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Testing the over- and under- exploitation hypotheses: bestselling musical compositions (1913-32) and their use in cinema (1968-2007)

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TESTING THE OVER- AND UNDER-EXPLOITATION HYPOTHESES:
BESTSELLING MUSICAL COMPOSITIONS (1913-32) AND THEIR USE IN
CINEMA (1968-2007)

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Abstract

Some economists assert that as valuable works transition from copyrighted status and fall into the public domain they will be underexploited and their value dissipated. Others insist instead that without an owner to control their use, valuable public domain works will be overexploited or otherwise debased. This study of the most valuable musical compositions from 1913-32 demonstrates that neither hypothesis is true as it applies to the exploitation of songs in movies from 1968-2007. When compositions fall into the public domain, they are more likely to be exploited in movies, suggesting no under-exploitation. And the rate of exploitation of these public domain songs is no greater than that of copyrighted songs, indicating no congestion externality. The absence of market failure is likely due to producer and consumer self-regulation.

Some economists assert that the public suffers when valuable copyrighted works fall into the public domain. One concern is under-exploitation, the possibility that a work without an owner will not be adequately distributed or otherwise made available to the public. According to Landes and Posner, “[A]n absence of copyright protection for intangible works may lead to inefficiencies because . . . of impaired incentives to invest in maintaining and exploiting these works.”¹ Congress,² the courts,³ and the Copyright

*Thank you to Liz Wheeler for her work as my research assistant.

¹ William M. Landes and Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 475 (2003).

² Congress found in 1998 that retroactive extension of protection to existing works nonetheless “would provide copyright owners generally with the incentive to restore older works and further disseminate them to the public.” H.R. Rep. No. 105-452, p. 4 (1998).

³ *Eldred v. Ashcroft*, 537 U.S. 186, 207 (2002) (Congress “rationally credited projections

Office⁴ all cited this concern in support of recent copyright term extension legislation.⁵ As to popular novels, at least, worries of under-exploitation appear to be unfounded. A recent empirical study of bestselling fiction from 1913-32 demonstrates that from 1988-2001, famous public domain novels were as available as their copyrighted counterparts.⁶

A different, and until now empirically untested, claim asserts that a popular work falling into the public domain may be overexploited, “overgrazed” to use the terminology found in the tragedy-of-the-commons literature.⁷ Landes and Posner assert that the value of “a novel or a movie or a comic book character or a piece of music or a painting” could be depleted in much the same way as “unlimited drilling from a common pool of oil or gas would deplete the pool prematurely.”⁸ Others suggest that the value of ownerless works could be dissipated through excessive or inappropriate uses.⁹ Mark Lemley has

that longer terms would encourage copyright holders to invest in the restoration and public distribution of their works”); *Eldred v. Reno*, 239 F.2d 372, 379 (D.C. Cir. 2001), *aff’d as Eldred v. Ashcroft*, 537 U.S. 186 (2003) (arguing that works falling into the public domain will be less available to the public).

⁴ See Copyright Term, Film Labeling, and Film Preservation Legislation: Hearings on HR 989, HR 1248 and HR 1734 before the Subcommittee on Courts and Intellectual Property of the House Committee on the Judiciary, 104th Cong. 1st Sess 50, 161, 171, 188 (statement of Marybeth Peters, Register of Copyrights) (arguing that publishers will not risk investing in a work that they do not own and therefore term extension is needed to assure availability of works).

⁵ See 17 U.S.C. § 302(a) (1994 & Supp. IV 1998).

⁶ See Paul J. Heald, *Property Rights and the Efficient Exploitation of Copyrighted Works: An Empirical Analysis of Public Domain and Copyrighted Fiction Best Sellers*, 92 MINN. L. REV. ____ (2008). (comparing 166 public domain best sellers from 1913-22 with 167 copyrighted best sellers from 1923-32 and also comparing the twenty most enduringly popular works from each group).

⁷ See Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968) (arguing that real property that lacks an owner will be overused and its value degraded).

⁸ Landes & Posner, *supra* note 1, at 487.

⁹ See Stan Liebowitz and Stephen Margolis, *Seventeen Famous Economists Weigh in on Copyright: The Role of Theory, Empirics, and Network Effects*, AEI-Brookings Joint Center for Reg. Studies 2 (Jan. 2004) (noting “the possibility of network effects in the market for derivative works that might make a copyright commons uneconomic”); Lee Ann Fennell, *Common Interest Tragedies*, 98 Nw. L. Rev. 907, 918 (2004) (“Intellectual goods exhibit “nonrivalry” in consumption, insofar as the transmission of a song or theory from me to you does not leave any less of the song or theory for me. Nevertheless, these goods are subject to a form of overgrazing, insofar as consumers have limited attention.”); Michael Steven Green, *Copyrighting Facts*, 78

noted that “this justification for intellectual property depends on proof that there is in fact a tragedy of the commons for information.”¹⁰ Since proponents of the under- and over-exploitation theories have not tested their hypotheses, the present study fills a significant gap in the literature.

Lemley labels both the under-exploitation and overexploitation arguments as “ex post” justifications for protecting works in that they provide a rationale for extending protection indefinitely without reference to “ex ante” incentives to create.¹¹ The ex post justifications outlined above stand in the forefront of the world-wide debate over whether copyright terms for existing works should be retroactively extended.¹² Because the standard incentive-to-create rationale cannot be used to justify extending the term of protection for a work that already exists,¹³ ex post justifications are also likely to drive the debate over further extensions in the U.S. when the present 20-year extension runs out in 2018. As noted above, claims of over- and under-exploitation of public domain works

Ind. L. J. 919 (2003) (“In addition to encouraging authors to create new works, copyrights also encourage authors to efficiently utilize constituents of works that already exist. For example, if no one had a property right in the character Superman, authors could freely create works in which Superman appeared as a character without concern for the effect their works had on the value of actual and potential Superman-based works.”); Alex Kozinski, *Mickey and Me*, 11 U. MIAMI ENT. & SPORTS L. REV. 465 (1994) (unauthorized uses “end[] up diminishing the value of the product, not just to the creator, but to the general public”). Cf. Justin Hughes, *Recoding Intellectual Property and Overlooked Audience Interests*, 77 Tex. L. Rev. 923, 926 (1999) (“non-owners commonly benefit from owner control that is used to keep a cultural object ‘stable.’”).

¹⁰ Mark Lemley, *Ex Ante Versus Ex Post Justifications for Intellectual Property*, 71 U. CHI. L. REV. 129, 143 (2004).

¹¹ See *id.* at 129-31.

¹² See, for example, Gowers Review of Intellectual Property at http://www.hm-treasury.gov.uk/independent_reviews/gowers_review_intellectual_property/gowersreview_index.cfm (study commissioned by the British Treasury department rejecting ex post justifications for extending copyright protection for existing works). Japan is also considering retroactive term extension. See <http://williampatry.blogspot.com/2007/11/japan-looks-at-copyright-term-extension.html>. The author recently presented his findings on the exploitation of bestselling public domain fiction in Tokyo. See <http://www.21coe-win-cls.org/english/info/index.html>

¹³ See Lemley, *supra* note 10, at 133-34 (“Congress could obviously not justify retroactive extension on the ground that it would encourage dead people to produce more works.”); Heald, *supra* note 6, at ____.

have already been relied upon heavily by the successful apologists for the 1998 Copyright Term Extension Act.¹⁴

Neither the over- nor under-exploitation theories have gone unchallenged. Lemley scoffs at *under*-exploitation worries, stating that the claim “that control by a single firm is necessary to induce efficient production [is] theoretically unsound”¹⁵ and wondering why there is “some greater need to subsidize [by granting exclusive rights] the making of more copies of *Ulysses* than the making of more paper clips.”¹⁶ Amicus briefs,¹⁷ including one signed by five Nobel Laureate economists,¹⁸ rejected the argument when it was made in *Eldred v. Ashcroft*, and my own empirical work concludes that popular books falling into the public domain are not underexploited in comparison to their copyrighted counterparts.¹⁹ The *over*-exploitation theory has also come under attack.²⁰ Richard Epstein is a doubter, suggesting that “[a]nyone is hard pressed to believe that Shakespeare's star has been dimmed by the calamities committed in his name . . .”²¹ As are Lemley and Dennis Karjala, both of whom deploy market-based economic arguments to allay fears of a congestion externality caused by overuse of copyrighted

¹⁴ See *supra* notes 1-5.

¹⁵ See Lemley, *supra* note 10, at 138.

¹⁶ *Id.* at 136.

¹⁷ See, for example, Brief of Amici Curiae The Internet Archive, Prelinger Archives, and Project Gutenberg Literary Archive Foundation in Support of Petitioners, *Eldred v. Ashcroft*, No. 01-618 (S Ct filed May, 2002) (available on Westlaw at 2002 WL 1059714) (showing that in 2002 more of the total number of books published in 1920 were in print than those published in 1930).

¹⁸ See Brief of George A. Akerlof et al. as Amici Curiae in support of Petitioners, *Eldred v. Ashcroft*, No. 01-618 (S Ct filed May, 2002) (available on Westlaw at 2002 WL 1041846).

¹⁹ See Heald, *supra* note 6.

²⁰ See Laura Bradford, Parody and Perception: *Using Cognitive Research to Expand the Fair Use Exception in Copyright Law*, 46 B.C.L. Rev. 706, 707 (2005) (“Academic critiques of using an overgrazing doctrine for intellectual property are widespread.”).

²¹ Richard Epstein, *Liberty v. Property? Cracks in the Foundations of Copyright Law*, 42 SAN DIEGO L. REV. 1, 26 (2005).

works.²² They conclude that “a belief that the original creator (or his transferee) can best manage the work in the public interest runs strongly contrary to our long-standing and fundamental reliance on free markets to allocate resources to the production and distribution of goods.”²³

Although the theoretical arguments on both sides are interesting, commentators have so far assumed (but not necessarily believed) that works falling into the public domain will be exploited at a different rate than their copyrighted counterparts. Exploitation rates are, of course, observable and ripe for empirical analysis. In Part I of the article, I explain the methodology of my study of popular musical compositions from 1913-32 as they appear in movies from 1968-2007. Studying musical compositions has several advantages over my prior study of best-selling books. Beyond providing the opportunity to confirm data collected on books from the same period, tracking the appearance of compositions in movies provides data on the exploitation of derivative works.²⁴ Musical compositions appear in movies as works realized by someone other than the original author. In a movie we hear a recording of the composition, a derivative work under the Copyright Act.²⁵ Since those worried about over-exploitation inevitably cite to unauthorized derivative works as their most serious potential concern,²⁶ the study provides especially relevant data. In Part II, the results of the study are reported: Public

²² See Lemley, *supra* note 10; Dennis Karjala, Congestion Externalities and Extended Copyright Protection, 94 GEO. L. J. 1065 (2006).

²³ See Karjala, *supra* note 22, at 1079, *citing* Lemley, *supra* note 10 at ____.

²⁴ See 17 U.S.C. § 100 (defining a derivative work as one “based upon one or more preexisting works, such as a . . . sound recording . . . or any other form in which a work may be recast, transformed, or adapted.”); 17 U.S.C. § 106(2) (authors’ rights include the exclusive right to prepare derivative works).

²⁵ See 17 U.S.C. § 106(2).

²⁶ All of the sources listed in footnote nine rely primarily on concerns over the creation of unauthorized derivative works.

domain songs are exploited at the same rate as copyrighted songs, indicating that in this context worries of both over- and under-exploitation are misplaced. Part III joins the theoretical debate and suggests why self-regulation by both producers and consumers of copyrighted works explains the lack of market failure. Two novel tests are offered to predict when over- or under-exploitation might be legitimate concerns.

I. METHODOLOGY

Previous studies confirm that most copyrighted works do not hold their value over time. Landes and Posner note that “fewer than 11 percent of the copyrights registered between 1883 and 1964 were renewed at the end of their 28-year term, even though the cost of renewal was small.”²⁷ They point out that of 10,027 books published in the U.S. in 1930, only 1.7 percent remained in print in 2001.²⁸ An amicus brief in *Eldred v. Ashcroft* put the figure for books published in 1930 even lower, at 1.3 percent.²⁹ Even those worried about what happens when works fall into the public domain agree that there is little reason to extend copyright protection to works with no current value.³⁰ In fact, extending copyright for those works would entail significant tracing and transaction costs and would almost certainly be inefficient.³¹ Given this consensus, the present study identified the 1294 most popular musical compositions from 1913-32 and analyzed only the use of the 74 most enduringly valuable of those compositions as they appeared in movies from 1968-2007. The years 1968-2007 were chosen because the compositions

²⁷ Landes & Posner, *supra* note 1, at 473.

²⁸ *See id.* at 474.

²⁹ *See* Brief of Amici Curiae The Internet Archive, Prelinger Archives, and Project Gutenberg Literary Archive Foundation in Support of Petitioners, *Eldred v. Ashcroft*, No. 01-618, n. 10 (S Ct filed May 2002) (Available on Westlaw at 2002 WL 1059714) (reporting 180 books out of 13,470 published in 1930 were “currently available for sale.”).

³⁰ *See* Landes and Posner, *supra* note 1, at 474.

³¹ *See id.*, *supra* note 1, at 478-480.

from 1913-22 began to fall into the public domain in 1988, the mid-point in that timeline.

Compositions from 1913-1932 were chosen because the works published from 1913-22 are all in the public domain and works published from 1923-1932 are all still protected by copyright as a result of the 1998 Copyright Term Extension Act,³² allowing for a basically symmetrical comparison of ten year's worth of works from each group. Until extension, the effective copyright term for these works was 75 years, so works from 1913 fell into the public domain in 1988, works from 1914 in fell into the public domain in 1989, and so on until the 1998 legislation ended the flow of works into the public domain.³³

Studying this group of works from approximately the same era provides the opportunity to compare what happened to works from 1913-22 after they fell into the public domain and to compare rates of exploitation with those works from 1923-32 that remained protected. The initial data set included 601 of the most popular compositions from 1913-22 and 693 of the most popular compositions from 1923-32, as listed in the most accepted compilation of popular historical musical compositions.³⁴ All of these songs were than tracked in the Internet Movie Database (www.imdb.com) movie soundtrack database, which contains comprehensive information on almost 380,000 movies.³⁵ Since the present debate revolves around only those works that have substantial present value, the final statistical analysis was performed on the 74 musical

³² See 17 U.S.C. § 301. The extension only applied to works that had been properly renewed in their 28 year after publication under the 1909 Act.

³³ See Julie Cohen, et al, COPYRIGHT IN A GLOBAL INFORMATION ECONOMY 153-56 (2006).

³⁴ See Julius Mattfield, VARIETY MUSIC CAVALCADE: 1620-1961, A CHRONOLOGY OF VOCAL AND INSTRUMENTAL MUSIC POPULAR IN THE UNITED STATES (1962).

³⁵ See http://www.imdb.com/database_statistics (listing 379,871 titles) (last visited on December 19, 2007).

compositions that appeared in at least four movies from 1968-2007. Since current sales or licensing information of historic compositions is proprietary and unavailable, appearance in movies serves as a proxy for present popularity. Movie producers invest a significant amount of resources into choosing music for their soundtracks. Their goal is to please audiences. Observing their choices provides an objective and neutral indication of what historic music presently has value to consumers.

The full list of 1294 songs can be obtained from the author; the subset of 74 appears in Appendix A. A substantial majority of the compositions (44 out of 70) were published in the six-year period from 1926-31, indicating the significance of the golden age of Tin Pan Alley,³⁶ an extraordinary time period which marked the publication of many enduringly familiar works like “Bye Bye Blackbird,” “Blue Skies [Smiling at Me],” “My Blue Heaven,” “Let’s Do It [Let’s Fall in Love],” “Let’s Misbehave,” “When You’re Smiling [The Whole World Smiles with You],” “Bolero,” “Happy Days Are Here Again,” “Singin’ in the Rain,” “Stardust,” “Embraceable You,” “Georgia on My Mind,” “Get Happy,” “I’ve Got Rythm,” “Just a Gigolo,” and “Mood Indigo.”³⁷ During this time, Cole Porter, the Gershwin Brothers, Harold Arlen, Hoagy Carmichael, Duke Ellington, and many others were at the beginning of their famous composing careers.

³⁶ See Phillip Furia, *THE POETS OF TIN PAN ALLEY: A HISTORY OF AMERICA’S GREAT LYRICISTS* (1990); David A. Jasen, *TIN PAN ALLEY: THE COMPOSERS, THE SONGS, THE PERFORMERS AND THEIR TIMES* (1988).

³⁷ Mort Dixon and Ray Henderson, *Bye Bye Blackbird* (1926); Irving Berlin, *Blue Skies* (1927); George Whiting and Walter Donaldson, *My Blue Heaven* (1927); Cole Porter, *Let’s Do It* (1928); Cole Porter, *Let’s Misbehave* (1928); Mark Fisher, Joe Goodwin, and Larry Shay, *When You’re Smiling* (1928); Maurice Ravel, *Bolero* (1929); Jack Yellen and Milton Ager, *Happy Days Are Here Again* (1929); Arthur Reed and Nacio H. Brown, *Singin’ in the Rain* (1929); Mitchell Parrish and Hoagy Carmichael, *Stardust* (1929); Ira Gershwin and George Gershwin, *Embraceable You* (1930); Stuart Gorrell and Hoagy Carmichael, *Georgia on My Mind* (1930); Ted Kohler and Harold Arlen, *Get Happy* (1930); Ira Gershwin and George Gershwin, *I’ve Got Rythm* (1930); Irving Caesar and Leonello Casucci, *Just a Gigolo* (1930); and Duke Ellington, Irving Mills, and Albany Bigard, *Mood Indigo* (1931).

Since only 15 of the compositions dated from the 1913-22 time period, four qualifying songs³⁸ from 1909-12 augment that portion of the data.

The public domain songs were tracked during the period of time while they were protected by copyright law and then after they fell into the public domain, 75 years after publication. For example, “Danny Boy,”³⁹ was first published in 1913 and entered the public domain in 1988. So, its use in movies from 1968 through 1987 (twenty years) when it was protected by copyright was tracked separately from its use in movies from 1988 through 2007 (twenty years) when it was in the public domain. Compositions from 1914 were therefore tracked from 1968-1988 (twenty-one years) and then from 1989-2007 (nineteen years), and so on.

In order to make an appropriate comparison with the copyrighted songs from 1923-32 that never entered the public domain, each year’s worth of compositions from the public domain song set were matched with a corresponding year a decade later from the copyrighted song set. Compositions from 1913 were paired with 1923, 1914 were paired with 1924, and so on. For example, three songs from 1913 appeared in a total of four movies from 1968-1987 (a rate of 4/60), before the songs fell into the public domain. Those same three songs appeared in 20 movies from 1988-2007 (a rate of 20/60).⁴⁰ Therefore, the single song in the data set of copyrighted songs from 1923 was also measured in the same time frame, uses in movies from 1968-1987 (denominated “period one”) and then from 1988-2007 (denominated “period two”). The song, “Bugle Call

³⁸ Those that appeared in at least four movies from 1968-2007.

³⁹ Fredrick Weatherly, *Danny Boy* (1915). See also http://en.wikipedia.org/wiki/Danny_Boy.

⁴⁰ The rate is 4/60 and 20/60 rather than 4/20 and 20/20 because each of the three songs was measured during a twenty-year time period, a total of sixty measurable song years (three songs x twenty years = sixty song years).

Rag,” appeared in no movies from 1968-87 (a rate of 0/20) and in four movies from 1988-2007 (rate of 4/20). For songs from 1914 and 1924, the relevant time periods for measuring uses in movies was 1968-1988 (period one) and 1989-2007 (period two); for songs from 1915 and 1925, from 1968-89 (period one) and 1990-2007 (period two) and so on.

The aggregate number of uses in movies of the 1913-22 songs while they were still copyrighted was compared to the aggregate number of uses of the 1923-32 songs in time period one. Then, the aggregate number of uses in movies of the 1913-22 songs after they fell into the public domain was compared with the aggregate number of uses of the 1923-32 songs in time period two. The formal statistical regressions demonstrating the significance of the comparison is found in Appendix B.

II. DATA ANALYSIS

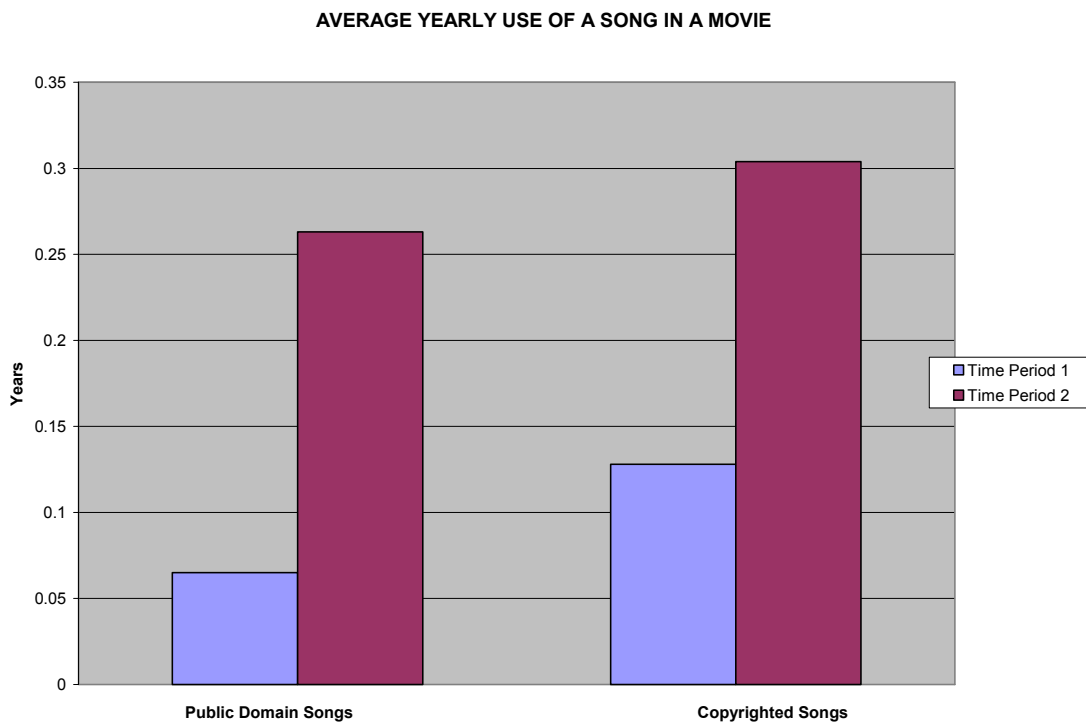
The goal of the data analysis was to answer two questions. First, when compositions from 1913-22 fell into the public domain were they exploited at a significantly different rate than while they were still protected by copyright? Second, if the rate of exploitation of public domain works increased after they fell into the public domain, did the change indicate signs of over-exploitation in comparison to the rate of exploitation of the compositions from 1923-32 still protected by copyright?

A. *No Evidence of Under-Exploitation*

Before the compositions from 1913-22 fell into the public domain, they appeared in movies on average at a rate of once every 15.3 years. After they fell into the public domain, they appeared in movies on average at a rate of once every 3.8 years. At first glance, this rate change appears to show a significant increase in exploitation, but the rate

change must be compared to the rate of uses of copyrighted songs during the same time period. After all, perhaps all songs from this general era, regardless of their legal status, appear more frequently in recent movies. This, in fact, appears to be the case. During the same comparative time periods, the rate at which copyrighted songs from 1923-32 appear in movies increased from once every 7.8 years in time period one to once every 3.3 years in time period two. The following graph shows the comparative increase in terms of average yearly use of a song in a movie, an increase for public domain songs from .065 uses per year to .263 uses per year and an increase for copyrighted songs of from .128 uses per year to .304.

Figure 1



Since the songs from 1913-22 fell into the public domain, they have been used on average four times more frequently in movies. The songs from 1923-32 also appear more

frequently in movies over the same time period. The change, however, is more modest, an increase of a little less than 2.5 times as frequently. Since the rate of change is greater for the public domain songs, it is clear that their transition from protected work to unprotected work did not render them under-exploited in relation to works that remain protected by copyright. Public domain songs from this era do not become orphans that are unavailable for public consumption.

This result is consistent with my prior study of bestselling fiction from the same period.⁴¹ That research compared the 166 bestselling novels from 1913-22 with the 167 bestselling novels from 1923-32 and found that from 1988-2001, novels in the public domain were in print at a rate insignificantly different than novels still under copyright.⁴² After 2001, the public domain novels were in print at a significantly higher rate, with significantly more editions per novel.⁴³ In 2006, the in-print rate for the public domain novels was 98% as compared to 74% for the copyrighted novels.⁴⁴ A comparison of the sub-sets of the twenty most enduringly popular novels generated similar results.⁴⁵

In important ways, however, the data on song compositions is even more striking than the book data. The study of best-selling fiction measured the availability of copies of the original work. The cost of scanning a book into a computer and printing it is quite low; many Dover versions of bestselling classics sell for less than four dollars.⁴⁶ It's not hard to see why public domain status might encourage the printing of a book. If one chooses to print a copyrighted book instead, the additional licensing cost would have a

⁴¹ See Heald, *supra* note 6, at ____.

⁴² *Id.* at ____.

⁴³ *Id.* at ____.

⁴⁴ *Id.* at ____.

⁴⁵ *Id.* at ____.

⁴⁶ See amazon.com (advanced book search under “publisher/Dover” and “subject/literature and fiction”).

significant effect on the overall cost of production. The proportional cost savings of choosing a public domain song for a movie is likely to be much lower. Because a musical composition, whether it is protected by copyright or not, can only appear in a movie as a derivative work, the director of the film must either hire musicians or singers (or both) in order to realize a version of the composition, or she must obtain a license to use an existing recording of the composition. Creating the derivative work from “scratch” will likely entail significant costs and the alternative of using an existing recording will likely entail the payment of a significant licensing fee to the owner of the recording. These costs will be incurred *even if* the underlying musical composition is in the public domain.⁴⁷

Using a musical composition in a movie, therefore, is likely to be significantly more expensive than copying a book because it entails the creation of a new derivative work or the purchasing of a license to use one created by someone else. A film director can save some money by telling his musical director to choose only public domain compositions for the score, but the savings will be proportionally smaller. The music director must still find someone to play the music or obtain a license to play an existing sound recording. Despite the marginal savings of choosing public domain music, almost certainly a smaller margin than saved by book publishers, the data on musical compositions nonetheless suggest a significant public domain effect.

B. *No Evidence of Over-Exploitation*

Two sorts of over-exploitation arguments have been offered by those who worry about what happens to works when they fall into the public domain. First, works may

⁴⁷ Sound recordings of public domain compositions are independently protectable under 17 U.S.C. 106(7). *Compare* 106(2) (establishing separate protection for musical compositions).

simply be overused and worn out, like a song we have heard so frequently we do not want to hear it again. Second, inappropriate uses, even if infrequent, may “recode” the original meaning of a work,⁴⁸ debasing it or otherwise making it less valuable to consumers. The examples most frequently given involve uses of fictional characters in new pornographic works.⁴⁹

1. No Evidence of Worn-Out Songs

Each song in the public domain data set on average appears in a movie once every 3.8 years; each song in the copyrighted data set on average appears in a movie once every 3.3 years. This makes it very difficult to argue that these songs need owners in order to prevent them from being worn out and devalued. If copyright owners are willing to license their compositions at a higher rate than public domain compositions are used, then the evidence against over-exploitation seems conclusive.

Even the most intense periods of usage of the public domain songs, *Danny Boy* (1913), with nine movie appearances between 1993 and 2001 and *After You've Gone* (1918), with nine movie appearances between 1996 and 2006, do not outstrip the periods of most intense usage for compositions protected by copyright. For example, in the 1930's, *Sweet Georgia Brown* (1925) appeared in 15 movies, *Am I Blue?* (1929) in 17 movies, and *Happy Days Are Here Again* (1929) in 34 movies. More recently, the Irving Berlin classic *Blues Skies* (1927) appeared in 10 movies from 1994-2004; *Stardust* (1929) appeared in 10 movies in the 1990's; and *Dream a Little Dream of Me* (1931) appeared in 10 movies from 1995-2005. Copyright owners seem to be willing to license their compositions at rates equal to or exceeding that of the most intensely used public domain

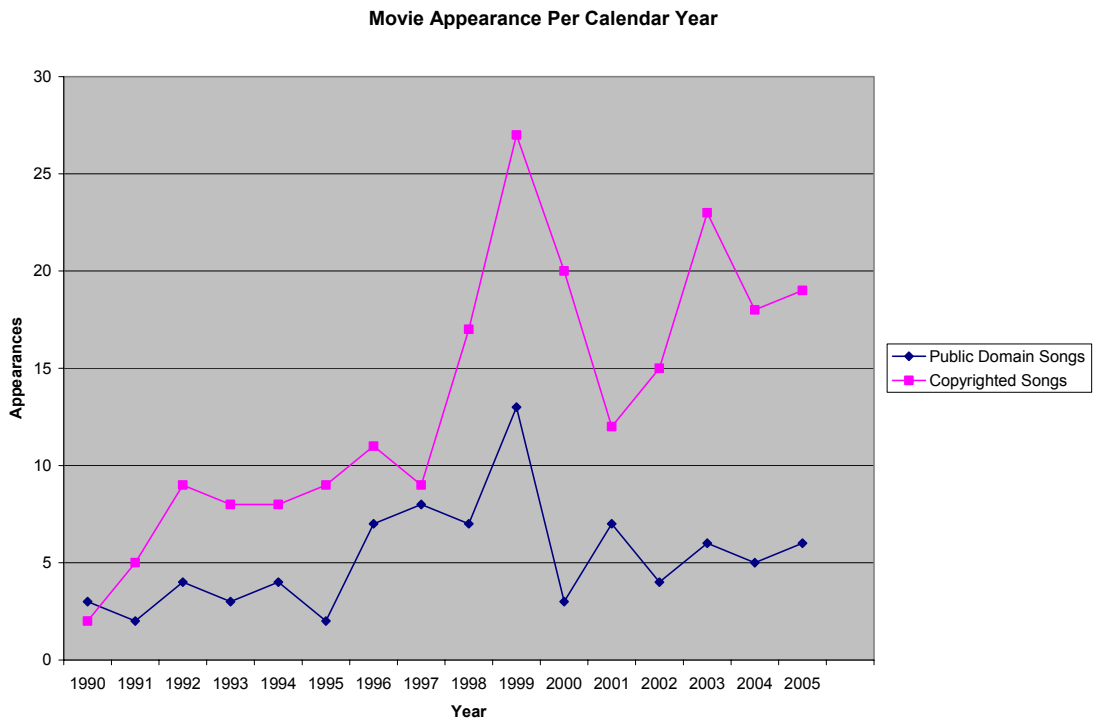
⁴⁸ See Hughes, *supra* note 9, at ____.

⁴⁹ See Liebowitz, *supra* note 9, at 5-6 (speculating about porno tales involving Dr. Seuss's character the Grinch).

compositions. When a song falls into the public domain, the data provide no evidence that it will be overexploited and worn out by moviemakers.

2. No Evidence of Compositions Being Debased

Even if a film is not subject to overly frequent use, some worry that a handful of “inappropriate” uses might debase the value of the original work, rendering it less desirable for consumption. If public domain songs have been subjected to damaging uses, therefore, one would expect them to be used less frequently in movies after the damaging use. After all, a rational film director would not want to alienate his audiences with a composition that had been previously debased. Evidence of debasement should show up in decreasing demand for public domain music over time as compared to copyrighted music from the same era. The chart below tracks the number of appearance per calendar year of songs from both the public domain and copyrighted data sets between 1990 and 2005.



The 19 public domain songs are, of course, used in fewer movies in absolute terms than the 55 copyrighted songs. This accounts for the gap between the curves. Most importantly, the lack of a statistically significant difference between the shape of the two curves. In other words, given the rate of exploitation of the copyrighted songs, the rate of exploitation of public domain songs is just as one would predict. There is no evidence that pervasive inappropriate uses have made them less desirable as a group to be chosen by movie directors. The formal statistical analysis supporting this conclusion is found in Appendix C.

Unfortunately, the sample of movie uses is too small to measure accurately whether any particular public domain song has been damaged, damage that might be masked by its inclusion in the larger set of songs. Evidence from my previous study of bestselling fiction, however, provides some interesting evidence on individual books. At Year 75 after publication, the twenty most enduring popular works from 1913-22 were in

print at an average of 4.7 editions per title.⁵⁰ At Year 80 after publication, the average is 9 editions per title, and at year 85 it rises to 13.4 editions per title.⁵¹ By the year 2006, an average of 26.6 editions per title are in print.⁵² As with popular songs from the same era, the data demonstrate no evidence that pervasive inappropriate uses have reduced the attractiveness of the works for production and delivery to the public. The story is the same when one looks at the individual titles. Eighteen of the twenty titles were in print in more editions in Year 80 after publication than in Year 75.⁵³ All twenty experienced an increase from Year 80 after publication to Year 85, and all twenty experienced an increase in the number of available editions from Year 85 after publication to the year 2006.⁵⁴ Moreover, the steepness of the upward sloping curve of editions exceeds that of copyrighted works from the same era over the same periods.⁵⁵ This is not to assert, of course, that there have been no shocking uses of either the songs or the books studied. As discussed below, producer and consumer self-regulation likely explains why works are safe from even pornographic uses.

III. THE EFFICIENT EXPLOITATION DEBATE

Given the lack of empirical support, the persistence of claims that value is dissipated when works fall into the public domain seems curious. In this final section, I explore the paradigmatic examples of inefficient exploitation that have been offered and

⁵⁰ See Heald, *supra* note 6, at ____ (each edition published by a different publisher).

⁵¹ *Id.*

⁵² *Id.*

⁵³ See Appendix C (previously unpublished data). The exceptions are *Pollyana* (1913), by Eleanor Porter, which was published in 5 editions in year 75 after publication and only 4 in year 80, and *Scaramouche* (1921), by Raphael Sabatini, which was published in 5 editions in year 75 after publication and only in 3 editions in year 80. By 2006, *Pollyana* was available in 30 different editions and *Scaramouche* in 18.

⁵⁴ *Id.*

⁵⁵ *Id.* at ____.

suggest a test to identify when problems might occur. Previous skeptics, including myself, have emphasized that even if value is dissipated, we should not worry when it results from the natural interaction of market forces.⁵⁶ I explain below why value may not be dissipated at all when works fall into the public domain.

A. *Under-exploitation*

In my previous work, I identified three conditions that might justify extending copyright protection to an existing work in order to prevent its under-exploitation: 1) The cost of making the initial copy of a work available to the public is high; 2) the cost to free riders of making subsequent copies is low; and 3) the newly available work does not incorporate independently protectable material.⁵⁷ The test had its genesis in arguments over whether old public domain films needed owners in order to ensure their preservation and distribution.⁵⁸ If an old film requires a significant expenditure to repair and yet could easily be copied and distributed without authorization once it is in digital form, the owner of the physical copy of the film arguably lacks an adequate financial incentive to restore the film. The above test builds on this seemingly sensible intuition about a narrow category of works that might require owners to ensure their availability. Given the

⁵⁶ See Karjala, *supra* note 22, at 1072 (criticizing Landes and Posner and arguing that “A change in the demand curve for a work, however, while showing a change in how much society values a particular work relative to whatever else is available, says nothing about the total value to society of all the goods and services available.”) Karjala notes that if the public’s taste for buggies shifts to cars then “[b]uggies are indeed less valuable, but society has incurred no economic loss.” *Id.* Mark Lemley notes that competition changes consumption patterns with durable goods and should also with creative goods formerly protected by copyright. See Lemley, *supra* note 10, at 135-6 (“Our normal supposition is that the invisible hand of the market will work by permitting different companies to compete with each other [to produce a good the public wants].”). See Heald, *supra* note 6, at ____ (“If we trust the market to produce the optimal amount of tangible goods like string, bubble gum, and diet soda without entrusting central control of those products to a single authority, why should we treat intangible public goods like *My Antonia*, the color yellow, or the word “coffee” any differently?”).

⁵⁷ Heald, *supra* note 6, at ____.

⁵⁸ See Lemley, *supra* note 10, at 134 & fn.16 (collecting sources).

reality surrounding aging films, which apparently are more efficiently husbanded by non-owners,⁵⁹ I should have added a fourth proviso: 4) owners are in fact more willing than non-owners to preserve and distribute. This new fourth condition finds added support in a recent study undertaken by the Library of Congress that shows non-owners have been making historic sound recordings available in digital form at a higher rate than their owners.⁶⁰

Where the four conditions are met, perhaps we should be worried about a work falls into the public domain, but it seems clear that these conditions are generally not met with respect to the vast majority of books, music, films or computer programs and other works that were cheap and easy to copy.⁶¹ In general, the copyright term is adequate if it was long enough to stimulate the creation of the work in the first place.⁶² Extra extension, like that found in the Copyright Term Extension Act is not justified except in a tiny fraction of cases. In the absence of these four conditions, we should not expect to see problems with under-exploitation when a work falls into the public domain.

Applying the test to musical compositions as they appear in movies helps explain why we see no under-exploitation with these works. As noted above, a musical composition as it appears in a movie is a derivative work that may be quite costly for the

⁵⁹ See *id.* at 137 & fn.27, citing Deirdre K. Mulligan and Jason M. Schultz, *Neglecting the National Memory: How Copyright Term Extensions Compromise the Development of Digital Archives*, 4 J APP PRAC & PROCESS 451, 472 (2002) (“According to the Internet Movie Database, 36,386 motion picture titles were released from 1927 to 1946. Of those, only 2,480 are currently available on videotape; only 871 are available on DVD; only 114 are available on Pay-Per-View/TV; and only thirteen are available in theaters.”). Lemely notes, “By contrast, just one archive--the Prelinger Archive--has over 27,000 public domain films and has put more than 1,100 online. See Rick Prelinger, Prelinger Archives, online at [http:// www.prelinger.com](http://www.prelinger.com).” *Id.*

⁶⁰ See Tim Brooks, Survey of Reissues of U.S. Recording, Council on Library and Information Resources (2004) (copyright owners have made only 14% of popular recording from 1890-1964 available on CD, while non-owners have made 22% of them available to the public on CD).

⁶¹ See Heald, *supra* note 6, at ____.

⁶² *Id.* at ____.

music director to use and thereby make available in a new form to the public.⁶³ Unlike with making a copy of a book, the first condition arguing in favor of ownership may often be met. Condition two is also probably met: If the movie is in a digital format, it will be quite easy to copy. Condition three, however, is not met, and songs in movies provide a nice example of the salience of that condition. A musical composition as it abides in a soundtrack is surrounded by independently protectable work, like the script, the cinematography, and the sound recording itself, whose copyright is owned by its producer. The musical composition *per se*, the sheet music, cannot be easily extracted without offending the rights of copyright owners of neighboring works. The realization of the old public domain work within a new protected format means that the filmmaker has few real worries about free riding on the composition. In other words, the public domain status of the underlying musical composition does not pose a threat to its continued exploitation, precisely what the data analyzed above shows.

B. Overexploitation: Worn Out Works and Inappropriate Uses

Trademark law provides a nice example of how both sorts of overexploitation fears discussed in Part II (overuse that leads to a work “wearing out” and inappropriate uses that directly debase a work’s value) become operationalized in law. One of the primary bases, for example, for the enactment of the Federal Trademark Anti-Dilution Act⁶⁴ was the fear that unauthorized uses of a trademark would blur its ability to identify the source of its owner’s goods or services. Even if a new KODAK Café or EXXON Shoes were of impeccable quality, Congress feared that a proliferation of uses would render marks like KODAK or EXXON less able to call to mind their original owners. Overuse might

⁶³ See *supra* notes ____ - ____ and accompanying text.

⁶⁴ 15 U.S.C. § 1125(c).

literally wear out the marks. I am currently collecting data on whether such unauthorized uses actually occur in the absence of anti-dilution protection, but there is little doubt that the “wearing out” theory motivated Congress to pass the law in 1988.⁶⁵

On the other hand, traditional trademark infringement provides a good example of how inappropriate uses can directly alter, as opposed to just wear out, the meaning of a symbol. In fact, accountants routinely testify about the amount of pecuniary damage done to the value of a trademark when consumers are confused by an infringer.⁶⁶ If a garment maker sells shirts under the trademark “EXCELSIOR” and establishes a reputation for a high quality product, a subsequent user of the trademark on inferior goods will not only lower the trademark’s value to the garment maker, but also make the word “EXCELSIOR” less usable to the public. Before the infringement, “EXCELSIOR” meant high quality shirts, afterwards it does not. If consumers are successfully confused by an infringer, then the public has been robbed of a valuable mnemonic device.

Given the data presented in Part II, we need to ask why these two concerns might not have the same traction in the context of copyrighted works.

1. Worn Out Songs? Worn Out Anything?

As noted in Part II, each of the most popular public domain songs from 1913-22 appears in movie at a rate of once per 3.8 years, while the most popular copyrighted songs from 1923-32 appear once every 3.3 years. At least in the context of musical compositions in movies, there appears to be no chance that public domain songs are wearing out at a higher rate than their copyrighted counterparts. But what about songs as they are heard on the radio or in television advertising? Is it possible that public domain

⁶⁵ See Gerard N. Magliocca, *One and Inseparable: Dilution and Infringement in Trademark Law*, 85 MINN. L. REV. 949, 975-82 (2001).

⁶⁶ See Gordon V. Smith, *Trademark Valuation* (1997).

songs are being worn out via overexposure in non-movie media?

Landes and Posner,⁶⁷ and Liebowitz and Margolis⁶⁸ recognize that congestion externalities usually are not thought to be a problem with works, like those typically protected by copyright law, which have the characteristics of non-rivalrousness and inexhaustibility. They understand that a song can be sung by one or two or one thousand people at the same time (demonstrating non-rivalrousness) over and over again, day after day, without wearing the song out (demonstrating inexhaustibility). Since the marginal cost imposed by each additional user is presumed to be zero, limiting access would result in a deadweight loss. In fact, if one defines the value of a good in terms of its continued perfect usability, then overuse, is theoretically impossible with pure public goods. Landes and Posner, and Liebowitz and Margolis, however, argue that the relevant measure of value is market value, not usability, and therefore posit that certain sorts of marginal additional uses of a public good may impose positive costs. For example, if dozens of advertisers all chose the same song to market their products on television, the public might tire of the tune, and demand for it would drop, reducing its market value. We might, they speculate, see a musical version of the tragedy of the commons.

With songs, this seems unlikely. First, much media airplay occurs through the broadcaster's acquisition of an ASCAP license. The standard license in no way restricts the number of times a song can be broadcast over any period of time.⁶⁹ In other words, copyright owners, acting through their primary agent, the American Society of Composers and Authors and Publishers, seem utterly uninterested in limiting the airplay

⁶⁷ Landes and Posner, *supra* note 3, at 485.

⁶⁸ Liebowitz and Margolis, *supra* note 9, at 5.

⁶⁹ See http://www.ascap.com/licensing/radio/RMLC_License.pdf (standard license agreement for radio stations).

of their compositions. Broadcasters, not copyright owners, determine how much of a song the public should hear. Presumably, broadcasters voluntarily choose not to overlay a song for fear of alienating the public or reducing the value of a good they would like to offer in the future. Overlaying a musical composition, whether it is copyrighted or in the public domain, is bad business, and copyright owners seem to recognize that by not restraining broadcasters. Public domain songs seem no more likely to be worn out, therefore, than copyrighted songs. It seems utterly specious, at least as to broadcasting, to argue that each song needs an owner to limit its use.

That leaves “background” music used in advertising, in films, and on television which are not licensed through ASCAP, but rather must be negotiated directly with the copyright owner.⁷⁰ My data cast doubt on overuse in movies, and it seems unlikely in other contexts also. For example, with a virtually infinite commons of music to choose from, advertisers are unlikely to risk alienating the public by choosing the same theme music as too many of their peers. A few hours of watching television and listening to radio supports this economic intuition. The traditional tragedy of the commons analogy, therefore, may be inadequate to capture the market for something like music in advertising. Economists usually tell the story of a field subject to overgrazing because no one owns it and therefore no one has the proper incentive to maximize its value. And, of course, empirical evidence shows an increase in agricultural production in England when common fields were enclosed.⁷¹

⁷⁰ See <http://www.harryfox.com/public/hfaPurpose.jsp> (stating that the Harry Fox Agency does not “issue licenses for the use of music in advertising, movies, and TV programs (aka synchronization licensing or ‘synch’) . . . [t]o obtain a synch license, print right, or sample clearance, you need to contact the music publisher directly.”).

⁷¹ See Robert Ellickson, *Property in Land*, 102 YALE L. J. 1315, 1392 (1993).

An advertising jingle presents a significantly different situation. Unlike the farmer who has limited options where to graze his cattle, the advertiser has thousands of songs to choose from. A farmer with a thousand choices of equally cheap and desirable fields on which to graze his cattle would rationally choose not to overgraze any particular one. It would be pointless and might cost him in the future. Overgrazing in the presence of numerous choices of fresh fields might even impose a reputational cost. So too with advertisers choosing music to sell their products. Advertisers have no reason to overgraze when musical options are plentiful, and, more importantly, when the costs associated with annoying the public are too high. Overuse of background music, as with broadcast music, would be a bad marketing decision that is unlikely to need regulation.

Before attempting to list the conditions under which a work might be worn out, it should be noted that music presents a slightly harder case than the bestselling fiction presented in my earlier research. Books, unlike trademarks and sometimes songs, are not thrust in the face of an unwilling public. One can imagine the public getting tired of encountering a ubiquitous song or getting tricked by a misused trademark, but it's difficult to see how the multiplicity of editions of a book could make the public sick of the story. *My Antonia* (1918), by Willa Cather, is available in at least 50 different editions by at least 50 different publishers (cheap paperback, trade paper, hard cover, large print, curricular unit, ebook, audio tape and audio cd) at prices as low as \$2 and as high as \$108;⁷² yet no consumer has to unwillingly encounter the story or its characters. If a consumer encounters the same song in the advertising for fifty products, he or she may get tired of hearing it. The song could not be avoided without turning off the television, switching off the radio, and avoiding places which broadcast ads, but the

⁷²See www.booksinprint.com.

consumer of books will never be forced to consume even a single one of the fifty editions of *My Antonia*. It's difficult to see a work ever wearing out in a situation when the public cannot be forced to encounter it. Consumer choice can be an effective form of regulation preventing the work from wearing out.

In order to state general conditions where concerns of overexploitation might be justified, one must consider the likely private regulation by both producers of works and consumers of them. Consistent with the findings in this study, we should only expect to find congestion in markets for intangible goods potentially protected by copyright only when three conditions exist: 1. Consumption of the good by consumers cannot easily be avoided by them (e.g. some advertising uses); 2. Additional subsequent uses of the good entail no reputational or other costs to the producer (e.g. by alienating consumers); and 3. Substitutes for the good are not cheap and plentiful.

2. Debased Songs? Debased Anything?

The data analyzed in Part II suggest that public domain musical compositions appear in movies with about the same frequency as one would predict that similar copyrighted compositions would appear. This suggests they have not been debased in some way by inappropriate uses that render them no longer fit for public consumption.⁷³ My earlier study fiction is even more strongly suggestive of a lack of this sort of congestion. Why then does the worry over inappropriate uses debasing works persist?

As noted above, virtually every commentator who takes the possibility of debasement seriously points to unauthorized uses of fictional characters as their prime example, not to the making of unauthorized copies of books or songs. The entire debate

⁷³ See *supra* notes ___ - ___ and accompanying text.

seems to turn on the effect of having unauthorized porn movies starring Mickey Mouse⁷⁴ or Superman.⁷⁵ No commentators worried about unauthorized pornography seem aware of the vast amount of unauthorized “inappropriate” works that have already been produced. A quick search of the Internet Adult Film Database (www.iafd.com) reveals six pornographic movies with “Cinderella” in the title, including *Cinderella in Chains* and its two sequels, three with Snow White in the title, and a whopping 19 featuring Santa Claus.⁷⁶ Searches on the same database of “Apollo” and “Zeus” turn up numerous examples of gay cinematic achievement. Unauthorized porn fan fiction (“slash fiction”) also abounds, starring such characters as Harry Potter, Captain Kirk and Mr. Spock, and Starsky and Hutch.⁷⁷ Is there a serious argument that Cinderella, Santa, mythical Greek Gods, Harry Potter, and Star Trek characters are worth less now than before these works were produced?

Probably not. Consumer and producer self-regulation likely combine to nullify the potential negative effects of unauthorized uses of fictional characters. Consumers who would be offended by a porno Mickey will not purchase a movie or read the fan fiction setting forth his daring new exploits. Those who deliberately seek out the new Mickey will do so because the porn version enhances Mickey’s value to them, rather than detracts from it. Movies, books, and images that must be deliberately sought out by consumers are unlikely to negative effect the value of the fictional characters portrayed therein.

This suggests that the most serious problem might be posed by goods like t-shirts

⁷⁴ See Landes and Posner, *supra* note 1, at ____.

⁷⁵ See Green, *supra* note 11, at 919.

⁷⁶ See www.iafd.com (last visited, December 21, 2007).

⁷⁷ See “Slash fiction” at http://en.wikipedia.org/wiki/Slash_fiction.

which cannot be avoided by the public when the wearer strolls down the street. This danger is probably lessened by the natural reluctance of producers and distributors to sell offensive material. The GAP is unlikely to start selling a t-shirt portraying Mickey and Goofy in bed together. In other words, producer self-regulation, like consumer self-regulation diminishes the likelihood that serious damage will be done to an iconic character. The internet, however, provides a venue where the reputation costs of selling offensive items like t-shirts may be low enough to sustain a market. If the GAP will not sell the offensive t-shirt, then someone on-line might. An internet purchase might end up being displayed on the chest of someone walking down the street. We could potentially encounter an image portraying Mickey and Goofy in compromising circumstances, despite our best efforts to avoid it.

The number of pedestrians wearing of offensive gear, however, is likely to be quite low. There are reputational costs to the wearer that will deter all but a handful of people from displaying such goods in public. And more importantly, Disney will employ its lawyers to prevent the unauthorized sale of its trademarked images.⁷⁸ Trademark law provides strong protection against unauthorized uses of franchised fictional characters. Not all characters function as trademarks, however, so the potential for an offensive Cinderella or Snow White t-shirt remains a possibility, although the author has never encountered one.

To generalize the conditions of the discussion above, debasement of a work not protected by copyright would seem unlikely when: 1. Consumers must deliberately seek out and consume the good; 2. Presenting the good to the consumer entails no

⁷⁸ See <http://tess2.uspto.gov/bin/showfield?f=doc&state=df4mjh.2.22> (trademark registration for image of Mickey Mouse); <http://tess2.uspto.gov/bin/showfield?f=doc&state=df4mjh.5.3> (Disney trademark registration for Goofy).

reputational or other costs to the producer (e.g. by alienating consumers); 3. Public consumption entails no reputational costs to the consumer; and 4. Consumption is lawful (e.g. it entails no violation of trademark law, obscenity law or libel). These four conditions are likely to be so seldom met that the burden of proving over-exploitation, especially in light of the data presented herein, should be squarely placed on those who claim it is a serious problem worthy of government intervention in the market.

CONCLUSION

The study of the most popular musical compositions published from 1913-32 as they appear in movies from 1968-2007 suggests that the film market for public domain music functions as efficiently as the market for copyrighted music without any special governmental intervention, such as retroactive copyright term extension. This confirms similar research conducted on the exploitation of bestselling fiction from the same era. These studies cannot prove that copyright protection (beyond that necessary to stimulate the creation of a work in the first instance) is never necessary, but they suggest that the over- and under-exploitation hypotheses offered by several economists are suspect. Surely the time has come to place the burden of proof on those who predict valuable works in the public domain will suffer from serious market failure. Legislation should be based on sound empirics.

In the absence of concrete evidence, we are left with predicting the behavior of rational actors, which indicates that self-regulation by producers and consumers of public domain goods will discipline the market. Their likely behavior suggests four conditions necessary for under-exploitation and the four conditions necessary for over-exploitation. These conditions suggest that any legislative response should be very specifically

targeted to a very narrow set works. Blanket term extension to all sorts of works in all sorts of contexts, with its significant attendant costs, cannot be justified by a handful of very narrow, and unproven, hypotheticals.

APPENDIX A

Year	Title	Composer(s)
1909	By the light of the silvery Moon	Edward Madden; Gus Edwards
1910	Let me call you sweetheart	Beth Whitson; Leo Friedman
1911	Alexander's Ragtime Band	Irving Berlin
1912	It's a long way to Tipperary	Jack Judge; Harry Williams
1913	El Choclo	A.G. Villoldo; G.J.S.W.
	Danny Boy	Frederick E. Weatherly
	You Made Me Love You--I Didn't Want to Do It	Joe McCarthy; James V. Monaco
1914	St. Louis Blues	William Christopher Handy
	Pack Up Your Troubles in Your Old Kitbag and Smile, Smile, Smile	George Asaf; Felix Powell
1916	Colonel Bogey	Kenneth J. Alfred (pseud. of Major F.J. Ricketts)
	I Ain't Got Nobody	Roger Graham; Spencer Williams & Dave Peyton
	Poor Butterfly (The Big Show)	John L. Golden; Raymond Hubbell
1917	Over There	George Michael Cohan
1918	After You've Gone	Henry Creamer & Turner Layton
1920	Avalon	Al Jolson & Vincent Rose
	Look for the Silver Lining (Good Morning, Dearie)	Bud De Sylva; Jerome Kern
	Whispering	Malvin Schonberger; John Schonberger
1921	The Sheik of Araby (Make it Snappy)	Harry B. Smith & Francis Wheeler; Ted Snyder
1922	Hot Lips	Henry Busse, Henry Lange & Lou Davis
1923	Bugle Call Rag	Jack Pettis, Billy Meyers & Elmer Schoebel
1924	The Man I Love (Strike Up the Band)	Ira Gershwin; George Gershwin
	Tea for Two (No, No, Nanette)	Irving Caesar; Vincent Youmans
1925	Manhattan (Garrick Gaieties)	Lorenz Hart; Richard Rodgers
	Rhapsody in Blue	George Gershwin
	Show Me the Way to Go Home	Irving King
	Sweet Georgia Brown	Ben Bernie, Maceo Pinkard & Kenneth Casey
	Yes Sir, That's My Baby	Gus Kahn; Walter Donaldson
1926	Are You Lonesome Tomight?	Roy Turk & Lou Handman
	Bye Bye Blackbird	Mort Dixon; Ray Henderson
	La Cumparsita	G.H. Matos Rodriguez; Vincenzo Billi
	Someone to Watch Over Me (Oh, Kay!)	Ira Gershwin; George Gershwin
1927	The Best Things in Life Are Free (Good News)	Bud G. De Sylva, Lew Brown & Ray Henderson
	Blue Skies	Irving Berlin
	My Blue Heaven	George Whiting; Walter Donaldson
1928	I Can't Give You Anything But Love	Dorothy Fields; Jimmy McHugh
	I Wanna Be Loved By You (Good Boy)	Bert Kalmar; Herbert Stothart & Harry Ruby
	If I Had You	Ted Shapiro, Jimmy Campbell & Reginald Connelly
	Let's Do It (Paris)	Cole Porter
	Let's Misbehave (Paris)	Cole Porter

	Makin' Whoopee!	Gus Kahn; Walter Donaldson
	Sweet Lorraine	Mitchell Parish; Cliff Burwell
	When You're Smiling--the Whole World Smiles with You	
1929	Ain't Misbehavin' (Hot Chocolates)	Mark Fisher, Joe Goodwin & Larry Shay
	Am I Blue?	Andy Razaf; Thomas Waller & Harry Brooks
	Bolero	Grand Clarke; Harry Akst
	Happy Days Are Here Again	Maurice Ravel
	Honeysuckle Rose (Load of Coal)	Jack Yellen; Milton Ager
	Singin' in the Rain	Andy Razaf; Thomas Waller
	Star Dust	Arthur Freed; Nacio Herb Brown
	You Do Something to Me (Fifty Million Frenchmen)	Mitchell Parish; Hoagy Carmichael
1930	Beyond the Blue Horizon	Cole Porter
	Body and Soul (Three's a Crowd)	Leo Robin; Richard Whiting & W. Franke Harling
	Embraceable You (Girl Crazy)	Edward Heyman, Robert Sour & Frank Eyton; John W. Green
	Exactly Like You	Ira Gershwin; George Gershwin
	Georgia On My Mind	Dorothy Fields; Jimmy McHugh
	Get Happy	Stuart Gorrell; Hoagy Carmichael
	I Got Rhythm (Girl Crazy)	Ted Koehler; Harold Arlen
	Just a Gigolo	Ira Gershwin; George Gershwin
	Love for Sale (The New Yorkers)	Irving Caesar; Leonello Casucci
	My Ideal	Cole Porter
	On the Sunny Side of the Street	Leo Robin; Richard Whiting & Newell Chase
	Sleepy Lagoon	Dorothy Fields; Jimmy McHugh
	Three Little Words	Jack Lawrence; Eric Coates
	You Brought a New Kind of Love to Me	Bert Kalmar; Harry Ruby
1931	Dancing in the Dark (The Band Wagon)	Sammy Fain, Irving Kahal & Pierre Norman
	Dream a Little Dream of Me	Howard Dietz; Arthur Schwartz
	I Found a Million Dollar Baby--In a Five and Ten Cent Store (Billy Rose's Crazy Quilt)	Gus Kahn; W. Schwandt & F. Andree
	Life is Just a Bowl of Cherries	
	Minnie, the Moocher--The Ho De 'Ho Song	Billy Rose & Mort Dixon; Harry Warren
	Mood Indigo	Lew Brown & Ray Henderson
	Out of Nowhere	Cab Calloway & Irving Mills
1932	It Don't Mean a Thing	Duke Ellington, Irving Mills & Albany Bigard
	Night and Day	Edward Heyman; John W. Green
	You're Getting to Be a Habit with Me	Irving Mills; Duke Ellington
		Cole Porter
		Al Dubin; Harry Warren

APPENDIX C

Title	Author	Pub Yr	60	65	70	75/PD	80/PD	85/PD	2006 status
Pollyanna	Porter, Eleanor	1913	0	0	0	5	4	10	30 print/5 ebooks
O Pioneers!	Cather, Willa	1913	2	1	0	3	8	13	38 print/5 ebooks
Sons and Lovers	Lawrence, D.H.	1913	3	5	5	7	10	14	24 print/7 ebooks
Dubliners	Joyce, James	1914	2	2	4	2	10	11	24 print/5 ebooks
Tarzan of the Apes	Burroughs, Edgar	1914	2	2	3	3	5	10	39 print/6 ebooks
Of Human Bondage	Maugham, Somerset	1915	6	5	5	3	6	11	18 print/3 ebooks
The Song of the Lark	Cather, Willa	1915	1	1	2	3	5	10	17 print/2 ebooks
The Lone Star Ranger	Grey, Zane	1915	0	1	2	2	4	4	18 print/4 ebooks
A Portrait of the Artist	Joyce, James	1916	3	3	6	4	12	15	34 print/4 ebooks
The Magnificent Ambersons	Tarkington, Booth	1918	3	1	3	2	3	7	18
My Antonia	Cather, Willa	1918	2	1	4	4	18	42	50 print/3 ebooks
Winesburg, Ohio	Anderson, Sherwood	1919	2	1	2	6	12	26	29 print/5 ebooks
This Side of Paradise	Fitzgerald, F. Scott	1920	2	1	3	6	12	23	24 print/6 ebooks
Main Street	Lewis, Sinclair	1920	2	3	3	8	11	27	27 print/6 ebooks
The Age of Innocence	Wharton, Edith	1920	1	2	3	12	15	35	35 print/7 ebooks
Scaramouche	Sabatini, Raphael	1921	0	1	1	5	3	18	18
Babbitt	Lewis, Sinclair	1922	2	3	4	10	12		30 print/7 ebooks
The Beautiful and the Damned	Fitzgerald, F. Scott	1922	1	2	2	2	11		18
Captain Blood	Sabatini, Raphael	1922	0	0	0	2	8		22
Ulysses	Joyce, James	1922	4	5	6	8			19 print/3 ebooks 532 print/97 ebooks
Totals for 20 books			38	40	58	93	181	268	
Ave. Publ/Ed Per Print Book			1.9	2	2.9	4.7	9	13.4	26.6