partly endogenous to copyrighted-works markets. While the Internet's myriad uses all combined to spur its rapid adoption, a large part of its adoption was due to consumers' rabid appetite for online distribution of media.[62]

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58. *History of Taiyo Yuden CD-R*, EDOCPUBLISH.COM, http://www.edocpublish.com/resources-2/history-of-taiyo-yuden-cd-r/ (last visited July 27, 2013).

59. *See* HUGH BENNETT, UNDERSTANDING RECORDABLE & REWRITABLE DVD 21 (2004) ("By far the quickest and least expensive way to duplicate a disc is to copy it using a computer outfitted with a DVD recorder combined with off the shelf writing software.").

60. *Cf.* David, *supra* note 3, at 7.

61. *Internet Adoption, 1995–2013*, PEW INTERNET & AM. LIFE PROJECT, http://www.pewinternet.org/Static-Pages/Trend-Data-(Adults)/Internet-Adoption.aspx (last visited July 27, 2013). And rates are even higher among certain demographics: 98% among those aged 18–29, for example. *Id.*

62. *See* LESSIG, *supra* note 5, at 296 ("The appeal of file-sharing music was the crack cocaine of the Internet's growth. It drove demand for access to the Internet more powerfully than any other single application.").

As long as personal computers remained largely unconnected to each other, content reproduction and distribution remained dependent on real-space technologies. But the advent of widespread Internet access changed all of that. Suddenly, digitized content files had the potential to be distributed intangibly over large geographic distances via the Internet, avoiding real-space distribution costs.[63] The advent of widespread Internet access did to the role of content distributor what the development of digital computers did to the role of content reproducer.[64] Distribution could now be done by almost anyone with access to a personal computer and the Internet—which increasingly meant that it could be done by almost anyone, period.[65]

Just as importantly, the rise of the Internet meant that users no longer needed to physically leave the privacy of their own homes in order to procure or supply infringing materials.[66] And the anonymous FTP,[67] which was standardized in the 1980s, meant that individuals were able to maintain a relatively high level of anonymity when accessing materials virtually.[68] Thus, the structural features of the Internet dramatically increased both supply- and demand-side anonymity (or at least the perception thereof) and concurrently reduced the previously high transaction costs of doing business in infringement markets.[69] Given the proper software platform, the potential now existed for eliminating the "underground advertising" problem. Finally, perceived anonymity—coupled with some uncertainty as to whether transferring copyrighted digital files via the Internet was a violation of U.S. copyright law[70]—reduced liability

63. Mary Madden, *The State of Music Online: Ten Years After Napster*, PEW INTERNET & AM. LIFE PROJECT (June 15, 2009), http://pewinternet.org/Reports/2009/9-The-State-of-Music-Online-Ten-Years-After-Napster/The-State-of-Music-Online-Ten-Years-After-Napster/3-Partying-like-its-1999until-the-subpoenas-come-in.aspx.

64. *See* Manesh, *supra* note 54, ¶ 5 ("[T]he Internet has dramatically reduced the costs associated with distributing these 'ripped' copies of copyrighted works.").

65. *See Internet Adoption, 1995–2013*, *supra* note 61.

66. Manesh, *supra* note 54, ¶ 5 ("[U]sers can now transfer 'ripped' files from home without ever leaving their computer.").

67. FTP is an acronym for "File Transfer Protocol," which—due in no small part to the anonymity (and resulting security) it allowed—quickly became the predominant method of online file transfer. *See Anonymous FTP*, ZEN & ART INTERNET, http://www.cs.indiana.edu/docproject/zen/zen-1.0_5.html (last visited July 27, 2013).

68. Subsequent legal developments reduced somewhat the level of actual anonymity that users enjoyed.

69. *See supra* note 51 and accompanying text.

70. *See* Ben Depoorter, *Technology and Uncertainty: The Shaping Effect on Copyright Law*, 157 U. PA. L. REV. 1831, 1860 (2009) ("[L]egal uncertainty may create the tipping point towards noncompliance in environments where there is a low probability of enforcement, as in the case of file sharing on peer-to-peer networks.").

costs, uniquely reducing the inherent disadvantage of infringing content.

Lossy data compression formats[71] were developed and standardized in the early 1990s. The smaller file sizes greatly reduced the demands that distributing and storing digital-media files placed on hard drive and transmission assets.[72] And although these compression formats dramatically reduce the size of the resulting file, they do so without hindering the perceived quality of the final product.[73]

All of this created a massive and ever-increasing number of individuals with access to substantial digital storage capacity; a ready supply of copyrighted materials copied from physical formats; the ability to compress digitized content to facilitate online transmission; and the infrastructure necessary for relatively anonymous, rapid, and essentially costless distribution of high-quality infringing content. With supply-side noncreation costs (Z) nearing zero, the door was opened for end users interested in supplying content for noneconomic reasons or as part of a barter system to offer illegitimate content at a price of zero. Although top-down, for-profit file-hosting services[74] were launched with some commercial success, end users were clearly prepared to become both online consumers *and* suppliers of media files on a massive scale. All that was needed was a platform for them to connect with each other.

E. End-to-End File Sharing and the Content Industry's Failed Litigation-Deterrence Campaigns

In 1999, Shawn Fanning and Sean Parker developed Napster, a freely downloadable software program that allowed individual end users with an Internet connection to discover digital-content files stored on any other user's hard drive via a central indexing server and

71. "Lossy," as opposed to "lossless," compression algorithms do degrade file quality, but modern formats generally do so using techniques that render the final product indistinguishable from the original to most humans. *But see* Oleksandr Pastukhov, 22 INTELL. PROP. & TECH. L.J. 10, 12 (2010) (claiming that music files that have been compressed "are not as appealing as CDs to trained ears").

72. Eric S. Boorstin, Music Sales in the Age of File Sharing (Apr. 3, 2004) (unpublished A.B. dissertation, Princeton University), *available at* http://pdf.aminer.org/000/299/018/the_power_of_p_p_beyond_file_sharing.pdf ("It takes two to three hours to download a CD audio song from a 56k modem operating a[t] peak capacity. The MP3 format cuts this time to 12 to 18 minutes." (citation omitted)).

73. *Id.* ("A three-minute song in CD audio format is 32 megabytes. The same song in MP3 format compresses to about 3 megabytes with little loss in quality.").

74. The file-hosting model involves uploading a file to a server maintained by the host, which then provides Internet links that allow end users to directly download the file.

to reproduce those files onto their own hard drive. At the same time, Napster made users' own digital libraries accessible to other users, effectively turning end users into both consumers *and suppliers* of content, the substantial majority of which was copyrighted.[75] And while Napster was not the first end-to-end file-sharing network,[76] it enjoyed the greatest success among first-generation offerings.[77]

End-to-end file-sharing platforms paved the way for what would arguably prove to be the most radical change in the economics of content markets—and the incentives and behavior of market participants—in all of history. Marginal costs approaching zero and supply that grew ever closer to infinite, existing within an end-to-end network of millions of connected individuals, ushered in the "age of content abundance."[78] Inclined individuals could suddenly provide infringing materials to millions of recipients at a price of zero—a price that triggers unique behavior on the part of consumers and suppliers.[79] As a result, consumers faced a decision between paying a zero price for *B*[80] and paying a positive price for *A*.

Ever-litigious corporate copyright holders reacted swiftly. A group of content firms successfully obtained an injunction against Napster in 2000[81] (affirmed by the Second Circuit in early 2001)[82] that effectively crippled the service just two years after its inception. Ultimately, Napster's centralized structure proved to be its downfall: it required the significant capital expenditure necessary to acquire and operate a proprietary, centralized server;[83] allowed Napster to gain knowledge and control of users' activities that weighed heavily in

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75. A&M Records, Inc. v. Napster, Inc. (*Napster I*), 114 F. Supp. 2d 896, 911 (N.D. Cal. 2000) (finding that 87% of the files available for download on Napster were copyrighted), *aff'd in part & rev'd in part*, 239 F.3d 1004 (9th Cir. 2001).

76. The now-defunct Audiogalaxy could likely lay claim to that honor. Codrut Nistor, *File Sharing—History*, PCTIPS3000 (June 24, 2009), http:www.pctips3000.com/file-sharing-history/.

77. Usage peaked at about 25 million individuals sharing 80 million digital files. Joseph D. Lienjdlien, *A Guide to Peer-to-Peer Filesharing (Part 2): The Beginnings of P2P*, MY OPERA (Sept. 11, 2010), http://my.opera.com/portalnews/blog/2010/09/11/a-guide-to-peer-to-peer-filesharing-part-2-the-beginnings-of-p2p.

78. *See* Ellen P. Goodman & Anne H. Chen, *Modeling Policy for New Public Service Media Networks*, 24 HARV. J.L. & TECH. 111, 153 (2010).

79. *See infra* Part III.

80. Setting aside for the moment the question of infringement-liability costs (P x L), a topic that is explored in Part III.A, *infra*.

81. *Napster I*, 114 F. Supp. 2d 896, 901 (N.D. Cal. 2000).

82. *See* A&M Records, Inc. v. Napster, Inc. (*Napster II*), 239 F.3d 1004, 1027 (9th Cir. 2001) ("The district court correctly recognized that a preliminary injunction against Napster's participation in copyright infringement is not only warranted but required.").

83. *Cf.* Alexander Peukert, *A Bipolar Copyright System for the Digital Network Environment*, 28 HASTINGS COMM. & ENT. L.J. 1, 4 (2005).

favor of the plaintiffs' contributory- and vicarious-infringement liability theories;[84] and rendered the entire service vulnerable to a single injunction.[85]

Even before Napster's eventual demise, however, multiple second-generation peer-to-peer ("P2P") services had risen up in its stead.[86] The newer offerings were truly decentralized, as individual users' computers (instead of a proprietary server) were now used for indexing. This decentralization had the intended and actual effect of discouraging copyright-infringement lawsuits. Many were also "located"[87] overseas, further complicating enforcement efforts.[88] And while Napster had allowed users to download a single file from only one other user (necessarily fixing latency at the slower of the two Internet connection speeds), the development of "bittorrent" technology allowed users, for the first time, to concurrently download small portions of files from multiple sources, further decreasing C_b.[89] The success of these second-generation offerings has overshadowed that of Napster by several orders of magnitude.[90]

Amidst this upheaval, legitimate-content firms were left unsure how to proceed in order to prevent further consumer substitution away from their product and toward infringing content. There were two copyright-based litigation options: sue facilitators (the second-generation P2P services) or sue end users. The content firms chose both.

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84. *See Napster II*, 239 F.3d at 1021–24.

85. Napster itself declared bankruptcy the following year and sold its assets to Roxio, Inc., a more conventional pay-service provider. *See Roxio Buys Napster Assets*, N.Y. TIMES (Nov. 28, 2002), http://www.nytimes.com/2002/11/28/business/roxio-buys-napster-assets.html. As of this writing, the Napster brand was still being used to promote a paid-subscription music service.

86. *See* Ben Depoorter et al., *Copyright Backlash*, 84 S. CAL. L. REV. 1251, 1258 (2011) ("When, however, the final verdict in *Napster* arrived, a new generation of file-sharing applications was already in use.").

87. At least to the extent that term can be applied to a decentralized, online file-sharing service.

88. Richard Menta, *Napster Clones*, MP3NEWSWIRE.NET (Aug. 20, 2001), http://www.mp3newswire.net/stories/2001/topclones.html (noting that multiple contemporary file-sharing programs were based outside the United States). For a discussion of legal developments surrounding multinational, "cloud-based" disputes, see generally Damon C. Andrews & John M. Newman, *Personal Jurisdiction and Choice of Law in the Cloud*, 73 MD. L. REV. (forthcoming 2013), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id =2227671.

89. For an explanation of "bittorrent" technology, see Paul Gil, *Torrents 101: How Torrent Downloading Works*, ABOUT.COM (July 2013), http://netforbeginners.about.com/od/peersharing/a/torrenthandbook.htm.

90. One study found that BitTorrent, a popular bittorrent protocol, accounted for over half of *all* Internet traffic in South America and Europe in 2008 and 2009. HENDRIK SCHULZ & KLAUS MOCHALSKI, INTERNET STUDY 2008/2009, at 1 (2009), *available at* http://www.ipoque.com/sites/default/files/mediafiles/documents/internet-study-2008-2009.pdf.

On the facilitator front, the decade following Napster's bankruptcy devolved into a protracted series of legal battles between powerful corporate copyright stakeholders and a ragtag band of programmers, "free culture"[91] advocates, hackers, and the relatively small firms responsible for developing and introducing the second generation of massively popular P2P software platforms.[92] This copyright war spanned the globe and, in *MGM Studios, Inc. v. Grokster, Ltd.*, reached the U.S. Supreme Court.[93]

Yet, despite their financial and political clout, entertainment and media companies have largely found themselves playing a high-stakes "game of Whac-a-Mole."[94] Consider, for example, one of the more recent high-profile takedowns of a file-sharing service. In August 2006, a group of major record companies filed suit against LimeWire, a P2P file-sharing client that used the popular Gnutella network protocol.[95] Following more than four years of litigation, the district court issued an injunction ordering the program to be shut down.[96] But LimeWire, a second-generation file-sharing program, would prove to be much harder to disable than its predecessors. Since it was merely a Gnutella client, shutting down LimeWire had no effect on the underlying network—users could still access Gnutella through a multitude of similar client software. Additionally, because the LimeWire source code had already been distributed freely, "anybody c[ould] modify it and distribute it themselves. And, in fact, this ha[d]

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91. A term used somewhat loosely to describe those who argue for radical overhaul of modern copyright regimes that they perceive as overly restrictive; it traces its roots to Lawrence Lessig's book of the same name. *See* LESSIG, *supra* note 5; *see also, e.g.*, QuestionCopyright, *Copying Is Not Theft—Official Version*, YOUTUBE (Apr. 1, 2010), https://www.youtube.com/watch?v=IeTybKL1pM4 ("free culture anthem").

92. Geoffrey Neri, Note, *Sticky Fingers or Sticky Norms? Unauthorized Music Downloading and Unsettled Social Norms*, 93 GEO. L.J. 733, 750–51 (2005) ("Scores of second-generation file-sharing programs appearing in the wake of Napster's demise have proven more popular than Napster as well as more resistant to legal challenge.").

93. 545 U.S. 913, 936–41 (2005) (holding that Grokster and Streamcast (d/b/a/ Morpheus) could be liable to plaintiffs—twenty-eight media conglomerates—on an "inducement liability" theory of copyright infringement).

94. *E.g.*, Todd R. Weiss, *Google Search Algorithm Update Means Better Copyright Protection*, EWEEK (Aug. 14, 2012), http://www.eweek.com/c/a/Search-Engines/Google-Search-Algorithm-Update-Means-Better-Copyright-Protection-184969/ ("It's a giant game of Whac-a-Mole.").

95. *See* Complaint for Federal Copyright Infringement, Common Law Copyright Infringement, and Unfair Competition, Arista Records LLC v. Lime Grp. LLC (S.D.N.Y. Aug. 4, 2006) (No. 06 CV 5936), 2006 WL 2582075.

96. (Proposed) Consent Injunction, *Arista Records*, 715 F. Supp. 2d 481 (S.D.N.Y. Oct. 26, 2010) (No. 06 Civ. 05936 (KMW)), 2010 WL 4256219; *LimeWire File Sharing Halted by Injunction*, CBSNEWS (Oct. 27, 2010), http://www.cbsnews.com/stories/2010/10/27/business/main6996056.shtml.

been happening for years."[97] Thus, even before the court order went into effect, clone programs like FrostWire—which essentially duplicated LimeWire's functionality—were already being distributed and used.[98]

The LimeWire example illustrates just how unsuccessful attempts to eradicate file-sharing facilitators have been.[99] As Lawrence Lessig put it, "[W]e've been waging a war against [file sharers] for 10 years, and it has failed."[100] The technologies used by file-sharing programs, clients, and networks have become significantly less susceptible to legal remedies while retaining end user popularity in the face of large-scale, sustained media campaigns funded by corporate copyright owners. Even in the days of Napster, upwards of ten thousand copyrighted files were being reproduced every second.[101] And digital-content-file reproduction and distribution may now account for over half of all Internet traffic in some parts of the world.[102]

Finally, although predicting the future is generally a fool's game, especially in the world of information technology, new technologies have recently emerged that may prove to be even more difficult for corporate content firms to counter. Take the "cloud-computing"[103] service Dropbox, for example.[104] Dropbox, one of the first cloud-storage offerings to gain widespread usage, can be and is used for a multitude of purposes (likely satisfying the *Sony* standard

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97. Andrew, *Court Injunction Against LimeWire Won't Kill Forks of LimeWire . . . or Gnutella*, NW. PROGRESSIVE INST. ADVOC. (Oct. 26, 2010, 9:56 PM), http://www.nwprogressive.org/weblog/2010/10/court-injunction-against-limewire-wont.html.

98. Ernesto, *FrostWire 'Kills' Gnutella to Go All BitTorrent*, TORRENTFREAK (June 27, 2011), http://torrentfreak.com/frostwire-kills-gnutella-to-go-all-bittorrent-110627/.

99. *See generally* Depoorter et al., *supra* note 86 (positing that enforcement efforts against the file-sharing community have been "so ineffective" in part due to a backlash against overzealous copyright enforcement).

100. Posting by efcarrasco, remixin, *Lawrence Lessig: War Against File Sharers "Has Failed"* (Feb. 6, 2009), http://www.remixin.com/efcarrasco/blog/lawrence-lessig-war-against-file-sharers-has-faile.html.

101. A&M Records, Inc. v. Napster, Inc., 114 F. Supp. 2d 896, 902 (N.D. Cal. 2000).

102. *See* SCHULZ & MOCHALSKI, *supra* note 90 and accompanying text.

103. *What is Cloud Computing?*, PC MAG. (Mar. 13, 2013), http://www.pcmag.com/article2/0,2817,2372163,00.asp:

> In the simplest terms, cloud computing means storing and accessing data and programs over the Internet instead of your computer's hard drive. . . . For it to be considered "cloud computing," you need to access your data or your programs over the Internet, or at the very least, have that data synchronized with other information over the Net.

104. DROPBOX, http://www.dropbox.com.

for legality[105]), and Dropbox, Inc. does not appear to have distributed the program "with the object of promoting its use to infringe copyright"[106] (likely satisfying the *Grokster* standard). But Dropbox is also capable of, and will likely be used for, substantial amounts of illegitimate file sharing.[107]

If their campaign against file-sharing facilitators has gone poorly, content firms' attack on consumers has gone even worse. Early on, some scholars predicted that copyright holders would limit their litigation efforts to targeting intermediate facilitators due to the high costs of bringing copyright lawsuits.[108] Admittedly, the typically not-for-profit nature of end users' alleged infringements rendered unattractive the "actual damages plus defendant's profits" remedy allowed under U.S. copyright law[109] But statutory damages were a different story—even at the bare minimum of $750 for "normal" infringement per work infringed, an individual found to have infringed the copyrights in 1000 works could be held liable for $750,000, more than enough to offset litigation costs.[110] Thus, realizing the difficulty of successfully containing second-generation file-sharing networks—and no doubt calculating that statutory damages awards against individuals who were copying hundreds or thousands of seemingly "free" copyrighted works could be highly lucrative—content firms quickly turned their attention toward individual file sharers.

In June 2003, the Recording Industry Association of America ("RIAA") launched a controversial litigation campaign targeting individual file sharers.[111] The Motion Picture Association of America ("MPAA"), the RIAA's counterpart in the film industry, joined the campaign in 2004.[112] Professors Lemley and Reese, writing in 2004,

105. Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 456 (1984) (holding that distributing a device "capable of substantial noninfringing uses" does not violate U.S. copyright law).

106. MGM Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 936 (2005).

107. *See* Christina Warren, *What Megaupload Teaches Us About the Cloud, SOPA, and Backups*, MASHABLE (Jan. 20, 2012), http://mashable.com/2012/01/20/megaupload-sopa-dropbox/.

108. *See* Mark A. Lemley & R. Anthony Reese, *Reducing Digital Copyright Infringement*, 56 STAN. L. REV. 1345, 1376–77 (2004) (noting that it "is not cost effective to sue each end user for copyright infringement" and that it is "generally considered bad for public relations to sue your customers").

109. 17 U.S.C. § 504(a)(1) (2012).

110. Even excluding the possibility that, as allowed by the Copyright Act, the court granted attorney's fees and costs to the successful plaintiff.

111. John Borland, *RIAA Lawsuits Yield Mixed Results*, CNET NEWS (Dec. 4, 2003, 4:00 AM), http://news.cnet.com/2100-1027-5113188.html.

112. Grant Gross, *MPAA to Sue Movie File Swappers*, PCWORLD (Nov. 4, 2004, 3:00 PM), http://www.pcworld.com/article/118485/mpaa_to_sue_movie_file_swappers.html; *MPAA v. The*

stated that "[s]uing actual infringers is becoming passé in digital copyright law" and dismissed the first wave of suits as anomalous.[113] With the benefit of hindsight, the opposite seems to have been true. In fact, such litigation efforts increasingly became the primary tool used by content providers to combat infringement. As of 2006, the RIAA stopped reporting how many lawsuits it had filed against individuals; by that time, it had already sued 17,587 people.[114] One estimate puts the final total at 35,000 lawsuits.[115]

These campaigns were roundly criticized. Much of the public ire was drawn by litigation outcomes that one court called "simply shocking"[116] and "monstrous."[117] Another judge, addressing content firms' counsel, admonished that "the formalities of this are basically bankrupting people and it's terribly critical that you stop it."[118] Only two file-sharing defendants actually proceeded to trial; each was found liable for copyright infringement after protracted litigation that yielded six- and seven-figure damages awards in favor of content-industry groups.[119]

The specter of drawn-out litigation and massive damages awards induced the overwhelming majority of targeted individuals to settle out of court. A pattern quickly emerged: after obtaining the name and address of an individual behind an IP address, industry

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People, ELEC. FRONTIER FOUND., https://w2.eff.org/IP/P2P/MPAA_v_ThePeople/ (last visited July 27, 2013).

113. *See* Lemley & Reese, *supra* note 108.

114. *RIAA vs. College Students: File Sharing Lawsuit Statistics (Infographic)*, COLLEGESTATS.ORG, http://collegestats.org/articles/2010/02/the-riaa-vs-college-students/ (last visited Aug. 7, 2013) (displaying data collected from Associated Press, the Electronic Frontier Foundation, and others).

115. Will Moseley, Note, *A New (Old) Solution for Online Copyright Enforcement After* Thomas *and* Tenenbaum, 25 BERKELEY TECH. L.J. 311, 331–32 (2010).

116. Capitol Records Inc. v. Thomas-Rasset, 680 F. Supp. 2d 1045, 1054 (D. Minn. 2010).

117. *Id.* at 1055.

118. Heather Neaveill, *The RIAA Versus the People: A File-Sharing Witch Hunt*, 21 DCBA BRIEF 24 (2009) (quoting Transcript of Motion Hearing at 11:1-7, Capitol Records v. Alaujan, 593 F. Supp. 2d 319 (D. Mass. June 17, 2008) (No. 03-11661-NG)), *available at* http://www.dcbabrief.org/vol210209art3.html.

119. The first was Joel Tenenbaum, who faced a $675,000 verdict that was eventually reduced—as being unconstitutionally excessive—to $67,600. Sony BMG Music Entm't v. Tenenbaum, 721 F. Supp. 2d 85, 117 (D. Mass. 2010). On appeal, however, the First Circuit declared that the district court had violated the principle of constitutional avoidance by ruling on substantive due process grounds where a similar result could have been reached using the common-law remittitur doctrine. *See* Sony BMG Music Ent. v. Tenenbaum, 660 F.3d 487, 508–15 (1st Cir. 2011), *cert. denied*, 132 S. Ct. 2431 (2012). The second was Jamie Thomas-Rasset, a single mother of four who, following her second trial, was found liable for $1,920,000. Capitol Records, Inc. v. Thomas-Rasset, 799 F. Supp. 2d 999, 1002 (D. Minn. 2011), *rev'd*, 692 F.3d 899 (8th Cir. 2012). A third trial yielded an award of $1,500,000, which the district court reduced on constitutional grounds to $2,250 per song. *Id.* at 1001–03.

associations would send a "settlement" letter (essentially, a demand letter) to the individual.[120] Targeted individuals were forced to decide between paying the amount demanded and arguing their case in court—a process that, as seen above, may extend over half a decade and yield an adverse judgment in the millions of dollars.[121] Unsurprisingly, most chose to settle.[122]

In late 2008, the RIAA announced that it was planning to drop its end user lawsuit strategy.[123] General industry perception was that the campaign had been a "public-relations disaster for the industry."[124] Critics denounced it as a "file-sharing witch hunt"[125] and "legal blackmail."[126] Additionally, a growing body of empirical evidence suggested that the lawsuits yielded relatively minimal reductions in file sharing.[127] One recent study suggests that in some circumstances, ramping up copyright enforcement efforts may actually cause a "backlash" of increased copyright infringement.[128] Whatever the causes, the content industry's end user campaign has been widely acknowledged as a failure.

What some have dubbed the "Copyright Wars"[129] is certainly not over. Recent headlines have underscored the increasingly

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120. Ray Beckerman, *How the RIAA Litigation Process Works* (Apr. 9, 2008), http://beckermanlegal.com/pdf/?file=/howriaa.htm ("Their settlement [offer was] usually for $3750, non-negotiable, and contain[ed] numerous one-sided and unusual provisions.")

121. As one scholar points out in an analogous context, the goal of many litigants is not to proceed to trial, but to induce lucrative settlements. *See* Damon C. Andrews, *Why Patentees Litigate*, 12 COLUM. SCI. & TECH. L. REV. 219, 223 (2011).

122. From those who settled, somewhat lesser-known—but no less controversial—stories emerged. *See generally* Matthew Sag, *Piracy: Twelve Year-Olds, Grandmothers, and Other Good Targets for the Recording Industry's File Sharing Litigation*, 4 NW. J. TECH. & INTELL. PROP. 133, 146 (2006).

123. David Kravets, *Copyright Lawsuits Plummet in Aftermath of RIAA Campaign*, WIRED (May 18, 2010, 1:24 PM), http://www.wired.com/threatlevel/2010/05/riaa-bump/.

124. Sarah McBride & Ethan Smith, *Music Industry to Abandon Mass Suits*, WALL ST. J. (Dec. 19, 2008), http://online.wsj.com/article/SB122966038836021137.html.

125. *See, e.g.*, Neaveill, *supra* note 118 (calling the litigation campaign against end users a "Witch Hunt").

126. Nate Anderson, *The "Legal Blackmail" Business: Inside a P2P Settlement Factory*, ARS TECHNICA (Sept. 29, 2010, 2:40 AM), http://arstechnica.com/tech-policy/news/2010/09/amounts-to-blackmail-inside-a-p2p-settlement-letter-factory.ars.

127. Sudip Bhattacharjee et al., *Impact of Legal Threats on Online Music Sharing Activity: An Analysis of Music Industry Legal Actions*, 49 J.L. & ECON. 91, 111 (2006) (finding evidence that litigation efforts marginally deterred large-volume file sharers but concluding that "downloading options still abound for those seeking to download").

128. *See* Depoorter et al., *supra* note 86.

129. *See, e.g.*, WILLIAM PATRY, MORAL PANICS AND THE COPYRIGHT WARS (2009); Lia Timson, *Websites Crippled as Copyright War Gets Personal*, SYDNEY MORNING HERALD (Jan. 21, 2012), http://www.smh.com.au/it-pro/security-it/websites-crippled-as-copyright-war-gets-personal-20120120-1qa8k.html.

prominent role that copyright occupies in not only the content marketplace, but also the everyday lives of U.S. residents. Some skirmishes have resembled the battles against file-sharing programs: the popular torrent-hosting site Pirate Bay, for example, was targeted by various copyright holders and blocked entirely by several national governments.[130] Other conflicts have involved large, established firms that, though they do not hold large numbers of copyrights, nonetheless deal in content delivery. Here, the first major clash occurred in early 2012, when well-known (and well-funded) corporations like Google, eBay, and Yahoo temporarily "blacked out" their homepages to protest the proposed Stop Online Piracy Act ("SOPA").[131] The bill was subsequently abandoned.[132]

Infringement platforms have proved to be resilient, if not impossible, to eradicate. And consumers have not been deterred much (if at all) from using them. As one commentator stated bluntly, "If after ten years and millions of dollars in legal fees [copyright holders] finally manage to kill the Pirate Bay, there are hundreds of other torrent sites that exist, and more will spring up. If they ban torrents altogether, the internet will invent something new."[133] For present purposes, the salient fact is this: Average end users remain readily able, willing, and eager to choose option *B*.

Since Napster, infringing content has represented—for the first time—a zero-price alternative to legitimate content. As the foregoing historical account illustrates, the trends that led to this development are long-term and structural. The master narrative that has emerged is one of ever-decreasing costs, increasing quality, and the presence of infringing content as a true competitive threat to legitimate markets. In short, the changes brought about by these trends are here to stay. And in the face of the failure of the for-profit content industry's litigation campaigns, option *B* began to (and continues to) exert massive downward pricing pressure on option *A*. As a result, legitimate competitors have been forced to change tactics.

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130. Don Reisinger, *Indian Court Overturns Vimeo, Pirate Bay Blockade*, CNET (June 20, 2012, 8:28 AM), http://news.cnet.com/8301-1023_3-57456945-93/indian-court-overturns-vimeo-pirate-bay-blockade/.

131. Ned Potter, *SOPA Blackout: Wikipedia, Google, Wired Protest 'Internet Censorship'*, ABC NEWS (Jan. 18, 2012, 11:00 AM), http://abcnews.go.com/blogs/technology/2012/01/sopa-blackout-wikipedia-google-wired-join-protest-against-internet-censorship/.

132. Erick Schonfeld, *In Face of Protests, Congressmen Begin to Abandon SOPA Ship*, TECHCRUNCH (Jan. 18, 2012), http://techcrunch.com/2012/01/18/congressmen-abandon-sopa/.

133. Paul Tassi, *You Will Never Kill Piracy, and Piracy Will Never Kill You*, FORBES (Feb. 3, 2012, 10:20 AM), http://www.forbes.com/sites/insertcoin/2012/02/03/you-will-never-kill-piracy-and-piracy-will-never-kill-you/2/.

III. THE RISE OF CONTENT FREECONOMICS

The creative destruction wreaked by technological innovation and the accordant shifts in content-market economics have combined to create readily available zero-price, infringing content that offers value equivalent to that offered by legitimate content. Faced with such competition and forced to confront the failure of legal enforcement mechanisms to eradicate digital infringement, legitimate-content firms have responded with innovations of their own. This Part describes the structural shift toward zero-price, legitimate-content delivery—the rise of "content freeconomics."

A. Introduction: Zero Prices, Nonzero Costs

As shown above, the costs of content creation, reproduction, and distribution have declined to the point that the only significant cost left to be borne by suppliers and consumers of infringing content is litigation risk, (L x P). Even at the height of the litigation campaign against facilitators and end users, however, that risk was not particularly great. The following discussion illustrates just how minimal the cost of litigation risk was.

Consumers rarely, if ever, actually solve for (L x P). And in any event, the sort of data required for such a calculation is never available ex ante. Yet, as a means of illustrating with at least some measure of preciseness what consumers routinely do using rough estimates, consider the following. In 2006, Internet penetration in the United States had reached 73%, which, given the size of the U.S. population at the time, meant that about 147 million adults were Internet users.[134] RIAA statistics indicate that in 2006, 19% of U.S. Internet users had downloaded music illegally.[135] We can thus estimate the number of U.S. Internet users who had downloaded music illegally to be 27.93 million.[136] Though the RIAA was not the only possible source of an infringement lawsuit, RIAA members appear to have overwhelmingly dominated the field;[137] thus, RIAA statistics can serve as a useful proxy for the total number of copyright-

134. Madden, *supra* note 63.

135. *For Students Doing Reports*, RIAA, http://www.riaa.com/faq.php (last visited Aug. 7, 2013) (collecting statistics).

136. Note that this number is likely lower than the total number of Internet users who had downloaded infringing materials, as it does not include any users who had downloaded infringing software programs, films, photographs, etc., but had not downloaded illegitimate music files.

137. A Westlaw search for "music & download! /p copyright /s infring! & da(aft 1/1/2006 & bef 12/31/2006)" yields 43 hits, none of which involved "independent" copyright holders (i.e., copyright plaintiffs who were neither members nor subsidiaries of members of the RIAA).

infringement lawsuits. Because the RIAA stopped reporting lawsuit volume in February 2006, the data from 2005 will have to suffice. Thus, assume that roughly 8200 individuals were sued in 2006.[138] Using these figures, an infringing music downloader faced a 0.0294% chance of litigation ($P = .000294$). If the downloader chose the majority route and settled for $3000 (the average settlement amount during that time period)[139] instead of proceeding to trial,[140] L would be $3000, and the expected cost of litigation risk (L x P) would be only $0.88.[141] At an expected cost of $0.88, it would take only one zero-price music album download before $V_b - C_b > V_a - C_a$, given that legitimate prices ranged from around $10 for digital albums[142] to roughly $16 for physical albums at that time.[143]

For illustrative purposes, assume that a purely hypothetical 2006 consumer wanted to acquire just one album, which she valued at $18, and that she was indifferent as to the value of legitimate versus illegitimate content—thus, V_b and V_a equal $18. Using the above values, we can see that

$$V_b > C_b \text{ and } V_b - C_b > V_a - C_a$$

for either a digital or physical comparison. For the digital A-versus-B comparison, the actual figures are

$$\$18 > \$0.88 \text{ and } \$18 - \$0.88 > \$18 - \$10$$

Thus, the infringing option would create greater consumer surplus than the legitimate option, even after discounting for liability risk. And as a result, the purely rational and perfectly informed (and also

138. *RIAA vs. College Students*, *supra* note 114.

139. *See* ELEC. FRONTIER FOUND., RIAA VS. THE PEOPLE: FOUR YEARS LATER 4 (2007), *available at* http://w2.eff.org/IP/P2P/riaa_at_four.pdf.

140. Recall that only two individuals sued by RIAA members actually proceeded to trial, making this a fairly safe assumption.

141. This would hold true only if all infringers faced an equal risk of litigation; as discussed further *infra*, because the RIAA generally targeted only larger-volume infringers, a smaller-volume infringer would properly determine the cost to be even lower. This figure also excludes attorneys' fees, given that such fees are minimal or nonexistent where targeted individuals simply settle out of court.

142. *E.g.*, *Legal Music Downloading Programs*, EHOW, http://www.ehow.com/list_7231419_legal-music-downloading-programs.html (last visited July 28, 2010) ("[Digital] albums cost an average of $10.").

143. Mark Glaser, *Music Industry Losing Control over Album Sales*, MEDIASHIFT (Jan. 22, 2007), http://www.pbs.org/mediashift/2007/01/music-industry-losing-control-over-album-sales022.html.

therefore necessarily hypothetical)[144] digital-album consumer would choose to infringe. For the real-space *A*-versus-*B* comparison, the actual figures are

$$\$18 > 0.88 \text{ and } \$18 - \$0.88 > \$18 - \$16$$

Again, the consumer would choose to infringe. Using these figures, if our hypothetical consumer wanted to acquire just one album (either digital or physical), then it made rational economic sense for her to choose *B*, the zero-price, infringing alternative.

The settlement amounts requested by industry trade groups did not vary greatly with the quantity of infringed content; rather, the amounts were kept low enough to discourage targeted end users from retaining defense counsel. Given a fixed litigation-risk cost (L x P), it would seem that some smaller-volume consumers might be incentivized to choose *A* and avoid infringement. Because the RIAA generally targeted only larger-volume infringers, however,[145] a smaller-volume infringer would properly determine the expected cost of litigation risk to be even lower than $0.88. In fact, because smaller download volume reduced P so greatly—consequently lowering C_b to a level approaching zero—smaller-volume consumers would have rationally chosen *B* over *A*. And some larger-volume consumers were also incentivized to choose *B* even despite the relatively higher (L x P) associated with high-volume infringement because high volume caused V_b to outweigh C_b and caused C_b to be less than C_a (as in the example above).

Of course, as the foregoing implies, option *B* was not clearly a better option in all circumstances. Depending on the desired quantity of content, and given the uncertainties faced by end users at the time, it is likely that some rational consumers (especially those who desired very little content) still chose *A*. Furthermore, to the extent that consumers facing this choice tended to be risk averse, the threat of litigation would have caused them to perceive relatively higher C_b and militated toward choosing *A*.[146] Finally, path dependency and switching costs meant that some consumers remained locked into physical albums.[147] And indeed, reality reflected these conditions—

144. *See infra* note 183 and accompanying text (discussing the nature of *homo economicus*).

145. *See* Depoorter et al., *supra* note 86.

146. For a broad econometric analysis of risk aversion, see John W. Pratt, *Risk Aversion in the Small and in the Large*, 32 ECONOMETRICA 122 (1964).

147. *See generally* Stan J. Liebowitz & Stephen E. Margolis, *Path Dependence, Lock-in, and History*, 11 J.L. ECON. & ORG. 205 (1995) (describing switching costs as a cause of path dependency).

legitimate sales of content did not immediately plummet to zero, despite much content-industry hand wringing regarding that possibility.[148]

Yet, the crucial difference between the infringing content that these new technologies offered and legitimate content was the infringing content's price: $0.00. This price had, and continues to have, profound market implications. As discussed in Parts III.C–D, the "zero-price effect" drastically increased the attractiveness of substituting away from *A* toward *B*.[149] That, in turn, meant that option *B* put immense downward pressure on the price of *A*. The question facing copyright owners who had profited under the old regime became "how do you compete with free?"[150] Increasingly, the answer has been to offer competing zero-price options.[151]

B. The Explosion of Zero-Price, Legitimate Content

Today, the array of legitimate, "professional"[152] content that is accessible at zero or negligible prices is truly incredible. Spotify, a music-streaming service launched in 2011, provides a good illustration of this shift. One of Spotify's cofounders specifically identified the rationale for the company's business model as creating an option *A* that could compete on the merits with *B*: "[W]e started thinking about how we could create a product that was better than piracy."[153] At the time of its launch, Spotify offered consumers on-demand access to a searchable library of 15 million songs for $0.00.[154] By 2012, its library

148. *E.g.*, RIAA, 2011 YEAR-END SHIPMENT STATISTICS 2 (2012) (noting that legitimate music sales comprised almost $7 billion during 2011, a year-over-year increase compared to 2010 figures).

149. *See infra* Parts III.C–D.

150. *See* Madden, *supra* note 63 (describing the consumer demand for free music).

151. Some early scholars predicted this development. *See, e.g.*, Eric Schlachter, *The Intellectual Property Renaissance in Cyberspace: Why Copyright Law Could Be Unimportant on the Internet*, 12 BERKELEY TECH. L.J. 15, 23 (1997) ("[T]he profit-maximizing price on the Internet may be where marginal revenue equals marginal cost [i.e., zero cost and price] because intellectual property will be cross-subsidized by other products in a manner sufficient to cover the fixed costs associated with intellectual property creation and distribution.").

152. As Professor Lastowka pointed out in 2007, "open copyright 'amateurs' " were even earlier adopters of zero-price models. Lastowka, *supra* note 6, at 55.

153. Adrian Covert, *Why Did It Take So Long for Spotify to Come to the US?*, GIZMODO (July 13, 2011, 10:02 PM), http://gizmodo.com/5821056/why-did-it-take-so-long-for-spotify-to-come-to-the-us?tag=spotify.

154. Doug Gross, *Myspace Gains 1 Million Users, Touts More Music than Spotify*, CNN (Feb. 13, 2012, 11:14 AM), http://articles.cnn.com/2012-02-13/tech/tech_social-media_myspace-million-new-users_1_myspace-specific-media-spotify?_s=PM:TECH.

comprised over 17 million songs[155] and was growing at a rate of over 20,000 songs per day.[156] Consider the reality confronting a consumer just ten years before: in 2002, the price of a music "single" hovered around $6.[157] Even taking into account the fact that real-space singles generally included two or three tracks each, the 2002 consumer would have needed to pay roughly $36 million to access an equivalent to Spotify's $0.00 library. And in 2012, Spotify was not even the largest repository of accessible zero-price music—the social network Myspace offered a player that could access over 42 million songs. To match that number in real-space CD-format singles, the 2002 consumer would have paid about $100.8 million.

Similar offerings have become available in other content markets. Online video service Hulu, for example, offered zero-price streaming of just over 1800 copyrighted television series (with roughly one season per series) in 2012.[158] Just ten years earlier, the retail price for real-space copies of a single season of a television show ranged from around $30 to $70 (or more).[159] Using those figures, a consumer in 2002 would have paid anywhere from $54,000 to $126,000 to gain equivalent access to the same amount of television content that Hulu—just one of many zero-price streaming-video providers—started offering for a price of $0.00. And, as of 2012, Hulu offered more than zero-price television; its library also included over 550 zero-price, feature-length films. Using an estimate of $20 per film, the 2002 consumer would have needed to pay another $11,000 to access the Hulu-equivalent amount of film content.

And the examples go on—with books, for instance, the nonprofit Open Library offers over 2.8 million works.[160] Even using a conservative estimate of $15 per book,[161] amassing an equivalent real-space library in 2002 would have cost $18 million. As for scholarly

155. Rip Empson, *18+ Million Users and 17+ Million Tracks Later, Leaked Spotify Recruitment Deck Offers Peek at First Sketch of UI*, TECHCRUNCH (Apr. 25, 2012), http://techcrunch.com/2012/04/25/17-million-users-and-tracks-later-leaked-spotify-recruitment-deck-offers-peek-at-first-sketch-of-ui/.

156. *Information*, SPOTIFY, http://www.spotify.com/us/about/music-catalogue-info/ (last visited July 14, 2013).

157. Michael DeGusta, *Album Prices*, THEUNDERSTATEMENT (Feb. 18, 2011), http://theunderstatement.com/post/3377858909/album-prices.

158. HULU, http://www.hulu.com (last visited Sept. 19, 2013).

159. Feanor727 & Zugzwang152, Comments to *TV Shows on DVD Cost Too Much*, ANANDTECH FS. (Dec. 10, 2002), http://forums.anandtech.com/archive/index.php/t-942038.html.

160. *Accessible Book*, OPEN LIBRARY, http://openlibrary.org/subjects/accessible_book (last visited July 14, 2013).

161. *See, e.g.*, *Average Book Prices 2012*, LAKELAND LIBRARY, http://tln.lib.mi.us/dept/technical-services/acq/files/AverageBookPrices2012.pdf (last visited Aug. 8, 2013).

articles, the Social Science Research Network ("SSRN") offers hundreds of thousands of full-text, zero-price papers.[162] Per-article prices in the past (depending on the journal) generally ranged from $10 to $40; using that estimate, amassing the equivalent to the SSRN's library would previously have cost anywhere from $3.5 to $14 million.[163] Zero-price software options have multiplied as well, from Google's SaaS products to Sun Microsystems' MySQL database management system.[164]

1. The New Models: Multisided Markets and Freemium Access

Following the explosion of zero-price, legitimate content, two for-profit business models have gained prominence. The first, frequently referred to as "ad-supported," relies on a two-sided market structure.[165] On one side of the market are consumers, who are able to access zero-price content that is accompanied by advertisements.[166] On the other side are firms that pay the content provider for advertisement space.[167]

The second model, generally known as "freemium" allows content providers to price discriminate by offering one version of their platform (typically with fewer products, more advertisements, bandwidth limitations, or some combination of the three) for $0.00, while offering a premium version of the platform at a positive price.[168] For example, Hulu adopted a hybrid freemium model consisting of a stripped-down, ad-supported, zero-price version and a paid-subscription (albeit also ad-supported)[169] service dubbed "Hulu Plus."

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162. *Search eLibrary*, SSRN, http://papers.ssrn.com/ (last visited July 14, 2013).

163. Of course, a portion of the articles available on SSRN are works in progress, arguably lowering their value.

164. *See* Benjamin Edelman, *Priced and Unpriced Online Markets*, 23 J. ECON. PERSPS. 21, 26 (2009) (providing examples of various online services that are funded by bundled offerings).

165. MICHAEL VOGELSANG, DIGITALIZATION IN OPEN ECONOMIES: THEORY AND POLICY IMPLICATIONS 64–77 (2010) (describing the general dynamics of, summarizing the literature on, and modeling the development of a business strategy for two-sided markets).

166. *See* United States v. Am. Soc'y of Composers, Authors & Publishers, 627 F.3d 64, 69–70 (2d Cir. 2010) (explaining that online content firms generate revenue primarily via advertisements).

167. For a discussion of ad-supported services, see Edelman, *supra* note 164, at 25–26.

168. *See* Koen Pauwels & Allen Weiss, *Moving from Free to Fee: How Online Firms Market to Change Their Business Model Successfully*, 72 J. MARKETING 14 (2008) (providing a general overview of pricing options faced by digital content providers who wish to charge positive prices).

169. *More About Hulu*, HULU, http://www.hulu.com/about/media_faq#hulu-plus (last visited July 14, 2013).

In software markets, Google's SaaS email service Gmail[170] and Sun's MySQL[171] provide somewhat similar examples.

These new business models exhibit two unique, interrelated aspects that have gone largely unexplored by copyright scholars thus far. First, the zero-price content now being offered, while nominally not "owned" by end users, is converging on outright ownership in terms of the control and rights it allows end users. Second, the primary source of copyright-based revenues under these models has become usage, rather than a one-time wealth transfer in exchange for outright ownership.

a. Pseudo-ownership Control

The basic two-sided, ad-supported business model itself is not particularly new, having appeared historically in various iterations, including newspapers, radio, and television. And at least some of those (e.g., radio and broadcast television) offered content at a price of $0.00. One novel aspect of the newest wave of Internet-based, zero-price services, however, is the degree of control over consumption they grant to end users. The old-model ad-supported content offerings that did grant ownership-type control did not do so at zero prices—almost all real-space newspapers, for example, still charged (and continue to charge) subscription fees. The zero-price, real-space models, on the other hand, relegated end users to a relatively passive role. This helps to explain why the introduction of home recorders like the Betamax was so hotly contested by copyright holders:[172] even relatively small incremental increases in end user control (i.e., the ability to time and space shift) represented a threat to the prevailing business model.

The new zero-price models, however, grant users control rights that begin to converge on ownership. Whereas even Betamax users remained dependent on content providers to preselect and deliver programs during the time and through the television channels available to the end user, the new model allows end users to instantly access programs originally delivered at any time[173] and via a

170. The Gmail freemium model consists of an ad-supported, zero-price service and an ad-free pay service designed for businesses. *Pricing—Google Apps for Business*, GOOGLE, http://www.google.com/enterprise/apps/business/pricing.html (last visited July 14, 2013).

171. *See* Edelman, *supra* note 164, at 26 ("Sun Microsystems offers the widely used MySQL database at no charge—but consulting, training, and technical support all have fees.").

172. *See supra* notes 44–47 and accompanying text (describing the history of Betamax and its relevance to copyright law).

173. Hulu, for example, has offered multiple zero-price programs that originally aired as early as the 1920s—well before most of its users were born. *Browse TV Shows*, HULU, http://www.hulu.com/browse/tv?src=topnav (last visited July 14, 2013) (filter by decade).

multitude of channels[174] that end users may or may not have originally been able to access. Furthermore, whereas the old-style model in the era of analog home recording still required end users to essentially transfer content from one medium (broadcast) to another (magnetic-tape storage) to allow time and space shifting, the new model does not. Instead, it allows for on-demand time shifting, space shifting, pausing, resetting, and a host of other features in the original content format itself. To take one specific example, there is little practical difference from the end-user point of view between constructing a customized playlist of songs to stream on Spotify[175] and that same end user purchasing those songs and constructing a customized playlist of songs on her own hard drive. Spotify even allows importing owned files from an end user's hard drive directly into the Spotify platform, further blurring the old ownership-access dichotomy.

Some would argue that comparing the services identified as examples above (Spotify, Hulu, Google's SaaS offerings, and the like) to traditional ownership-based transactions is an "apples to oranges" comparison. Admittedly, access is not precisely the same as ownership. But the new zero-price model of *A*—adopted in response to the constant downward pricing pressure created by a zero-price option *B*—has blurred such distinctions nearly to the point of rendering them obsolete. In their place is a form of "pseudo-ownership" with substantial implications for the practice and study of copyright law.

b. Usage-Based Licensing Revenues

The second unique aspect relevant here is that copyright-related revenues are generated quite differently in intangible models than in real-space models. Under the prevailing real-space model of ownership, the content provider generates income by collecting a one-time, upfront payment. Under the pseudo-ownership, ad-supported model, however, revenues are based on usage.[176] And to the extent some freemium models contain an ad-supported, zero-price element, that element similarly generates revenues based on usage. Furthermore, even the freemium aspect depends to some degree (albeit indirectly) on usage rates; it operates on the assumption that

174. The same service has offered programs that initially aired on networks in Australia, Britain, Japan, and a multitude of other countries. *Id.* (filter by network).

175. *See supra* notes 152–57 and accompanying text (describing the Spotify model).

176. "Usage" can be measured by a variety of metrics, from bandwidth consumption, to number of views per work, to the amount of time spent consuming a work or within the service platform.

some customers lured into using a zero-price version may eventually trade up to a paid version.

To illustrate the difference, consider the following example. Columbia Records collected roughly $6 for each single of Nickelback's "How You Remind Me" it sold in 2002.[177] Regardless of a consumer's usage—whether she listened to the song one time or one hundred times—Columbia's revenue was $6. Under the new model, however, Columbia could collect anywhere from a few cents (in the case of a listener who accesses the song once) to hundreds of dollars (in the extreme case of a listener who accesses the song thousands of times). The key point is that in zero-price legitimate-content markets, *usage*, not a single sale, has become the touchstone of copyright revenues.

2. Zero-Price Creative Labor Markets

While usage has become the touchstone of copyright revenues, many content providers—for-profit and nonprofit alike—now offer content creators a means of distribution yet provide them with little or no financial remuneration. Nonprofit entities, perhaps unsurprisingly, have begun frequently to attract and use this source of low-cost labor en route to offering substantial amounts of zero-price content. Funding here is generated by a variety of sources. Some, like for-profit firms, adopt multisided or freemium models. Others look elsewhere. The Khan Academy, for example, which offered over 4000 video lectures viewed over 175 million times as of 2012, received donations and grants from individuals, the Bill & Melinda Gates Foundation, Google, and others.[178] Online encyclopedia Wikipedia similarly functions on donations, maintaining an advertisement-free environment.[179] And it is not only nonprofit firms that have adopted this model—the Berkeley Electronic Press, SSRN, hosts of nonmonetized blogs, and a multitude of others are among for-profit providers that leverage zero-price creative labor. Finally, and more controversially, hackers and programmers have taken up the mantle of "free culture" activism by creating platforms for online file sharing that, unlike Napster, are not driven by profit seeking.

The upshot of these developments is that, for the first time in history, those who wish to supply content at a price of zero for

177. *See* DeGusta, *supra* note 157 (displaying price data for albums and singles since the 1970s). The example was chosen due to its status as the top-selling single of 2002, rather than any personal affinity for it on the part of this author.

178. KHAN ACAD., http://www.khanacademy.org/ (last visited July 14, 2013).

179. WIKIPEDIA, http://www.wikipedia.org/ (last visited July 14, 2013).

noneconomic reasons or as part of a barter system[180] (i.e., without receiving direct pecuniary compensation for their labor) can realistically do so in a scalable manner.[181] This holds true as to both legitimate and infringing content. But for present purposes, most salient is the fact that individuals have responded to these opportunities by engaging in widespread creative production and distribution. Thus, these platforms hold important implications for copyright's constitutionally mandated goal of incentivizing creativity.[182]

C. Behavioral Economics and Consumer Psychology Research on Zero Prices: Overview and the "Zero-Price Effect"

Neoclassical economics, with its assumption of a "perfectly rational, utility maximizing, narrowly self-interested" individual,[183] employs standard models that assume linear utility.[184] Under this view, utility, or how much value a consumer derives from a good or service, does not vary with price. A consumer values a widget at, for example, $10 whether its price is $5 or $15. So long as prices move downward in tandem along demand curves with equal slopes, a change in the price of one competing product to zero should have no substitutive effect on choices between the two products.[185]

The standard account and model, however, leave out one very important factor: the "magic" of zero prices. Recent research in

180. For a zero-price P2P file-sharing network to function, it requires at least some users to make files available for others to download free of charge—if all end users were pure consumers, the network would fail for lack of supply. Some have theorized that this sharing can be explained as an informal quid pro quo, or barter, exchange ("I'll make my files available for you to download if you do the same for me."). *See, e.g.*, Ryan Porter & Yoav Shoham, *Addressing the Free-Rider Problem in File-Sharing Systems: A Mechanism-Design Approach*, STAN. U. COMPUTER SCI. DEP'T, http://ai.stanford.edu/~shoham/www%20papers/p2p-EC04.pdf (last visited Aug. 8, 2013) (identifying more efficient file-sharing mechanisms that can counteract the free-riding problem).

181. *See* Nandi & Rochelandet, *supra* note 51, at 21 (noting the success and prevalence of P2P networks despite free riding).

182. *See infra* Part IV.B (examining the supply side of the music industry).

183. Some have dubbed this curious creature "*homo economicus,*" wryly inferring that she does not exist outside the abstract world of neoclassical economics. *See, e.g.*, Max Huffman, *Marrying Neo-Chicago with Behavioral Antitrust*, 78 ANTITRUST L.J. 105, 115 (2012) (describing the inception of the behavioral economics movement).

184. *See, e.g.*, Michèle Sennhauser, *Why the Linear Utility Function Is a Risky Choice in Discrete-Choice Experiments* 1 (Univ. of Zurich Socioeconomic Inst., Working Paper No. 1014, 2010) ("The utility function is usually assumed to be linear in its attributes.").

185. Of course, the net downward move in prices could induce additional customers to move from purchasing nothing to purchasing something, but—using the standard model—there should be no relative change in demand as between the two positive choices.

behavioral economics has demonstrated that when faced with a comparison between a zero-priced option and a positively priced option, "dramatically more participants choose the cheaper option, whereas dramatically fewer participants choose the more expensive option. Thus, people appear to act as if zero pricing of a good not only decreases its cost but also adds to its benefits."[186] This effect exists even where the standard cost-benefit analysis, or an alternative "ratio-based" cost-benefit analysis, would seem to favor the positively priced product.[187] Furthermore, the effect cannot be explained away by an absence of transaction costs (i.e., the objection that consumers might lopsidedly favor zero-priced goods because nonprice transactions do not entail many, if any, costs of transacting); mapping difficulty (i.e., the potential explanation that consumers prefer zero-price options due to an inability to evaluate the utility of hedonic goods); or (at least under some conditions) social norms.[188] In sum, under at least some circumstances, utility does not map linearly onto prices; rather, the positive affect associated with zero prices causes an outsized increase in valuation as indicated by consumers' revealed preferences.[189] Researchers have dubbed this the "zero-price effect."[190]

D. Further Behavioral Sciences Research on Zero Prices

Beyond the zero-price effect, behavioral economists and consumer psychologists have begun to identify other unique attributes

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186. Kristina Shampan'er et al., *Zero as a Special Price: The True Value of Free Products*, 26 MARKETING SCI. 742, 742 (2007). The basic structure of the experiments that first confirmed the zero-price effect involved two different sets of prices for the same two products. The first set of prices generally consisted of two positive prices (e.g., $0.01 and $0.15); the second set consisted of one positive and one zero price, with both prices having been reduced as compared to the first set (e.g., $0.00 and $0.14).

187. *Id.* at 747 ("[T]he results of Experiment 2 demonstrate that valuations of free goods increase beyond their cost-benefit differences . . . .").

188. *Id.* at 749–50.

189. Interestingly, this positive affect does not necessarily occur in consumers faced with zero-value, nonprice attributes. In fact, at least where consumers are faced with at least two options, the shift from a positive value to a zero value can actually cause consumers to prefer the option with the positive-value nonprice attribute—even where that value is objectively undesirable. *See* Mauricio M. Palmeira, *The Zero-Comparison Effect*, 38 J. CONSUMER RES. 16, 16 (2011) (arguing that the removal of a positive value can eliminate a useful reference point for consumers, thereby causing what Professor Palmeira calls the "zero-comparison" effect).

190. *See* ARIELY, *supra* note 10, at 55–72. The overwhelming attractiveness to consumers of zero prices can also be witnessed in myriad business settings. For just one example, consider AT&T's entry into the issuing side of the credit-card market in 1990. Its "Universal Card" was the first large-scale card to offer a $0.00 annual fee. This feature proved popular enough that, in the wake of AT&T's entry, "over 400 other issuers began selectively waiving their own annual fees to keep customers from defecting to AT&T." Dennis W. Carlton & Alan S. Frankel, *The Antitrust Economics of Credit Card Networks*, 63 ANTITRUST L.J. 643, 653 (1995).

of and reactions to zero prices. Unfortunately, the field of intangible intellectual property–based goods remains largely underexplored in this regard.[191] And the broader field of zero-price research, nascent as it is, is still evolving.[192] This growing body of research does, however, hold important ramifications for future copyright law and scholarship.

1. Social Norms, Market Norms, and Labor Allocation

Where wages are zero in dollar terms, people generally apply social—rather than market—norms in making decisions about whether to engage in labor or how much effort to put forth. Drawing on Alan P. Fiske's "Relational Models Theory" of social interactions,[193] Professors Heyman and Ariely have demonstrated that potential market participants' incentives to engage in effort depend in part on which of two types of markets is at play—monetary markets or "social markets."[194] Contrary to what the neoclassical model would predict, Heyman and Ariely found that increasing payments from zero to a positive (but low) amount in a monetary market may actually *decrease* the amount of effort participants were willing to exert.[195] This effect was not present, however, in a social contract that involved no monetary amounts (or mention thereof).[196] It should be noted that their empirical analysis did not explicitly address content markets; instead, it utilized three experiments involving loading a sofa into a van,[197] repeatedly dragging a digital ball across a computer screen,[198] and attempting to solve puzzles in a laboratory setting.[199] Their study

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191. *See infra* Part IV.C.

192. *See, e.g.*, Ahmed Driouchi, Youssef Chetioui & Meryem Baddou, *How Zero Price Affects Demand?: Experimental Evidence from the Moroccan Telecommunication Market* 20 (Munich Pers. RePEc Archive, Working Paper No. 32352, 2011), *available at* http://mpra.ub.uni-muenchen.de/32352/1/MPRA_paper_32352.pdf (finding that affect does not completely explain the zero-price effect and arguing that "the zero-price model remains a complex model, and much additional work is needed to understand the complexities of this model in the marketplace").

193. Fiske's theory divided human interactions into four types: communal sharing, authority ranking, equality matching, and market pricing. *See generally* ALAN P. FISKE, STRUCTURES OF SOCIAL LIFE: THE FOUR ELEMENTARY FORMS OF HUMAN RELATIONS 3–12 (1991). Subsequent empirical research has generally reinforced the theory. *See* Nick Haslam, *Research on the Relational Models: An Overview*, *in* RELATIONAL MODELS THEORY: A CONTEMPORARY OVERVIEW 27, 52 (Nick Haslam ed., 2004) ("[T]he theory has stood up quite well to comparisons with other theories.").

194. James Heyman & Dan Ariely, *Effort for Payment: A Tale of Two Markets*, 15 PSYCHOL. SCI. 787, 787 (2004).

195. *See id.* at 791.

196. *Id.*

197. *Id.* at 788.

198. *Id.* at 790.

199. *Id.* at 791.

did, however, focus on situations in which "payment is independent of effort," a trait that also characterizes the creation level of content markets.[200]

2. Consumption Choices in Social Markets

Somewhat similarly, where prices are zero (e.g., in a social market), consumers appear to apply social norms instead of market norms in deciding whether to acquire a product. One study, for example, showed that when students were offered a piece of candy at a price of $0.01, each student took an average of about four pieces. When offered the same candy at a price of $0.00, however, almost none of the students took more than a single piece.[201] The standard economic account holds that, as price increases, output demanded decreases, yet these revealed preferences demonstrate the remarkable phenomenon of increasing output at increasing prices—a demand curve shaped something like a capital "D," instead of the typical downward-sloping line. The behavior was explained by the take-only-one-piece social norm brought into play by lowering the price of the candy to zero and thereby creating a social market. More intuitively, at the group level, the study also showed that a greater percentage of consumers opted to acquire the candy when it was offered at a zero price.[202]

3. Overconsumption and Hoarding

Finally, consumers reacting to zero prices sometimes engage in behavior that appears to be wasteful or inefficient. More specifically, research suggests that people often engage in overconsumption and hoarding when products or resources are available to them at a price of zero. Such behavior is particularly likely to occur where individuals are able to externalize some or all of the costs of their behavior.

For example, economists studying the use of public roads have long recognized that absent any sort of "road pricing," drivers will tend to overuse roads, causing congestion to rise above efficient levels.[203]

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200. *See supra* Part II.A.

201. Shampan'er et al., *supra* note 186, at 743–50 (discussing the findings contained in Dan Ariely, Uri Gneezy & Ernan Haruvy, Social Norms and the Price of Zero (2006) (unpublished manuscript) (on file with MIT)).

202. *Id.*

203. *See, e.g.*, ALFRED C. PIGOU, THE ECONOMICS OF WELFARE 186 (1921) (arguing that roads are overused because drivers are able to externalize the congestion costs they create); Robin Lindsey, *Do Economists Reach a Conclusion on Road Pricing? The Intellectual History of an Idea*,

Also within the field of transportation studies, some scholars studying the usage of airport slots[204] contend that "serious economic inefficiencies," including congestion, appear where prices are not set at cost by market forces.[205] Similarly, in the case of environmental pollution, individuals tend to treat the environment as a "free" and limitless good, thus leading to inefficient levels of "consumption" of that good.[206] As a final example, economic studies of the obesity epidemic point out that consumers have increasingly engaged in massive caloric overconsumption in the past four decades, due at least in part to the fact that health insurance and governmental programs allow individuals to externalize most or all of the costs of becoming obese—in a sense, the condition becomes "free."[207]

Along these same lines, some scholars[208] and anecdotal evidence[209] suggest that zero prices may induce "hoarding" behavior—where a consumer's "current inventory of an item exceeds his inventory in previous periods while his expected consumption rate (taste) remains constant."[210] Somewhat remarkably—and of vital importance for present purposes—this behavior occurs even absent conditions of scarcity.[211] While these findings may on their face appear

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3 ECON J. WATCH 292 (2006) (summarizing the historical and current debate over correcting the congestion market failure).

204. "Slots" are industry shorthand for an allocated time and place where an aircraft can take off or land from an airport.

205. Philip Booth, *Foreword* to DAVID STARKIE ET AL., A MARKET IN AIRPORT SLOTS 12 (Keith Boyfield ed., 2003).

206. *See generally* PAUL L. SCHUMAN, NATURAL RESOURCE UTILIZATION & POLLUTION OF THE ENVIRONMENT 18 (2002), *available at* http://tinyurl.com/kxnyt6p ("Why do we pollute? We treat the natural environment as a 'free good' . . . . We treat the natural environment as an 'unlimited good.' ").

207. *See, e.g.*, KATHRYN M. SHARPE, UNDERLYING CONTEXTUAL EFFECTS LEADING TO OVER CONSUMPTION: EXTREMENESS AVERSION AND BUNDLING 2 (2011) ("Because the cost is spread over all tax payers and insurance premium holders, obesity imposes negative externalities on much of society."); Eric A. Finkelstein et al., *Economic Causes and Consequences of Obesity*, 26 ANN. REV. PUB. HEALTH 239, 239 (2005) (explaining the economic repercussions of obesity epidemic).

208. *See, e.g.*, Edelman, *supra* note 164, at 21–22 ("[O]verconsumption, scarcity, and even hoarding [can occur] when resources are provided without charge."); *cf.* Ronald Stiff et al., *Scarcity and Hoarding: Economic and Social Explanations and Marketing Implications*, 2 ADVANCES CONSUMER RES. 203, 203 (1975) ("Social and economic theories provide explanations for hoarding demonstrating its occurrence under specialized conditions not always requiring scarcity.").

209. *E.g.*, Raymond, Comment to *Picking Up Free Items in Public, Hoarding Ketchup: Thievery or Frugality?*, DIGERATI LIFE (Aug. 26, 2007, 2:20 PM), http://www.thedigeratilife.com/blog/pick-up-free-items-hoard-ketchup/ ("I just ended up with a drawer full of [ketchup, soy sauce, and hot sauce packets] for no reason at all.").

210. Stiff et al., *supra* note 208, at 203.

211. *See id.* ("Scarcity alone is insufficient to explain [hoarding behavior].").

to run somewhat counter to Ariely, Gneezy, and Haruvy's research,[212] it must be remembered that the latter was not intended to prove that consumers observe self-restraining or Pareto optimal social norms in all circumstances, but simply that social norms (for better or worse) tend to govern nonprice markets. In sum, the common thread tying overconsumption and hoarding together is that, where consumers can externalize some or all of the costs of a product—and particularly where the product is offered at zero price—they are much more likely to engage in such behaviors.

IV. COPYRIGHT FREECONOMICS: IMPLICATIONS FOR COPYRIGHT LAW

The sweeping changes in the ways our society creates, reproduces, distributes, and consumes content hold radical implications for copyright-market participants and for copyright law itself. Not surprisingly, the transition from the age of content scarcity to the era of zero-price, infringing content sparked a torrent of debate that has yet to quiet.[213] On one end of the spectrum, copyright minimalists—overoptimistically, in retrospect—heralded the prospect of a post-copyright world.[214] At the other end, the pro-copyright contingent argued that the advent of online file sharing threatened to stifle creativity and authorship.[215]

Given the benefit of a decade's worth of hindsight, however, it seems that both camps may have missed the mark in attempting to predict the state of content and copyright in the twenty-first century. The world has certainly not moved beyond copyright; if anything, copyright law has become much more central to the everyday lives of average citizens. Recent skirmishes in the "Intellectual Property Wars"[216] have captured the public's ire and attention, and copyright issues are now frequently splashed across the front page of national

212. *See* Shampan'er et al., *supra* note 186, at 743.

213. *Compare* JOHN TEHRANIAN, INFRINGEMENT NATION: COPYRIGHT 2.0 AND YOU 127–28 (2011) (proposing an overhaul of copyright law in order to better reconcile the law with prevailing social norms), *with* Peter S. Menell, Book Note, *Infringement Conflation*, 64 STAN. L. REV. 1551, 1580–81 (2012) (arguing that policy proscriptions cannot overlook the widespread infringement occurring in contemporary markets).

214. *E.g.*, Ku, *supra* note 3, at 269 ("In this process of creative destruction, digital technology and the Internet strike at the foundation of copyright and the industries built upon copyright by eliminating the need for firms to distribute copyrighted works and for exclusive property rights to support creation.").

215. *E.g.*, Liebowitz, *supra* note 2, at 3–4 (testing the hypothesis that file sharing harms copyright owners).

216. *See supra* note 46 (regarding the bitter format wars of the 1980s).

newspapers.[217] On the other hand, we have seen no perceptible reduction in creative output.[218] In fact, technological innovations have paved the way for large-scale entry by authors and artists into creative markets,[219] greatly benefiting both consumers and creators.[220] And at least some evidence shows the same to be true for intermediate-level content distributors.[221]

Many scholars and commentators did correctly predict at least one development: the failure of the content industry to correct, through mass prosecution and public-service advertising campaigns, the growing gap between copyright law and social norms associated

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217. *E.g.*, Jenna Wortham, *A Political Coming of Age for the Tech Industry*, N.Y. TIMES (Jan. 18, 2012), http://bits.blogs.nytimes.com/2012/01/18/techies-plan-to-take-sopa-protest-to-the-streets/?ref=jennawortham (describing virtual and physical protests in response to antipiracy bills).

218. Raymond Shih Ray Ku et al., *Does Copyright Law Promote Creativity? An Empirical Analysis of Copyright's Bounty*, 62 VAND. L. REV. 1669, 1720 (2009) (finding that the only variable that consistently correlates with increasing copyright registrations—a commonly used proxy for creative output—is increasing population size); *see also* Laura Hazard Owen, *Ebook Sales Way Up in 2011; Overall Trade Book Sales Roughly Flat* (July 18, 2012, 12:01 AM), http://paidcontent.org/2012/07/18/ebooks-are-now-the-most-popular-format-for-adult-fiction/ ("While revenues were down slightly, unit sales [of print and ebooks] were up 3.4 percent, to 2.77 billion books sold in 2011."); *Publishing Market Shows Steady Title Growth in 2011 Fueled Largely by Self-Publishing Sector*, BOWKER (June 5, 2012), http://www.bowker.com/en-US/aboutus/press_room/2012/pr_06052012.shtml (stating that "traditional print book output grew six percent in 2011"); Andi Sporkin, *Bookstats 2013 Now Available*, ASS'N OF AM. PUBLISHERS (May 15, 2013), http://www.publishers.org/press/103/ (stating that ebook sales rose over forty-five percent in 2012).

219. *See, e.g.*, Steven A. Hetcher, *Using Social Norms to Regulate Fan Fiction and Remix Culture*, 157 U. PA. L. REV. 1869, 1869–70 (2009) ("Fan fiction and remix culture have been and are continuing to explode both in terms of social relevance and sheer quantity of new works produced and available."); Larry E. Ribstein, *From Bricks to Pajamas: The Law and Economics of Amateur Journalism*, 48 WM. & MARY L. REV. 185, 192–93 (2006) ("Blogs . . . allow individuals to test their skills and marketability rather than have to get a job from one of a limited number of media firms."); *Top 100 Defining Cultural Moments of the Noughties*, TELEGRAPH, Oct. 30 2009, http://www.telegraph.co.uk/culture/6466684/Top-100-defining-cultural-moments-of-the-00s-noughties.html (observing that "everyone's an artist now"). *See generally* Lawrence Lessig, *Free(ing) Culture for Remix*, 2004 UTAH L. REV. 961, 975 ("Digital technology could radically expand the range of 'creators' who participate in the remix of culture.").

220. The value of self-expression has become ensconced in the literature on both copyright law and the First Amendment. *See, e.g.*, Daniel J. Solove, *The Virtues of Knowing Less: Justifying Privacy Protections Against Disclosure*, 53 DUKE L.J. 967, 1064 (2003) ("Society values free expression and openness . . . ."); Rebecca Tushnet, *Copy This Essay: How Fair Use Doctrine Harms Free Speech and How Copying Serves It*, 114 YALE L.J. 535, 555 (2004) (arguing that the fair use doctrine alone is not enough to prevent copyright law from threatening freedom of expression).

221. Christian Handke, *Plain Destruction or Creative Destruction? Copyright Erosion and the Evolution of the Record Industry*, 3 REV. ECON. RES. ON COPYRIGHT ISSUES 29, 46 (2006) (concluding that the recent erosion of record sales in Germany prompted a substantial increase in market entries by small firms).

with infringing content.[222] A decade after it began, this enforcement-and-persuasion strategy[223] has been largely acknowledged as a failure.[224] But legitimate-content providers have not simply abandoned efforts to remain competitive. Instead, they have shifted toward—and converged upon—what might be called an "adaptation" strategy,[225] devising and implementing revolutionary business models that harness the disruptive power of creative advances in content technologies.[226]

The shift to widely accessible zero-price content has ushered in the age of "copyright freeconomics." The blurring of the old distinctions between ownership and access; the shift from traditional monetary, market-based decisionmaking and incentives toward social markets governed by an entirely different set of rules and incentives; the "irrational" ways individuals react to zero prices—all of these aspects of copyright freeconomics will challenge the old methodology under which copyright law is studied and applied. It is not the goal of this Article to identify and address every possible impact the shift to copyright freeconomics will have; instead, the following Subparts set forth arguably the most immediately salient and necessary changes and conclude with a call for further theoretical and empirical scholarship.

A. The Demand Side: On Consumer Substitution and Damages

The rise of access- or usage-based business models that grant pseudo-ownership over content has obfuscated copyright law's deep-

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222. *See, e.g.*, Lori A. Morea, *The Future of Music in a Digital Age: The Ongoing Conflict Between Copyright Law and Peer-to-Peer Technology*, 28 CAMPBELL L. Rev. 195, 206 (2006) (arguing that the "limited effectiveness of the RIAA's . . . strategy" makes it "necessary to identify other means of deterring music piracy online"); Andrew C. Humes, Note, *The Day the Music Died: The RIAA Sues Its Consumers*, 38 IND. L. REV. 239, 265 (2005) (noting that even in the face of RIAA lawsuits, "there are millions of consumers today who download copyrighted music from Internet related services without paying anything for it"). *But see* Lemley & Reese, *supra* note 107, at 1432 (arguing that "enforcement against direct infringers [is] worth a try"). On the persistent gap between copyright law and norms, see Tehranian, *supra* note 4.

223. Mark Schultz proposes four potential methods for dealing with a law/norm divergence: "Surrender: Changing the Law or Abandoning Enforcement," "Deterrence: Ramping Up Enforcement and Penalties," "Adaptation: Finding Other Ways to Combat the Problem," and "Persuasion: Changing Norms." Mark F. Schultz, *Reconciling Social Norms and Copyright Law: Strategies for Persuading People to Pay for Recorded Music*, 17 J. INTELL. PROP. L. 59, 59 (2009).

224. James DeBriyn, *Shedding Light on Copyright Trolls: An Analysis of Mass Copyright Litigation in the Age of Statutory Damages*, 19 UCLA ENT. L. REV. 79, 84 (2012) ("[T]he lawsuits against individuals were largely seen as a failure.").

225. *See* Schultz, *supra* note 223, at 73–78 ("Adaptive strategies certainly have their place in responding to undesirable social norms.").

226. *See supra* Part III.B.1.

rooted distinction between ownership and usage. This change calls into question what the closest legitimate substitute is for infringing content. And that question, in turn, drives damages calculations in copyright-infringement lawsuits.

Copyright enforcement efforts operate under a damages regime that has remained largely unchanged for over three decades. Under the Copyright Act of 1976, copyright holders who allege that their exclusive rights have been infringed and elect to seek monetary damages may pursue one of two paths: (1) "actual damages and any additional profits of the infringer" or (2) statutory damages.[227] Congress further divided the Act's statutory damages into a tripartite structure[228] with three possible monetary ranges for statutory damages awards, the floors or ceilings of which are to be lowered or raised depending upon the defendant's level of mens rea.[229] These ranges operate on a "per work" basis.[230]

The two primary types of damage calculations serve several unique purposes. The actual-damages-plus-profits remedy has two components; a different rationale underlies each. "Damages are awarded to compensate the copyright owner for losses from the infringement"[231]—a compensatory theory. Defendant's profits, however, "are awarded to prevent the infringer from unfairly benefiting from a wrongful act"[232]—a restitutionary theory meant to prevent unjust enrichment. As to both, the copyright owner bears the burden of proving causation (i.e., that the defendant's infringement caused the plaintiff's actual damages or that the defendant's profits were caused by the infringement, respectively).

The primary purposes[233] of statutory damages are (1) compensating plaintiffs for their actual harm suffered and preventing

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227. 17 U.S.C. § 504(a) (2012).

228. For a much more detailed summary of the current U.S. statutory damages regime, as well as a historical examination of statutory damages under the 1909 Act, see Pamela Samuelson & Tara Wheatland, *Statutory Damages in Copyright Law: A Remedy in Need of Reform*, 51 WM. & MARY L. REV. 439, 446–57 (2009).

229. Thus, if an infringer "was not aware and had no reason to believe" that she was infringing, a judge must award between $200 and $30,000 per plaintiff's work that she infringed. 17 U.S.C. § 504(c)(2). The standard range has a slightly higher floor of $750. *Id.* § 504(c)(1). And finally, the ceiling is raised to $150,000 per work for cases in which the copyright holder proves "willful" infringement. *Id.* § 504(c)(2).

230. *See id.* § 504(c).

231. H.R. REP. NO. 94-1476, § 504, at 161 (1976).

232. *Id.*; *accord* 2 PAUL GOLDSTEIN, GOLDSTEIN ON COPYRIGHT § 14:4.1 (3d ed. Supp. 2013) (internal quotation marks omitted) (quoting House Report).

233. As it is contingent on early registration of works with the Copyright Office, the availability of statutory damages under the 1976 Act also serves the tertiary goal of encouraging early registration by copyright holders. *See* 17 U.S.C. § 412 ("[N]o award of statutory

unjust enrichment (goals similar to those of the "actual damages and additional lost profits" remedy) where proof of damages is difficult and (2) punishing infringers and deterring future infringing acts—a punitive purpose.[234] Some scholars have argued that using copyright-damages awards as punishment is inappropriate, reasoning that "the statutory damage framework, as intended by Congress, merely seeks to substitute for actual damages."[235] Courts, however, have almost uniformly applied statutory damages under the 1976 Act so as to serve both compensatory and restitutionary purposes, as well as "[t]he purpose of punitive damages—to punish and prevent malicious conduct."[236]

In assessing both types of damages awards, courts properly take into account the copyright owner's loss caused by the infringement and the infringer's profit or gain (including expenses saved) due to the infringement.[237] Under the actual-damages-plus-additional-profits remedy, the sum of these amounts provides the measure of damages. Given the additional purposes served by statutory damages, these amounts are considered alongside other factors[238] but nonetheless generally play an important role in damages calculations.

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damages . . . shall be made for . . . any infringement of copyright commenced after first publication of the work and before the effective date of its registration, unless such registration is made within three months after the first publication of the work.").

234. *See, e.g.*, Halnat Pub. Co. v. L.A.P.A., Inc., 669 F. Supp. 933, 937 (D. Minn. 1987) (recognizing that courts frequently award amounts that are "*significantly*" higher than the statutory minimum "in order to deter defendants from violating copyright laws"); H.R. REP. NO. 94-1476, at 163 (referring to the "intended deterrent effect" of the statutory damages provision); STAFF OF U.S. COPYRIGHT OFFICE, 86TH CONG., STUDIES PREPARED FOR THE SUBCOMMITTEE ON PATENTS, TRADEMARKS, AND COPYRIGHTS 8–9 (Comm. Print 1960) ("Statutory damages serve a duofold purpose: they prohibit the award of merely nominal damages because of the difficulty in proving actual damages and profits . . . . Secondly, they furnish the deterrence so necessary for prospective infringers."), *available at* http://www.copyright.gov/history/studies/study22.pdf.

235. Depoorter et al., *supra* note 86 at 1266.

236. On Davis v. Gap, Inc., 246 F.3d 152, 172 (2d Cir. 2001). *But see* Kamakazi Music Corp. v. Robbins Music Corp., 534 F. Supp. 69, 78 (S.D.N.Y. 1982) (denying the plaintiff's claim for punitive damages, as "[t]he public policy rationale for punitive damages of punishing and preventing malicious conduct can be properly accounted for in the provisions for increasing a maximum statutory damage award").

237. Alois Valerian Gross, Annotation, *Measure of Damages and Profits to Which Copyright Owner Is Entitled Under 17 U.S.C.A. § 504(b)*, 100 A.L.R. FED. 258, § 3 (1990).

238. "Among the factors for the court to consider in awarding damages are (1) expenses saved and profits reaped by the defendant, (2) revenues lost by the plaintiffs, (3) the deterrent value of the award, and (4) whether the infringement was willful or innocent." Sixx Gunner Music v. Quest, Inc., 777 F. Supp. 2d 272, 274 (D. Mass. 2011) (quoting Polygram Int'l Publ'g, Inc. v. Nev./TIG, Inc., 855 F. Supp. 1314, 1335 (D. Mass. 1994)); *see also* Gnat Booty Music v. Creative Catering of Wadhams, LLC, 761 F. Supp. 2d 604, 609 (E.D. Mich. 2011):

> Courts have wide discretion in determining the appropriate amount, but are urged to consider three main factors: "the expenses saved and profits reaped by the defendants

Calculating the copyright owner's loss or the infringer's gain (in the form of expenses saved)[239] caused by the infringement inherently requires identifying the next best noninfringing substitute for the infringing content.[240] More specifically, in order to determine the "revenues lost by the plaintiff," a court must determine what product the plaintiff would have sold or licensed to the defendant in the hypothetical world that would have existed but for the infringement.[241] "The question is not what the owner would have charged, but rather what is the fair market value."[242] A similar analysis applies to calculating "expenses saved" or "value of use," subject to the proviso that double-counting is not allowed.[243]

> in connection with the infringements, the revenues lost by the plaintiffs as a result of the defendants' conduct, and the infringers' state of mind whether willful, knowing, or merely innocent."

(quoting Boz Scaggs Music v. KND Corp., 491 F. Supp. 908, 914 (D. Conn. 1980))).

239. Of course, the defendant's profits are susceptible of measurement without determination of the closest substitute in the marketplace.

240. Blumcraft of Pittsburgh v. Newman Bros., 337 F. Supp. 859, 862–63 (S.D. Ohio 1971) (finding that, where plaintiff failed to show that defendant's infringing product was a substitute for plaintiff's product, plaintiff had failed to show any actual damages); *cf.* Amsinck v. Colum. Pictures Indus., Inc., 862 F. Supp. 1044, 1049 (S.D.N.Y. 1994) (stating that "[c]ourts look to whether the 'copying' can be used as a substitute for the plaintiff's original work" in the fair use context).

241. *See, e.g.*, Thornton v. J Jargon Co., 580 F. Supp. 2d 1261, 1276 (M.D. Fla. 2008) ("[A] claim for lost profits may include a retroactive license fee measured by what the plaintiff would have earned by licensing the infringing use to the defendant."); Country Rd. Music, Inc. v. MP3.com, Inc., 279 F. Supp. 2d 325, 331 (S.D.N.Y. 2003) ("[T]he inquiry is an objective one into the 'fair market value,' the result of 'negotiation between a willing buyer and a willing seller,' for a license for 'the use the infringer made,' *not* 'the highest use for which plaintiff might license' . . . ." (quoting On Davis v. The Gap, Inc., 246 F.3d 152, 166 & n.5, 172 (2d Cir. 2001) (citations omitted)); *In re* Indep. Serv. Orgs. Antitrust Litig., 23 F. Supp. 2d 1242, 1249 (D. Kan. 1998) ("A copyright owner's actual damages are equal to the profits it would have earned but for the defendant's infringement."); Banff Ltd. v. Express, Inc., 921 F. Supp. 1065, 1068–69 (S.D.N.Y. 1995) (assessing the degree to which the legitimate and illegitimate goods were substitutes for one another).

242. *On Davis*, 246 F.3d at 166.

243. The Seventh Circuit, in *Deltak, Inc.*, created the "value of use" damage calculation method to provide a remedy where lost profits are too difficult to quantify, the defendant made no profits, and the copyright owner's failure to register her work precludes the statutory damages route. Deltak, Inc. v. Advanced Sys., Inc., 767 F.2d 357, 360–64 (7th Cir. 1985); *see also* Kevin Bendix, Note, *Copyright Damages: Incorporating Reasonable Royalty from Patent Law*, 27 BERKELEY TECH. L.J. 527, 535 (2012) (discussing the "value of use" method established in *Deltak, Inc.*).

1. Destruction of the Ownership/Usage Dichotomy

Content end users have already begun to recognize the destruction of copyright's old ownership/usage dichotomy.[244] As the title of a recent blog post wryly observed, "I never owned any music to begin with."[245] Increasingly, the same could be said for many end users of other forms of content. Zero-price offerings that offer access in place of outright ownership can now act as ready substitutes for owned copies.[246] Yet, while end users have been quick to note the shift, copyright scholars and courts have been (unfortunately) slower to do so.

a. Demand-Side Substitution

In the digital realm, thus far, courts have assumed that "a purchased copy" is a "direct substitute" for downloading an infringing copy.[247] The new zero-price models for content delivery, however, grant users control rights that begin to converge on ownership.[248] These pseudo-ownership products and services, rather than traditional owned goods, are, in many cases, likely the closest substitutes for infringing content. The empirical literature on digital copyright infringement, which has an unfortunately persistent tendency to compare the online distribution and consumption of infringing content solely to ownership-transferring sales—and even, anachronistically, to physical media[249]—cannot yet verify or deny this hypothesis. Yet anecdotal evidence,[250] statements by the creators of some zero-price, legitimate-content providers that their services were intended to compete directly with piracy,[251] and even evidence that

244. *See* Emily White, *I Never Owned Any Music to Begin with*, NPR (June 16, 2012, 6:13 AM), http://www.npr.org/blogs/allsongs/2012/06/16/154863819/i-never-owned-any-music-to-begin-with.

245. *Id.*

246. *Id.* ("If I wanted to listen to something I didn't already have in my patchwork [music] collection, I could stream it on Spotify.").

247. *See, e.g.*, BMG Music v. Gonzalez, 430 F.3d 888, 890 (7th Cir. 2005) (Easterbrook, J.).

248. *See supra* Part III.B.1.a.

249. *E.g.*, Martin Peitz & Patrick Waelbroeck, *The Effect of Internet Piracy on CD Sales: Cross-Section Evidence*, 1 REV. ECON. RES. ON COPYRIGHT ISSUES 71, 72 (2004) (examining the relationship between music downloads and tangible music sales).

250. *See, e.g.*, Shawn Powers, *Why Hulu Plus Sucks, and Why You Should Use It Anyway*, LINUX J. (Dec. 16, 2010), http://www.linuxjournal.com/content/why-hulu-plus-sucks-and-why-you-should-use-it-anyway/ (observing that the advent of a freemium television provider would likely impact the author's torrenting behavior).

251. *See* Covert, *supra* note 153 (describing how Spotify was designed to be "better than piracy")

infringing providers attempt to compete with legitimate ad-supported or freemium services[252] all suggest that this is likely the case. Furthermore, it also seems likely that the type of individual who would engage in zero-price digital infringement may be particularly attracted to the "magic" of zero prices[253] and would therefore turn to new-model content providers as the next-closest substitute. And the trend toward combining ownership and access appears likely to continue in the future,[254] making it even more likely that zero-price, legitimate content will assume the role of the closest substitute for zero-price, illegitimate content.

b. Suggested Analytical Framework

Given that zero-price-access-based content offerings are likely closer substitutes for obtaining infringing copies than obtaining actual ownership of legitimate copies in many instances, courts attempting to assess actual or statutory copyright damages will need to account for the difference in revenue sources between the new models and the old. Again, revenue from zero-price content offerings is frequently derived from advertising,[255] and advertising revenue depends in turn upon how much attention users (and thus potential consumers) pay to a given advertisement.[256] Thus, depending upon the particular substitute, the defendant's access or usage rates can assume primary relevance. Should courts persist in using transfer of ownership as the sole point of comparison, they run the risk of either overcompensating plaintiffs where usage rates are extremely low (or even nonexistent) or undercompensating plaintiffs where usage rates are high. In some instances, data on defendants' actual usage of works will be obtainable by subpoena.[257] But since the defendant will almost always be best situated to produce evidence of actual usage, decision theory suggests that the proper analytical framework would place the initial burden on the plaintiff to make a threshold showing of some workable measure of damages (e.g., average consumer usage), then shift the

252. Janko Roettgers, *How LimeWire's Grapevine Tried to Compete with Spotify*, GIGAOM (Oct. 27, 2011, 12:03 PM), http://gigaom.com/2011/10/27/limewire-grapevine-subscription-service/ (describing how LimeWire attempted to develop a paid-subscription service).

253. *See supra* notes 184–88 and accompanying text.

254. *See* Roettgers, *supra* note 252 ("[Content providers] may need to think about combining access with ownership.").

255. As noted *supra*, freemium models tend to include at least some advertisements even in the paid versions of their services.

256. *See supra* Part III.B.1.b.

257. Some content platforms, iTunes for instance, record the number of times a work is accessed.

burden to the defendant to try to rebut those figures by evidence of her actual usage.

2. The Non-usage Defense

Consumers facing zero-price options—particularly where they can externalize the costs entailed by those options—often engage in overconsumption or hoarding-type behavior.[258] In content markets, externalizing can occur where an individual consumes an infringing work she obtained for $0.00, for the costs of creating the work must then be borne by a smaller group of legitimate consumers and (potentially) the author of the work. Once again, the empirical research on this subject in the realm of copyrighted content is generally lacking, though this lacuna is perhaps unsurprising given the nascent nature of both zero-price legitimate-content markets and the behavioral economics and psychology literature on zero-price goods. As to rivalrous goods, at least one study has found revealed preferences that demonstrate a prevailing social norm that limits consumption.[259] The nonrivalrous nature of digitized, copyrighted works, however, likely cuts against the possibility of this norm applying to zero-price content-market transactions. If consumer behavior in these markets instead mimics that in others where goods are seen as "free" and "limitless,"[260] content consumers may frequently engage in overconsumption (i.e., acquiring content that they subsequently do not ever, or very rarely, access) and hoarding (storing same).

These phenomena, if satisfactorily demonstrated, should give rise to a non-usage defense. Put simply, if the next best substitute for infringement is a zero-price, usage-based service, and an end user behaving irrationally were to obtain an infringing copy but never use it (or perhaps use it only very rarely, such that the cost of equivalent legitimate use were de minimis), there would be no quantifiable harm to the copyright owner that could translate into a damages award.[261] Because the defendant never used or accessed the work, the hypothetical but-for-the-infringement scenario still would have yielded

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258. *See supra* Part III.D.3.

259. *See* Kristina Shampan'er & Dan Ariely, *How Small Is Zero Price? The True Value of Free Products* 1 (Fed. Reserve Bank of Bos., Working Paper No. 06-16, 2006), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=951742.

260. *See supra* note 206 and accompanying text (using pollution as an example of overconsumption of a seemingly "free" good).

261. This defense would not apply to defendants who "used" the work by allowing others to make copies of it.

no revenues to the copyright owner as revenue under the new model is derived solely from usage or access. Similarly, the defendant's infringement would not have allowed any avoided costs (not even attention costs), and the value-of-use methodology would be entirely inapplicable. Thus, at least as to the actual-damages-plus-additional-profits remedy, the proper damages award would be zero, or only nominal, damages.[262]

Of course, the additional punitive theory underlying statutory damages could militate toward awarding some positive amount of damages (in order to punish the defendant and deter both the defendant and others from future infringing activities).[263] Here, though, courts must be especially and increasingly careful to avoid running afoul of the constitutional safeguards preventing excessive punitive damages awards. In the two individual file-sharing cases that have actually proceeded to trial, both district courts held that the large damages awards violated the defendants' substantive due process rights.[264] While this new front in the constitutional copyright debate remains an unsettled area of law, the minimal- or zero-harm scenarios that could result as described above would strain even further the guideposts laid down by the Court in *BMW of North America, Inc. v. Gore*[265] and subsequently applied in several recent cases.[266] Since one indicator of unconstitutionality under this line of cases is the ratio of actual harm to damages,[267] any substantial

262. Nominal damages would, at the very least, preserve the expressive value of the law. *See generally* Cass R. Sunstein, *On the Expressive Function of the Law*, 144 U. PA. L. REV. 2021, 2024 (1996) (discussing "the function of law in 'making statements' as opposed to controlling behavior directly").

263. Historically, punitive damages also served other purposes. Alexandra B. Klass, *Punitive Damages and Valuing Harm*, 92 MINN. L. REV. 83, 91 (2007). Today, however, "[c]ommentators and courts generally are in agreement that the twin purposes of punitive damages are punishment and deterrence." *Id.* at 90.

264. Capitol Records Inc. v. Thomas-Rasset, 680 F. Supp. 2d 1045, 1061 (D. Minn. 2010); Sony BMG Music Entm't v. Tenenbaum, 721 F. Supp. 2d 85, 121 (D. Mass. 2010).

265. 517 U.S. 559, 575–82 (1996) (setting forth the three-pronged analysis that has become the touchstone of modern due process scrutiny of punitive damages awards).

266. Philip Morris USA v. Williams, 352–53 (2007); State Farm Mut. Auto Ins. Co. v. Campbell, 538 U.S. 408, 418–20 (2003); Cooper Indus., Inc. v. Leatherman Tool Grp., Inc., 532 U.S. 424, 429 (2001). For a general discussion of this line of cases, see F. Patrick Hubbard, *Substantive Due Process Limits on Punitive Damages Awards: "Morals Without Technique"?*, 60 FLA. L. REV. 349, 349 (2008) (arguing that the Court's current approach should be abandoned); and Samuelson & Wheatland, *supra* note 228, at 480–91.

267. *See BMW of N. Am., Inc.*, 517 U.S. at 580 ("[The] commonly cited indicium of an unreasonable or excessive punitive damages award is its ratio to the actual harm inflicted on the plaintiff."). The Court ultimately held that the award being reviewed was unconstitutional under the Due Process Clause, reasoning in part that an actual-harm-to-punitive-damages ratio of 500:1 was "breathtaking." *Id.* at 583.

punitive award in these scenarios could run the risk of being found unconstitutional.[268]

Failing to account for these phenomena would likely stretch further the yawning gap between copyright law and the social norms surrounding content.[269] Statutory damages awards for digital copyright infringement have, as noted above, shocked the sensibilities of judges and market participants alike, strongly suggesting that this area is one in which copyright's law/norm divide is particularly strained.[270] And infringement awards that far exceed the measure of actual harm to copyright holders could also have the perverse effect of contributing to a "backlash," wherein perceived overenforcement of copyright law might actually trigger an increase in copyright infringement.[271] The "expressive" value of law plays a crucial role here—where applications of copyright statutes express values that are perceived as draconian or unjust, copyright law will lose legitimacy in the eyes of the public.[272]

B. The Supply Side: Moral Rights and Utilitarian Incentives

Copyright freeconomics also portends a radical upheaval in the structure of copyright law itself. Until now, a centuries-old dichotomy has divided copyright into two halves: one comprising utilitarian rights and the other moral rights. In the copyright-content industries discussed herein, however, this dichotomy may well collapse—if it has not done so already.

The bundle of utilitarian rights generally includes the rights of reproduction, distribution, public display and performance, and (sometimes)[273] the right to prepare derivative works.[274] The creation of these rights was justified not on natural rights grounds; rather, they

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268. It should be noted that the ratio-based analysis does "specifically allow[] for departing from single-digit ratios where economic harm is small . . . ." Klass, *supra* note 263, at 104.

269. *See generally* Tehranian, *supra* note 4, at 543 (discussing copyright law's "law/norm gap").

270. *See supra* notes 117–20 and accompanying text (describing judicial and popular responses to digital copyright infringement damage awards).

271. *Cf.* Depoorter et al., *supra* note 86, at 1263–67 (discussing the "copyright backlash" effect).

272. For a discussion of the expressive theory, see Elizabeth S. Anderson & Richard H. Pildes, *Expressive Theories of Law: A Restatement*, 148 U. PA. L. REV. 1503, 1504 (2000) ("At the most general level, expressive theories tell actors—whether individuals, associations, or the State—to act in ways that express appropriate attitudes toward various substantive values.").

273. Professor Kwall notes that the derivative-works right can serve moral ends, albeit in a limited manner. KWALL, *supra* note 18, at 26–27.

274. *See generally* 17 U.S.C. § 106 (codifying the exclusive rights granted by the Copyright Act of 1976).

are generally understood to exist as positive law and are justified on a utilitarian basis. More specifically, they are meant to supply ex ante incentives for the socially desirable creation of artistic works.[275] These utilitarian rights do so in theory by correcting the perceived market failure that arises because noncreators face only the variable costs of reproducing and distributing intellectual property and need not recoup the fixed costs of creation.[276] Absent copyright law, a creator—who must recoup her creation costs by charging above-marginal-cost prices—would be unable to compete effectively with a noncreator. As a result, there would generally be no ex ante incentive to author creative works.[277] The rights that fall under this umbrella are often called the "economic rights"[278] and are understood to be conceptually separate, and sometimes diametrically opposed to, moral rights.[279]

Moral rights, on the other hand, are widely understood to be more akin to natural rights. Rather than creating an ex ante incentive to create, reproduce, and distribute artistic works, moral rights are instead meant primarily to protect the "personhood" or "personality" of

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275. *See, e.g.*, Steven J. Horowitz, *Copyright's Asymmetric Uncertainty*, 79 U. CHI. L. REV. 331, 360 (2012) ("Incentives operate ex ante: copyright aims to get people to produce works they otherwise would not.").

276. *See supra* Part II.A.

277. The utilitarian/incentivizing theory is ensconced in the IP Clause of the U.S. Constitution, which grants Congress the power "To 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." U.S. CONST. art. I, § 8, cl. 8.

278. *E.g.*, Berne Convention for the Protection of Literary and Artistic Works art. 6*bis*, Sept. 9, 1886, S. TREATY DOC. NO. 99-27 (1988) ("Independently of the author's economic rights . . . the author shall have the right to claim authorship of the work . . . ."); Justin Hughes, *American Moral Rights and Fixing the* Dastar *"Gap,"* 2007 UTAH L. REV. 659, 662–63 (describing "economic" and "moral" rights and their roles in U.S. copyright law); Aaron D. White, *The Copyright Tree: Using German Moral Rights as the Roots for Enhanced Authorship Protection in the United States*, 9 LOY. L. & TECH. ANN. 30, 31 (2010) (distinguishing between "economic" and "noneconomic" rights); Zemer, *supra* note 18, at 1520 (stating that copyright holders have rights of "both economic and moral stature"); Albert Fang, Note, *Let Digital Technology Lay the Moral Right of Integrity to Rest*, 26 CONN. J. INT'L L. 457, 458 (2011).

279. *E.g.*, PAUL GOLDSTEIN, COPYRIGHT'S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX 137 (rev. ed. 2003) ("Commentators regularly cite the doctrine of an author's moral right, and its rejection in the United States, as evidence of a profound and pervasive division separating two cultures of copyright . . . ."); Christina Bohannan, *Copyright Infringement and Harmless Speech*, 61 HASTINGS L.J. 1083, 1134 (2010) (distinguishing between harm to the "economic incentive to create and disseminate copyrighted works" and harm to "[a]uthors' natural and moral rights"); Henry Hansmann & Marina Santilli, *Authors' and Artists' Moral Rights: A Comparative Legal and Economic Analysis*, 26 J. LEGAL STUD. 95, 102 (1997) ("[T]he interests protected by moral rights doctrine . . . are 'personality' interests that are fundamentally different from the 'economic' or 'commercial' interests that are protected by the copyright . . . doctrine[]."); Hughes, *supra* note 278, at 663 ("These moral rights are often portrayed as quite alien and distinct from the economic or patrimonial rights associated with copyrighted works . . . .").

authors.[280] The two most commonly guaranteed moral rights are the right of "attribution," which "guarantees that the author's selected form of identification with the work remains" and generally "include[s] a right against misattribution," and the right of "integrity," which "allows the artist to object to distortions, alterations, or changes in the work."[281] Because these rights are seen as entirely distinct from the utilitarian/incentivizing rights, they are often referred to as "noneconomic" rights.[282]

Generally speaking, "[T]he American culture of copyright centers on a hard, utilitarian calculus that balances the needs of copyright producers against the needs of copyright consumers . . . ."[283] While moral rights feature more prominently in the continental tradition,[284] the moral-rights movement has successfully established only one small beachhead in U.S. copyright law: the Visual Artists Rights Act of 1990 ("VARA").[285] That Act (as its name suggests) was limited to protecting small-run, limited-edition "works of visual art."[286] And it protects only a small subset of works traditionally considered to be "visual art"—VARA does not extend to any "poster, map, globe, chart, technical drawing, diagram, model, applied art, motion picture or other audiovisual work, book, magazine, newspaper, periodical,

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280. *See, e.g.*, Yonatan Even, *The Right of Integrity in Software: An Economic Analysis*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 219, 240 (2006) ("The underlying assumption [behind moral rights] is that creative works reflect their authors' personalities, and that these are therefore entitled to protection above and beyond that of copyrights; protection against any injury to the author's 'personality' interest."); Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 350–55 (1988) ("For copyright owners, there also exists an inalienable right to guard the integrity of a work against change that would damage the author's reputation or destroy his intended message."); *see also* Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 1013 n.202 (1982) (suggesting that the idea of a property right in personhood is relevant to copyright "droit moral," or moral rights).

281. Hughes, *supra* note 278, at 660.

282. *See, e.g.*, Dale P. Olson, *Common Law Misappropriation in the Digital Era*, 64 MO. L. REV. 837, 845–46 (1999) (describing "the protection of moral, or noneconomic rights," that are "independent of the rights inherent in copyright."); William Patry, *The Role, or Not, of Ethics and Morality in Copyright Law*, 37 OHIO N.U. L. REV. 445, 446 (2011) ("Droit moral are noneconomic rights reflecting both the creator's bond with the work and the creator's reputation . . . ."); *cf.* Neil Weinstock Netanel, Maharam of Padua v. Giustiniani*: The Sixteenth-Century Origins of the Jewish Law of Copyright*, 44 HOUS. L. REV. 821, 843 (2007) (observing that the "noneconomic," moral rights account of copyright originates in Kantian philosophy).

283. GOLDSTEIN, *supra* note 279, at 138.

284. JULIE E. COHEN ET AL., COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 11 (3d ed. 2010).

285. 17 U.S.C. § 106A (2012). One other copyright statute is related, though fairly tangentially, to ensuring attribution—a provision in the 1998 Digital Millenium Copyright Act ("DMCA") bans altering or removing "copyright management information" that is transferred along with a copyrighted work. § 1202(b).

286. § 106A.

data base, electronic information service, electronic publication, or similar publication."[287] Given the entrenched conceptual divide between the utilitarian/incentivizing "economic" rights and the "noneconomic" moral rights, the persistently narrow field of moral rights in U.S. copyright law is unsurprising.[288] Put simply, if copyrights cannot be justified on utilitarian/incentivizing grounds, they are likely to face intense opposition from U.S. copyright stakeholders. And it is not the aim of this Article to counter that position, which finds strong constitutional purchase in the language of the Intellectual Property Clause.[289] Instead, I contend that at least some of the so-called moral rights may—for the first time—be justified on utilitarian/incentivizing grounds.

1. The Destruction of the Utilitarian/Moral Rights Dichotomy

The paradigm shift in the economics of content industries calls into serious question the standard dichotomy separating utilitarian/incentivizing rights from moral rights. True, authors and artists who license their work to for-profit-content, ad-supported-content, or freemium-content providers frequently do so in exchange for financial remuneration, as did authors and artists in the past.[290] As to such content creators and providers, the traditional, pecuniary-focused copyrights of exclusive reproduction, distribution, derivative-works preparation, and public performance and display remain relevant to incentivizing the creation and dissemination of works. A growing number of artistic creators, however, have begun to offer their works to consumers at a price of $0.00 without receiving any direct financial compensation of the sort contemplated by the traditional utilitarian/incentivizing copyrights.[291]

As the pioneering research of Heyman and Ariely suggests, this result should not be surprising, given that people may actually *increase* the amount of effort they are willing to expend when monetary rewards are lowered so that the transaction shifts from a

287. § 101.

288. As an example of the strength of opposition to adoption or expansion of moral rights, the United States "refused accession to the [Berne] Convention for over 60 years following the adoption of Article 6*bis*. To a large extent, this was specifically because Article 6*bis* dictates the introduction of moral rights into member-states' jurisdictions. . . ." Even, *supra* note 280, at 241.

289. U.S. CONST. art I, § 8, cl. 8.

290. *See, e.g.*, *Pandora, Spotify Face Off in Free Online Music Market*, ABS-CBNNEWS.COM (May 7, 2012), http://www.abs-cbnnews.com/business/05/07/12/pandora-spotify-face-free-online-music-market ("[T]he firm operates under a license that requires paying royalties to the artists played by its listeners.").

291. *See supra* Part III.D.1.

"market" contract (low but positive reward) to a social contract (zero monetary reward).[292] To the extent that creators can now reach consumers directly or through intermediaries that do not derive revenues from advertising or paid subscriptions, such content can also be enjoyed free of even the attention costs associated with advertisements (whether for third-party goods or services or the proprietor's paid-subscription product). In other words, these transactions verge on being truly free.[293]

As a result, the emerging body of literature discussed in Part III indicates that these transactions occur in a sphere that falls very close to the purely social, rather than financial, end of the spectrum.[294] Other transactions, for example those between artists being paid zero and for-profit, ad-supported content firms, may fall somewhere in the middle of this spectrum, displaying at least some aspects of social markets. In social content markets, behavior, norms, and—most importantly for present purposes—incentives to create and disseminate all become social in nature. The contracts governing transactions are social contracts that, like the bowl of zero-price candy in Ariely, Gneezy, and Haruvy's experiment,[295] do not involve money and therefore evoke social cues. And in this environment, social incentives to create assume primary importance, while the traditional pecuniary incentives fade into irrelevance.

In the social sphere, status seeking is a powerful incentive for action.[296] Receiving attribution, or credit, for one's innovation, creation, or contribution is an increasingly vital method of increasing or maintaining the creator's or contributor's social status.[297] If, for example, an author seeks to become the foremost expert in a field, she may now decide to make her commentary available at zero cost through a variety of media in order to "get her name out there." She may be happy, even eager, to let others reproduce and distribute her

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292. *See* Heyman & Ariely, *supra* note 194, at 787.

293. From the perspective of consumers, opportunity costs (as always) remain.

294. *See supra* Part III.D.1–2.

295. *See* Shampan'er et al., *supra* note 186.

296. *See, e.g.*, Michael P. Vandenbergh, Amanda R. Carrico & Lisa Schultz Bressman, *Regulation in the Behavioral Era*, 95 MINN. L. REV. 715, 723 (2011) ("[P]eople seek social status within valued social groups and social inclusion . . . .").

297. *See* Catherine L. Fisk, *Credit Where It's Due: The Law and Norms of Attribution*, 95 GEO. L.J. 49, 50 (2006):

> Attribution is foundational to the modern economy. The reputation we develop for the work we do proves to the world the nature of our human capital. Credit is instrumentally beneficial in establishing a reputation and intrinsically valuable simply for the pleasure of being acknowledged. Indeed, credit is itself a form of human capital.

work for free—but only so long as she receives attribution.[298] Likewise, ensuring that creative output is not mangled or altered in ways that would be harmful to the creator's reputation is also a necessary element of increasing or maintaining the creator's social status.[299] The right of integrity serves this goal.[300]

Before the advent of copyright freeconomics, however, neither right was central to incentivizing content creation and dissemination in the same way that traditional, pecuniary-focused copyrights were. Even if some authors were motivated to create by purely social aims, many were not,[301] and in any event the costs associated with reproduction and distribution invariably necessitated the traditional pecuniary incentives in order to induce intermediary providers to enter the market. Creation in a vacuum has never been the prize sought by copyright law; thus, the pecuniary copyrights remained necessary to incentivize the dissemination (if not always the creation) of artistic works.[302] To the extent that authors and artists did want to create and distribute works in zero-price, social markets, there were relatively few such markets available.

But as social avenues and markets for content creation and dissemination become increasingly prevalent, granting or expanding the rights of attribution and integrity—noneconomic moral rights—may become justifiable on utilitarian/incentivizing grounds. In social markets, guaranteeing the right of attribution or integrity could very well serve as a much greater incentive to engage in the creation and dissemination of socially desirable artistic or literary works than the traditional utilitarian copyrights. This is so because, by ensuring that a potential creator's output would increase her social status, the rights of attribution and integrity would act not only as a protection of the creator's personhood, but also as an ex ante incentive to create. Yet, the traditional utilitarian/incentivizing rights—given their

298. For a similar example, see Lastowka, *supra* note 6, at 60 (discussing law professors who "give away" copies of scholarly articles).

299. Certainly, not everyone would agree with this statement; some call for the elimination even of the present, narrow right of integrity. *See, e.g.*, Fang, *supra* note 278, at 458 (arguing that "the moral right of integrity is obsolete in the face of the digital world").

300. In U.S. law, it does so (within the limited context of VARA) by preventing "distortion, mutilation, or other modification" of a work where such alteration "would be prejudicial to [the creator's] honor or reputation." 17 U.S.C. § 106A(a)(2) (2012).

301. *See, e.g.*, *Copyright Term Extension Act of 1995: Hearing on S. 483 Before the S. Comm. on the Judiciary*, 104th Cong. 55–57 (1995) (statements of Bob Dylan, Don Henley, and Carlos Santana, among others, to the effect that the Act's grant of exclusive rights incentivizes their artistic creations).

302. *See, e.g.*, Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 558 (1985) ("By establishing a marketable right to the use of one's expression, copyright supplies the economic incentive to create *and disseminate* ideas." (emphasis added)).

overarching aim of allowing above-marginal-cost pricing—would play a significantly smaller incentivizing role in social content markets, where neither creators nor distributors (here, frequently the same entity) receive direct financial recompense or charge *any* price, let alone an above-cost price.[303] Thus, the traditional utilitarian/moral rights dichotomy underlying copyright law and much of the scholarly debate surrounding it may collapse in the face of copyright freeconomics. At the very least, it seems likely to emerge—if at all—in a significantly weakened state.

2. Potential Utilitarian Foundation for Moral Rights

Analyzing potential expansions of copyright law based on utilitarian/incentivizing goals can, and generally will, yield a different policy prescription than would analyses based solely on natural-law, moral-rights grounds. There is, as of yet, essentially no empirical research on the behavior of creators and potential creators in the new-model social markets; thus, a definitive call for the expansion of the rights to attribution and integrity in U.S. copyright law would be premature. And given the questionable success of previous expansions of U.S. copyright protections that have been based on the traditional utilitarian/incentivizing rationale,[304] any future expansions ought to be based upon real, persuasive evidence that increasing protection will likely lead to a net increase in creative output.[305] Should future research bear out present intuitions, however, the rights granted in VARA may warrant expansion beyond their current narrow scope to include significantly more (and perhaps all) of the content susceptible to creation and dissemination in social markets. A priori, there would seem to be no principled distinction for utilitarian/incentivizing purposes between limited edition works and other works, or between

303. Though this Article does not go so far, it could be argued that this indicates that there is therefore no need whatsoever for such rights in these markets.

304. *See, e.g.*, Ku, *supra* note 3, at 269.

305. Any expansion of copyright—given its history—is likely to be greeted with no small amount of skepticism. *See, e.g.*, LESSIG, *supra* note 34, at 250–51 (suggesting a fixed copyright term of five years, because "[a] change in the copyright term would have no effect on the incentives for authors to produce work today"); SIVA VAIDHYANATHAN, COPYRIGHTS AND COPYWRONGS: THE RISE OF INTELLECTUAL PROPERTY AND HOW IT THREATENS CREATIVITY 11 (2001) ("[S]ince 1909, courts and corporations have exploited public concern for rewarding established authors by steadily limiting the rights of readers, consumers, and emerging artists."); Abraham Drassinower, *A Note on Incentives, Rights, and the Public Domain in Copyright Law*, 86 NOTRE DAME L. REV. 1869, 1870 (2011) ("[W]hereas copyright minimalists object strenuously to this expansion [of copyright scope and subject matter], copyright maximalists support it."); Rebecca Tushnet, *supra* note 18, at 792 ("[C]opyright's control rights have metastasized, harming creativity and access to creative works.").

narrowly defined visual arts and audio, text-based, or audiovisual content.[306] At the very least, VARA's blanket exclusion of "electronic publication[s]"[307] from protection appears suspect after having reconceptualized moral rights as capable of granting significant additional or unique incentives to create and distribute. In either case, an expansion of the right to attribution and integrity that was justified on utilitarian/incentivizing grounds, instead of the old moral-rights theory, would fit much more comfortably within the utilitarian tradition of U.S. copyright law,[308] thus making it substantially more likely to actually occur.[309] Of course, any such change should also be dependent on the development of a legal definitional and enforcement scheme capable of satisfactorily realizing those goals—likely no small task.[310]

3. An Alternative—Instead of Additional—Remedy Structure

Finally, the dynamic described above[311] suggests one possibility that could manage the neat trick of expanding the rights of integrity and attribution while appeasing both copyright minimalists and maximalists.[312] Because some creators and distributors are now realistically motivated solely by nonpecuniary incentives while others are motivated by pecuniary ones, yet both groups often create the same types of works,[313] segregating rights based on type of work (as the current legal structure does) is likely an inefficient means of incentivizing authorship and dissemination. Instead, copyright law could be altered such that copyright owners may choose to enforce one of two bundles of utilitarian-based rights: either the pecuniary-focused

306. *But cf.* Roberta Rosenthal Kwall, *Originality in Context*, 44 HOUS. L. REV. 871, 874 (2007) ("Sound reasons may support confining the application of moral rights to a smaller category of works than are covered by copyright law."). Professor Kwall, of course, wrote under copyright's paradigmatic operating assumption—contested in this Article—that moral rights of attribution and integrity can be justified only on the "infusion of the creator's mind, heart, and soul into her work." *Id.* at 873.

307. 17 U.S.C. § 101 (2012).

308. *See* GOLDSTEIN, *supra* note 279, at 138 (contrasting the European, author-centric view of copyright with the U.S. view that attempts to balance the interests of authors and the general public).

309. For an argument that attribution "ought to become more central to copyright law," see Lastowka, *supra* note 6, at 85. Professor Lastowka concludes that the presence or lack of attribution ought to be considered as a fifth factor in fair use analysis.

310. *See* Tushnet, *supra* note 18, at 795 (arguing that an attribution law would necessarily be vague, generating further uncertainty in the already uncertain world of copyright law).

311. *See supra* Part III.D.1.

312. *Cf.* Drassinower, *supra* note 305, at 1871 (arguing that a rights-based account of copyright may be less distasteful to copyright minimalists than it would initially appear to be).

313. *See* Nandi & Rochelandet, *supra* note 51, at 31.

rights (reproduction, distribution, etc.) or the social-status-based rights (attribution and integrity).

This structure would operate somewhat similarly to the current remedies structure, under which copyright owners can choose to pursue either actual damages (and lost profits) or statutory damages.[314] Importantly, it would allow creators and distributors—who are in the best position to do so—to self-segregrate based on primary incentive type. Under such a regime, copyright plaintiffs who view harm from infringement through a market-transactional lens could opt to enforce traditional, pecuniary-focused copyrights. And plaintiffs focused primarily on social-type harm could choose to vindicate the bundle of rights currently deemed noneconomic.

This enforcement structure may well be a much more efficient means of stimulating creative output than the current structure of U.S. copyright law. As such, it would better serve copyright's constitutionally mandated purpose of promoting "Progress." And by adding the rights of integrity and attribution without necessarily expanding the scope of copyright protection, this proposal would likely be viewed more favorably by copyright stakeholders than past copyright expansions have been.

C. Call for Further Research

The rise of copyright freeconomics will, in all likelihood, raise myriad issues and problems beyond those discussed in this Article. Further research, both theoretical and empirical, will be needed to address these issues as they arise. On a more positive note, however, further study of the subject will also likely illuminate additional areas in which copyright law may be tweaked and improved to better balance the competing interests of copyright stakeholders. This Subpart identifies a few aspects of the subject that are likely candidates for further research.

First, a much more developed understanding of how consumers react to zero-price, digital content is needed. For example, Dr. Shampan'er and Professor Ariely have suggested that "[p]eople tend to ignore opportunity cost and other costs, including attention and search costs, of getting content for free online."[315] Yet their hypothesis remains untested. As noted above, copyright stakeholders will require a working knowledge of substitution rates between new-model content

314. 17 U.S.C. § 504(a)(1)–(2) (2012).

315. Ariely & Shampan'er, *supra* note 259.

offerings and more traditional ones.[316] And confirmation that content end users engage in overconsumption or hoarding behavior, as well as measurement of the rates at which they do so and the conditions that trigger such behavior, will be important to the development and refinement of the non-usage defense discussed above.[317] Perhaps, for example, the *source* of a creative work plays a crucial role in triggering certain norms and behaviors. Consumers might be more likely to engage in overconsumption of works by remote, objectively successful artists than of works created by local, struggling artists; if that is the case, courts ought to consider the source of the infringed works in evaluating claims of non-usage.

Second, there is currently a knowledge gap regarding how authors, artists, and distributors react to freeconomic incentives, cues, and social norms.[318] The scant literature that currently exists tends to focus on the motivations of illegitimate distributors.[319] Accordingly, to ensure that copyright law fulfills its constitutionally mandated purpose—to "promote the Progress of Science and the useful Arts"[320]—the current study and understanding of incentives to create will need to undergo a true paradigm shift. And particularly, given the questionable success of previous changes to U.S. copyright law in achieving that purpose,[321] prudence demands that solid evidence be gathered before embarking on any substantial course changes. Fortunately, a careful study of incentives to create and distribute content under these new business models and conditions holds the potential to enable judges and legislators to modify copyright law to better serve its utilitarian/incentivizing role in the future.

Finally, given the shift toward social content markets, research into the norms governing social contracts and transactions in such markets is needed. Only relatively recently did the field of law and

316. *See supra* Part IV.A.1.a.

317. *See supra* Part IV.A.2.

318. Additionally, economists are still struggling to understand the functioning of *any* multisided market, let alone ones that offer their products at zero prices. David S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 YALE J. ON REG. 325, 330 (2003) ("Despite their economic importance, multi-sided markets have only recently received attention from economists . . . .").

319. *E.g.*, Nandi & Rochelandet, *supra* note 51, at 31 (finding that "copyright enforcement . . . has no impact on contribution behavior," but that such behavior can be "motivated by social influence").

320. U.S. CONST. art. I, § 8, cl. 8.

321. *See, e.g.*, Ku et al., *supra* note 218; Arlen W. Langvardt, *The Beat Should Not Go On: Resisting Early Calls for Further Extensions of Copyright Duration*, 112 PENN. ST. L. REV. 783, 810–11 (2008) (stating that the Copyright Term Extension Act "was an ill-considered idea" and arguing against any future copyright term extensions).

economics discover the importance of social norms.[322] To date, empirical studies have focused on the nature of the social norms that govern infringement.[323] However, the field of study must move beyond simply concluding that the prevalent perception, when it comes to digital copyright infringement, is that "everyone is doing it."[324] Instead, the focus ought to shift toward understanding the multifaceted nature of these nascent markets and must be expanded to include a study of the developing social norms that govern each body of copyright stakeholders. This body of research will hold widespread implications for the design and application of copyright law, including—though certainly not limited to—the punitive aspect of statutory damages.[325]

V. CONCLUSION

During the last decade, copyright law has drawn increasingly intense criticism from scholars and stakeholders. Much of this criticism stems from the cavernous gap between the state of the law and the actual behavior and social norms that are observable in real-world content markets. As the platforms through which we create, distribute, and consume copyrighted content have taken massive leaps forward, copyright law itself has remained largely static. Thus, the law/norm divide in copyright law has continued to widen.

This Article is the first to analyze the rise of copyright freeconomics. It ought not be the last. The freeconomic revolution

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322. *See* Robert C. Ellickson, *Law and Economics Discovers Social Norms*, 27 J. LEGAL STUD. 537, 539 ("In their early works, Coase, Calabresi, and Posner all addressed some situations where informal social controls might be more influential than legal rules. Norms, however, were simply beyond their field of reckoning.").

323. *E.g.*, Steven Lysonski & Srinivas Durvasula, *Digital Piracy of MP3s: Consumer and Ethical Predispositions*, 25 J. CONSUMER MARKETING 167, 167 (2008) (finding that digital copyright infringement, in the form of downloading illegitimate copies of copyrighted song files, "continues at a high rate today driven by a strong belief that it is not ethically wrong").

324. PRICEWATERHOUSECOOPERS, DISCOVERING BEHAVIORS AND ATTITUDES RELATED TO PIRATING CONTENT 1 (2010), *available at* http://www.pwc.com/us/en/industry/entertainment-media/assets/piracy-survey-summary-report-0111.pdf (internal quotation marks omitted) (displaying the results of a consumer research program that explored motivations and general consumer attitudes regarding online copyright infringement); *see also* Manesh, *supra* note 54, ¶ 6 & n.12 ("[S]tatistical and anecdotal evidence suggests that file sharers see nothing wrong with infringement.").

325. *Cf.* Dan M. Kahan, *Social Influence, Social Meaning, and Deterrence*, 83 VA. L. REV. 349, 351 (1997) ("The phenomena of social influence and social meaning matter for deterrence."); Geraldine Szott Moore, *The Crime of Copyright Infringement: An Inquiry Based on Morality, Harm, and Criminal Theory*, 83 B.U. L. REV. 731, 778–79 (2003) (arguing that an "inquiry into the harm and morality of copyright infringement" undercuts the supposed justifications for the No Electronic Theft Act of 1997 and the DMCA).

brought about by technological and business-model innovations undoubtedly carries with it myriad implications for the structure and theory of copyright law, only a handful of which are addressed herein. Further research, analysis and—most importantly—real changes are needed. Copyright law, at least as applied to content, must either evolve to face the new reality or run the risk of extinction through irrelevance.