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Note

Reform In The "Brave Kingdom": Alternative Compensation Systems For Peer-To-Peer File Sharing

Joseph Gratz*

* J.D. expected 2005, University of Minnesota Law School; B.A. 2002, University of Wisconsin – Madison. Thanks to David McGowan, Rob Kaye, and discussants on the Pho listserv for comments on earlier drafts. This paper won first prize at the University of Minnesota Law School in ASCAP's 2004 Nathan Burkan Memorial Competition.

INTRODUCTION

In act three, scene two of *The Tempest*, Stephano, a drunken steward, has just crowned himself mock-king of the island on which he and his master are stranded. He hears music, but he cannot tell where the music is coming from. "This will prove a brave kingdom to me," he says, "where I shall have my music for nothing."[1]

Like Stephano, millions of Internet users stand amazed at the variety of music available to them "for nothing." Technology has made instant distribution of music to home computers widely available. Most people do not pay for their downloads. The peer-to-peer file sharing world teeters on the edge of legitimacy. Users are unsure of whether to start paying for music or keep downloading with hope the music will keep playing.

The instability of the current peer-to-peer file sharing situation, is captured by the story of Brianna LaHara.[2] After using KaZaA to share her favorite songs, Brianna was sued for copyright infringement, and she settled for $2,000.[3] Brianna is twelve years old.[4] What combination of fear, desperation, and hubris could drive the Recording Industry Association of America (RIAA) to sue a child on behalf of its member record companies?

The answer is the popularity of peer-to-peer file sharing. Among young music fans, peer-to-peer file sharing ("P2P") is an exceedingly popular way to consume music. For some, P2P is the only way to access music.[5] P2P certainly owes much of its

1. *See* WILLIAM SHAKESPEARE, THE TEMPEST act 3, sc. 2 (George Lyman Kittredge, ed., Anthenæum Press 1939).

2. Adam Liptak, *The Music Industry Reveals Its Carrots and Sticks*, N.Y. TIMES, September 14, 2003, § 4, at 5.

3. *Id.*

4. *Id.*

5. *See* http://whatacrappypresent.com (last visited October 17, 2004) (humorously warning parents against giving CDs as gifts because kids

popularity to its price. It is free, but other factors also contribute to its widespread use. The selection is unbeatable; any music ever released on compact disc (CD) is likely to be available on a P2P network. The most popular songs are widely available and, because of their popularity, download in a flash. Because each song is downloaded at zero marginal cost to the consumer, music fans can try music they would otherwise not purchase; if they don't like it, they can simply delete it. The problem is that much of this P2P downloading is illegal. Since neither artists nor record companies profit from P2P downloads, as downloading becomes a popular alternative to purchasing CDs the viability of the music industry's current structure is threatened.

Licensing under the current regime makes legitimate peer-to-peer distribution of commercial recordings very difficult. Several scholars have proposed alternative compensation systems. This article presents an alternative compensation system that, unlike the proposals of Neil Weinstock Netanel, William W. Fisher III and Jessica Litman, is technically feasible, economically sound, and does not require modifications to international agreements to which the United States is a party.

I. THE CURRENT REGIME

Any musical recording involves two separate copyrighted works: the musical work and the sound recording. The audio heard on a CD is covered by a "sound recording" copyright.[6] The underlying musical composition, which includes elements such as melody, lyrics, and harmony that could be written down on sheet music is protected by a separate "musical work" copyright.[7] Because musical recordings are copyrighted, a license is required for anyone other than the copyright holder to copy and disseminate this type of recording. The following sections outline the steps needed to license a number of common methods of dissemination, taking as an example the song "Baby One More Time" on Britney Spears' debut album.

routinely download music).

6. *See* 17 U.S.C. § 102(a)(7) (2000) (listing sound recordings among categories of copyrightable works).

7. *See* 17 U.S.C. § 102(a)(2) (2000) (listing musical works among categories of copyrightable works).

A. LICENSING FOR CD REPRODUCTION

Imagine I wish to use my computer to burn a few dozen CDs containing Britney Spears' recording of "Baby One More Time" to give to friends and acquaintances. My computer is not a "digital audio recording device" as defined in 17 U.S.C. § 1001,[8] so the noncommercial use exemption of 17 U.S.C. § 1008 does not apply.[9] In addition, the Recordable CDs (CD-Rs) I am using are primarily intended to hold non-musical data, so no royalty is included in the purchase price of the CD-Rs. Burning copies of this song on these discs constitutes copyright infringement.[10] Thus, I must get a license to use both the sound recording and the underlying musical work to lawfully make and distribute these CDs to my friends and acquaintances.

Permission to produce and distribute phonorecords[11] of the musical work is known as a "mechanical license."[12] Mechanical licenses are subject to the compulsory license scheme set forth in section 115 of the Copyright Act.[13] Licenses for the production of phonorecords must be issued at a rate set by

8. *See* 17 U.S.C. § 1001(3) (2000) (defining digital audio recording device as any machine or device with a digital recording function "designed or marketed for the primary purpose of . . . making a digital audio copied recording for private use").

9. *See* 17 U.S.C. § 1008 (2000) (prohibiting copyright infringement actions based on noncommercial use of digital audio recording devices, but including no prohibition for use of a computer).

10. *See* 17 U.S.C. § 1001(4)(B)(ii) (2000) (excluding media marketed and commonly used "for the purpose of making copies of nonmusical literary works" from the definition of "digital audio recording medium"); 17 U.S.C. § 1003(a) (2000) (mandating royalty payments by manufacturers of digital audio recording media); 17 U.S.C. § 1008 (2000) (prohibiting copyright infringement actions based on noncommercial copies made onto digital audio recording media, but failing to similarly prohibit copyright infringement actions involving noncommercial copies made onto media not classified as digital audio recording media).

11. 17 U.S.C. § 101 (2000) (phonorecord is defined as "any material object in which sounds . . . are fixed by any method now known or later developed, and from which the sounds can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device"). From this definition LPs, CDs, cassette tapes, and computer disks containing sound recordings are phonorecords. *Cf.* AL KOHN & BOB KOHN, THE ART OF MUSIC LICENSING 56, 307 (Prentice Hall Law & Business, 1992).

12. AL KOHN & BOB KOHN, *supra* note 11, at 45, 310.

13. 17 U.S.C. § 115 (2000) ("In the case of nondramatic musical works, the exclusive rights provided by clauses (1) and (3) of section 106, to make and to distribute phonorecords of such works, are subject to compulsory licensing under the conditions specified by this section."); AL KOHN & BOB KOHN, *supra* note 11, at 310-311.

statute.[14] As of September 2004, the statutory rate was 8.5 cents per phonorecord or 1.65 cents per minute of playing time or fraction thereof, whichever is greater.[15]

"Baby One More Time" was composed by Max Martin.[16] Therefore, he was the original holder of the copyright underlying the musical work recorded by Spears.[17] Rather than personally handle requests for compulsory mechanical licenses, Martin assigned his copyright to Zomba Enterprises, a music publishing company.[18] As is common in the music industry, Zomba Enterprises, in turn, authorized the Harry Fox Agency (HFA) to issue licenses on its behalf.[19] Due to this series of copyright assignments, if I wish to lawfully distribute CDs containing "Baby One More Time," I must obtain permission to do so and pay 8.5 cents per copy to the HFA.[20] The Harry Fox Agency will distribute 93.25% of the license fee to Zomba Enterprises,[21] and Zomba Enterprises will then likely disperse a contractually-specified amount of that percentage to Max Martin. This process allows me to produce and distribute copies of the underlying musical work.

Before I begin burning CDs, I must also secure a license for the sound recording of "Baby One More Time." Since no compulsory license system is in place for sound recordings, I must enter into a "master use license" with the copyright owner of the sound recording to lawfully copy the recording.[22] Ordinarily, the record company that released the recording

14. *See* 17 U.S.C. § 115(c) (2000); AL KOHN & BOB KOHN, *supra* note 11 at 311.

15. United States Copyright Office, *17 U.S.C. §115 Mechanical License Royalty Rates* (stating current mechanical license royalty rates), *at* http://www.copyright.gov/carp/m200a.html (last visited October 17, 2004).

16. Copyright Registration No. PA-922-764 (registered Oct. 29, 1998).

17. *Id.*

18. *See* http://www.copyright.gov/records/cohd.html (last visited October 17, 2004) (showing Zomba Music Publishers as the copyright owners on a search of assignment V3488 P611). In an assignment recorded at V3488 P611, the copyright was assigned to Zomba Music Publishers.

19. http://www.harryfox.com/index.jsp (last visited October 17, 2004) ("[The Harry Fox Agency] is the foremost mechanical licensing, collections, and distribution agency for U.S. music publishers."); AL KOHN & BOB KOHN, *supra* note 11 at 320.

20. United States Copyright Office, *supra* note 15.

21. http://www.harryfox.com/public/hfaInfoCommission.jsp (last visited October 18, 2004) (stating that the Harry Fox Agency retains a 6.75% commission for its services).

22. AL KOHN & BOB KOHN, *supra* note 11 at 11.

owns the copyright.[23] To burn copies of Britney Spears' "Baby One More Time," I would have to negotiate a master use license with Zomba Recordings, the parent company of Jive Records, the company that released Spears' debut CD.[24] No central administrator of master use rights exists, so each licensee must negotiate directly with the copyright owner.[25] Once I have obtained a mechanical license from the Harry Fox Agency to lawfully use the musical work and a master use license from Zomba Recordings to use the sound recording, I am able to lawfully make and distribute CDs to my friends and acquaintances.

B. PUBLIC PERFORMANCE

Now imagine that I have acquired a lawful copy of "Baby One More Time." Let us make the further (counterfactual) assumption that I enjoy the song, and want to share it with my nightclub's patrons. Simply playing the CD without a license would be a violation of 17 U.S.C. § 106(4), because I would be publicly performing the underlying *musical work*.[26] Note that playing the CD in my club does not violate any exclusive right in the *sound recording*. In general, there is no exclusive right to public performance of a sound recording.[27] Thus, in the case of a public performance of the recording as opposed to CD production, I only need to a license from the copyright holder of the musical work.

My task is aided by Performing Rights Organizations (PROs). The PROs act as agents for music publishers by collecting performance royalties on their behalf.[28] Three PROs

23. *See* AL KOHN & BOB KOHN, *supra* note 11 at 10.

24. *See* Copyright Registration No. SR-314-996 (registered Feb. 26, 2001).

25. *See* 6-30 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 30.03 (2004).

26. *See* 17 U.S.C. § 106(4) (2000) (granting copyright holders the exclusive right "in the case of literary, musical, dramatic, and choreographic works, pantomimes, and motion pictures and other audiovisual works, to perform the copyrighted work publicly").

27. *See* 17 U.S.C. § 106(6) (2000) (granting the exclusive right to perform sound recordings "by means of a digital audio transmission"). Playing a CD in a club is not a "transmission" because the audio signals are not "received beyond the place from which they are sent." 17 U.S.C. § 101 (2000).

28. *See* Broadcast Music, Inc. (stating BMI collects license fess on behalf of creators it represents), *at* http://www.bmi.com/about/backgrounder.asp (last visited October 17, 2004); The American Society of Composers, Authors and Publishers (stating ASCAP protects members' rights by licensing and distributing royalties), *at* http://www.ascap.com/about (last visited October 18,

operate within the United States: The American Society of Composers, Authors and Publishers (ASCAP), Broadcast Music, Incorporated (BMI), and the Society of European Stage Authors and Composers (SESAC).[29] These organizations grant blanket licenses to establishments of public accommodation, such as bars and nightclubs that play music for their patrons.[30] The performance rights for "Baby One More Time" are administered by ASCAP.[31] To play this song from a CD in my club, I may enter into a blanket license for the use of any ASCAP-licensed music. If after negotiating with ASCAP, I believe the PRO is offering an unreasonable license rate, I may initiate a "rate court" proceeding.[32] During this proceeding, a judge fixes a reasonable rate for the license I seek to obtain. Under a consent decree known as the Amended Final Judgment of March 14, 1950, ASCAP may not deny licenses to any establishment willing to pay a judicially-fixed license rate.[33] Once I have obtained a public performance license from ASCAP in accordance with this procedure, I may legally play Spears' CD in my establishment *ad nauseam* (which shouldn't take very long).

C. WEBCASTING

Imagine, further, that merely playing "Baby One More Time" in my nightclub does not satisfy my urge to share Spears' unique *joie de vivre*. I decide I must disseminate the song via the Internet. To acquire performance rights to the musical work, I must enter into a license with ASCAP as described above. As for the sound recording, "Baby One More Time," the Copyright Act grants the owner of a sound recording

2004).

29. AL KOHN & BOB KOHN, *supra* note 11 at 625-27.

30. *See* American Society of Composers, Authors and Publishers**,** *ASCAP Licenses A-Z* (listing a diverse range of available ASCAP license types, from Nightclubs to "Jai-Alai Frontons" to "Halls of Fame, Wax Museums, and similar"), *at* http://www.ascap.com/licensing/types.html (last visited October 17, 2004).

31. ASCAP ACE Search for "Baby One More Time" (returning licensing data for "Baby One More Time" by Karl Sandberg Martin, the legal name of songwriter Max Martin, including a performance by Britney Spears), *at* http://www.ascap.com/ace/search.cfm?mode=search (last visited October 17, 2004).

32. *See* Simon H. Rifkind, *Music Copyrights and Antitrust: A Turbulent Courtship*, 4 CARDOZO ARTS & ENT. L.J. 1, 9-11 (1985) (describing the antitrust consent decree creating the ASCAP "rate court" procedure).

33. *See id.* at 9.

copyright the exclusive right "to perform the copyrighted work publicly by means of a digital audio transmission."[34] In addition to this provision, Congress amended the Copyright Act in 1998 to include a compulsory license scheme for webcasting.[35] A webcast is a digital audio transmission. Therefore, I must license the sound recording, in addition to the underlying musical work, in order to lawfully webcast the song.

The 1998 compulsory license scheme only applies to noninteractive webcasts.[36] The amendment was designed to guarantee that listeners do not receive advance notice of the specific music scheduled to be transmitted,[37] thus preventing webcasts from becoming substitutes for CD purchases. Rates and terms for webcast licenses are set by statute.[38] The rates and terms appropriate to a specific situation depend on the nature and scope of the webcasting activity.[39] In response to this regulatory scheme, the RIAA created SoundExchange, a collective rights organization, to administer webcasting licenses.[40] Small noncommercial webcasters with revenues below $50,000 can webcast unlimited sound recordings for $2,000 a year.[41]

What if I want to make copies available on a P2P network? Currently, no compulsory license statute for P2P applications exits. The remainder of this article discusses recent proposals for such a system.

II. COMPULSORY LICENSING PROPOSALS FOR P2P

34. 17 U.S.C. § 106(6) (2000).

35. 17 U.S.C. § 114(2) (2000).

36. 17 U.S.C. § 114(2)(A)(i) (2000).

37. 17 U.S.C. 114(2)(C)(ii) (prohibiting the publication of playlists before transmission).

38. *See generally* 17 U.S.C. § 114(f)(1)(A) (2000) (creating licenses for five categories of webcasters: nonsubscription services, preexisting subscription services, new subscription services, preexisting satellite digital audio radio services, and business establishment services).

39. *See id* (stating terms and rates shall distinguish among currently available forms of digital audio transmissions).

40. Record Industry Association of America ("SoundExchange licenses, collects and distributes public performance revenue for sound recording copyright holders within such digital channels as cable, satellite and webcast transmissions."), *at* http://www.riaa.com/about/collective/default.asp (last visited October 18, 2004).

41. *See* Notification of Agreement Under the Small Webcaster Settlement Act of 2002, 67 Fed. Reg. 78,510, 78,512 (Dec. 24, 2002) (listing minimum fee amounts for small webcasters).

APPLICATIONS

Several respected copyright scholars have proposed systems of compulsory blanket licensing of copyrighted content for Internet use. These proposals share core goals. Professor Neil Weinstock Netanel proposes a "Noncommerical Use Levy" on P2P-related products and services.[42] Professor William W. Fisher III proposes a similar, yet more radical, levy system that would allow greater commercial use within the blanket licensing scheme.[43] Professor Jessica Litman proposes modifications to the Netanel and Fisher proposals.[44] Within these proposals, a alternative methods of raising money, measuring usage, and distributing money have been advanced. Each method has significant problems that stem from the system's displacement of private ordering.

A. COMMON GOALS

The Netanel, Fisher, and Litman proposals share two goals in reforming the copyright system: semiotic democracy and increased efficiency.

1. Semiotic Democracy

Each scholar expresses a desire for a greater variance of expression. Under the current regime, creators who build on existing copyrighted works must get permission from the copyright holder.[45] Because the copyrighted works that form the bulk of our received culture are in the hands of a small number of large corporations, these professors argue that a semiotic oligarchy exits.[46] A small number of powerful players control the creation of meaning in our culture through their stranglehold on copyrighted content.[47] This is essentially a question of equality; the choice of a default term diminishes the ability of all citizens to participate equally in cultural development.

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42. Neil Weinstock Netanel, *Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing*, 17 HARV. J.L. & TECH. 1, 4 (2003).

43. WILLIAM W. FISHER III, PROMISES TO KEEP: TECHNOLOGY, LAW, AND THE FUTURE OF ENTERTAINMENT 202-3 (2004).

44. Jessica D. Litman, *Sharing and Stealing*, 27 HASTINGS COMM. & ENT. L.J. (forthcoming 2004), *available at* http://www.law.wayne.edu/litman/papers/sharing&stealing.pdf.

45. 17 U.S.C. § 106(2) (2000) (granting the exclusive right "to prepare derivative works based upon the copyrighted work").

46. *See e.g.*, FISHER, *supra* note 43 at 201.

47. *See e.g.*, Netanel, *supra* note 42 at 7-9.

The postmodern movement has seen the rise of pastiche and bricolage as popular artistic forms. In pastiche, the artist layers preexisting works and styles to create a new work which plays on the tensions between the combined elements of the preexisting works.[48] In bricolage, the artist uses a variety of cultural tools immediately at hand to create works of art.[49] Against this cultural backdrop, Fisher proposes a goal of "semiotic democracy," distributing the power to make cultural meaning over a larger range of speakers, destroying the oligarchic power of media companies.[50] As Fisher defines it, "[i]n an attractive society, all persons would be able to participate in the process of making cultural meaning. Instead of being merely passive consumers of images and artifacts produced by others, they would help shape the world of ideas and symbols in which they live."[51]

In copyright terms, postmodern creation is the preparation of a series of derivative works.[52] For example, "mash-ups" constitute a genre of popular music. In a mash-up, the vocal track of a popular song is mixed with the instrumental tracks of a different popular song.[53] The resulting work infringes several copyrights.[54] However, due to the relative ease of creating mash-ups and the wide availability of the tools needed to create them, vast numbers of bootleg mash-ups appear on

48. *Cf.* FREDRIC JAMESON, POSTMODERNISM, OR, THE CULTURAL LOGIC OF LATE CAPITALISM 16-19 (Post-Contemporary Interventions, Stanley Fish & Frederic Jameson series eds., 1991) (defining and analyzing the concept of postmodern pastiche).

49. *See* CLAUDE LÉVI-STRAUSS, THE SAVAGE MIND 19 (Julian Pitt-Rivers & Ernest Gellner eds., George Weidenfeld and Nicolson Ltd. trans., 1966) (defining and analyzing postmodern bricolage).

50. JOHN FISKE, TELEVISION CULTURE 236-37 (1987) (defining the term "semiotic democracy" as "delegation of production of meanings and pleasures to . . . viewers").

51. William Fisher, *Theories of Intellectual Property*, *in* NEW ESSAYS IN THE LEGAL AND POLITICAL THEORY OF PROPERTY 168, 193 (Stephen R. Munzer ed., 2001).

52. *See* 17 U.S.C. § 101 (2000) ("A 'derivative work' is a work based upon one or more preexisting works, such as a translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted.").

53. Pete Rojas, *Bootleg Culture*, Salon.com (tracing the development and cultural ramifications of mash-ups), *at* http://www.salon.com/tech/feature/2002/08/01/bootlegs/ (Aug. 1, 2002).

54. *See* 17 U.S.C. § 106(2) (2000) (granting copyright holders the exclusive right "to prepare derivative works based upon the copyrighted work").

Internet sites and file-sharing networks.[55] The ease with which new forms of derivative works are able to be created in the digital age, could plunge copyright holders into a worldwide game of "Whack-A-Mole." Allowing these derivative works to be produced and disseminated will further semiotic democracy, because control of the meaning of the works is seized from media companies and placed in the hands of media consumers.

2. Increased Efficiency

The current music distribution system is rife with transaction costs and other unnecessary burdens on the consumer purchase of music.[56] This is, in essence, an argument about utility; the choice of a default term affects the efficiency of the music distribution system. The most obvious of these – and the easiest to eliminate – is the manufacturing and retailing of physical media. Compulsory licensing has no advantage over other paradigms for digital distribution (such as à la carte downloads) in this respect, however, since they, too, eliminate the cost of manufacturing and distributing physical media.

Compulsory licensing does, however, have an advantage over other market mechanisms in that it is unusually seamless and fast-responding. The money allocated for promotion of music, which currently makes up the bulk of the cost of a CD, could be more efficiently allocated if market signals came directly from consumers rather than through intermediaries like radio station-based research and CD sales figures. By improving the information available, we decrease music producers' uncertainty, which leads to a more efficient allocation of resources. For this to happen, funds must be distributed in proportion to consumer demand for the music.

B. THE PROPOSALS

Three similar proposals for alternative compensation systems have been advanced. First, Professor Fisher proposes a system of compulsory licensing with funds collected through levies and distributed to copyright holders based on popularity. Second, Professor Netanel proposes a similar system which differs in a number of minor respects. Finally, Professor Litman adds opt-out provisions to the Fisher and Netanel

55. Rojas, *supra* note 53.

56. *See* FISHER, *supra* note 43.

proposals and distributes funds to authors, not copyright holders.

1. Fisher's Proposal

Fisher proposes a system of compulsory licensing for both commercial and noncommercial verbatim and derivative reproduction of music and movies.[57] Works would first be registered with the Copyright Office. A levy would be placed on products used to consume media.[58] Usage would be measured through reporting, sampling, and surveys. Funds would be distributed in proportion to the popularity of the work.[59]

a. Registration

Under Fisher's system, a copyright holder who wanted to be paid when his work was used by others would submit the work to the Copyright Office, which would issue a globally unique identifier for the work.[60] Only music and audiovisual works would be eligible for compulsory licensing.[61] Any failure to register would cause the work to fall into the public domain.[62] Once the system was in place, we would eliminate "most of the current prohibitions on the unauthorized reproduction, distribution, adaptation, and performance of audio and video recordings" over the Internet.[63]

Of course, disputes would arise over registrations. Fisher proposes to leave in place current rules about joint ownership of copyrights and the contractual relations between the owners

57. *See* FISHER, *supra* note 43, at 202-4.

58. *See id*. at 216-17.

59. *See id*. at 223-34.

60. *See id*. at 203.

61. *See id*. Fisher offers no justification for this limitation; one assumes that he so limits his proposal because he thinks only music and movies will be traded over P2P networks. Certainly, the choice makes sense because the structure of the music and movie industries lends itself to blanket licensing much better than, for instance, the book publishing or software industries, because while the vast majority of CDs and DVDs are priced between $10 and $30, common book prices range from $1 to $75. Software prices vary even more wildly. Setting a single price for those industries does seem less palatable than for music and movies.

62. *See id*. at 5. This is the first of Fisher's many proposals that would violate United States' treaty obligations. He recognizes these violations, and suggests that the treaties will need to be modified before his system can be implemented.

63. FISHER, *supra* note 43, at 202.

of various copyrights in a single work.[64] Each registration would be subject to a trademark-like "opposition" procedure.[65] If the work in question included portions of other works, the registrant would be required to estimate what percentage of the work to be registered is taken from existing works and to give the registration numbers of the works it excerpts.[66]

b. Collection

Fisher proposes a tax on the goods and services used to gain access to music and film as one method designed to generate the money needed to compensate copyright holders for revenues lost due to legalized P2P sharing.[67] This tax would apply to equipment used to make digital copies, media used to store copies, and Internet access service.[68] Modest taxes on all of these goods, while overinclusive,[69] would generate enough money to compensate creators.[70]

c. Measurement

In order to distribute funds fairly, a rough estimate of the relative popularity of works will be needed. Parties who stream songs to users would be required to report what works, referenced by registration number, were played back at what times.[71] Some loose survey evidence would be used to determine rates of CD burning and how often those burned

64. *See id.* at 204.

65. *Id.* at 205. The wisdom of this procedural proposal is dubious. Trademark holders must expend significant resources "policing" their marks, preventing third parties from appropriating them to keep from losing their rights. Copyright holders have no such obligation. While equitable defenses to an infringement action may eventually arise, in general copyright holders retain their exclusive rights without any affirmative action. It would be extremely costly and inefficient to force copyright holders to search all new registrations to make sure none were fraudulent re-registrations of their works.

66. *See id.* at 205-6.

67. *See id.* at 217.

68. *See id.*

69. There is no way to tell, for instance, which CD-Rs that are sold will be used for the storage of copyrighted music and which will be used for the storage of data or public domain works. Thus, all CD-Rs must be taxed, and some uses of technology unrelated to music and movies will become more costly.

70. *See id.* at 217-22 (estimating the revenue from such taxes based on retail sales figures).

71. *See id.* at 224-25.

CDs get played.[72] File-sharing services would also be required to report all downloads of files bearing a registration number to the Copyright Office.[73] The number of times those downloaded files are actually played would be determined by a system of randomly-sampled usage measurement similar to the current system of television ratings.[74]

Fisher is rightly concerned that unscrupulous parties will attempt to "game" the system, attempting to make the aggregate data reflect something other than the true popularity of the works. For example, imagine that I have written a very bad song, which has received a registration number upon submission to the copyright office. Nobody really wants to listen to my song; if the system operated perfectly, I would get no money from the compulsory licensing authority. But I want money, so I game the system. I modify my file sharing software so that in every download report, it claims I have downloaded my song many thousands of times. I stream my song from one computer of mine to the other all day and all night, reporting each stream to the Copyright Office. Not satisfied with these numbers, I write a computer virus that causes each infected machine to report thousands of downloads of my song and to stream my song continuously. Quickly, my song seems to be very popular, and I get a healthy slice of the money allocated to compensate creators.[75]

Of course, appropriate regulations can make it illegal to do all of these things, and the system would do its best to filter out obviously bogus data. But the example above reveals a thorny

72. *See id.* at 225.

73. *See id.* This solution probably outlaws open-source file sharing programs (since the numbers they report could be modified by a user) and all file sharing systems that do not use a central server. For example, on the Gnutella network, there exists no single point through which all search requests go and to which all downloads are reported. Mandating network architecture in this way seems likely to stifle innovation.

74. *See id.* at 226-28. Fisher makes a convincing argument that people might be willing to have their consumption watched as long as their privacy was protected. But among some of the segments of the population that currently make the most use of P2P networks, a significant percentage of the downloaded files consist of pornography. Presumably, these particular P2P consumers would be less willing to have their consumption monitored.

75. Eugene Volokh has noted that special interest groups like the NRA might use similar, more distributed methods to "game" alternative compensation systems in order to express audience preferences having nothing to do with music. *See* Eugene Volokh, *Download Tax*, *at* http://volokh.com/2003_09_07_volokh_archive.html#106314198323180349 (last visited October 18, 2004).

contradiction. The most accurate and efficient ways to measure the popularity of digital content violate two of the values that have led to the wide adoption, success, and stability of the Internet. The easiest, most accurate way to measure downloads and streams is to monitor all bits on a segment of the network and record how often certain works are downloaded or streamed. However, this violates the "end-to-end principle," or "e2e." The end-to-end principle holds that the Internet should be as simple as possible, functioning simply to route data between points on the network. The network works best if it does not inspect data or provide any functionality itself, but simply moves packets around.[76] Computer science specialists have made convincing arguments that placing high-level functions in the network decreases utility and increases the cost of the network.[77] Including measurement infrastructure *in the network*, rather than at the ends, could have severe consequences for innovation.

However, putting the measurement structure in the ends of the network has its own problems. If the measurement infrastructure is placed in the ends, then users must trust the ends to return authentic usage data, as Fisher assumes we do.[78] Fisher proposes collecting sampling data from trusted playback and download devices.[79] Although it is easiest to get good data from tamper-proof devices, it is difficult to make tamper-proof devices that are also open-source.[80] Open source tools have been the foundation of the Internet, and outlawing their use to play back and download digital music files would seriously stifle innovation by limiting users to proprietary solutions.

As shown *infra* in section III-A-4, measurement of P2P usage of files need not violate e2e and can be implemented in open source software.

76. For a simple and well-written introduction to the end-to-end argument, see Doc Searls and David Weinberger, *World of Ends*, *at* http://www.worldofends.com/ (Last modified April 28, 2003).

77. *See*, *e.g.*, J.H. Saltzer, D.P. Reed, and D.D. Clark, *in End-to-End Arguments in System Design*, 2:4 ACM TRANSACTIONS IN COMPUTER SYSTEMS 277 (1984).

78. FISHER, *supra* note 43, at 226-28.

79. *See id.*

80. Because the user can modify the program, the user can make the program return arbitrary data to the measurement authority.

d. Distribution

Fisher proposes that funds be distributed by the Copyright Office in proportion to the number of times the works were consumed with three caveats. First, longer recordings would yield larger payments for creators.[81] Fisher defends this choice by noting that longer musical works and movies tend to cost more to make, and that limited consumer attention spans will counteract any incentive to pad the length of artistic works.[82] Second, payments for derivative works would be assessed based on the creator's rough estimation to the Copyright Office concerning how much material is original or from preexisting works, and compensation would then be distributed proportionally to respective holders of the copyright in the derivative and original.[83] This would allow the creators of the preexisting works used in samples, expurgated films, and mash-ups to be appropriately compensated.[84]

2. Netanel's Proposal

Netanel's proposal for peer-to-peer file sharing is substantially similar to Fisher's but contains slight variations.[85] For example, rather than allowing both commercial and noncommercial use under compulsory license, Netanel allows only noncommercial use.[86] Also, whereas Fisher's proposal encompasses only music and movies, Netanel's encompasses all copyrighted content other than computer software and unpublished works.[87] Finally, Netanel proposes licensing the preparation of noncommercial derivative works that would retain the original's identifying information and would compensate only the original creator.[88]

3. Litman's Proposal

In her article *Sharing and Stealing*, Professor Jessica

81. *See* FISHER, *supra* note 43, at 230.

82. *See id.*

83. *See id.* at 235-6.

84. *Id.*

85. Though the proposals are similar, Netanel's richly-documented paper provides a more thorough analysis of numerous issues that Fisher is unable to cover in a single chapter in his book.

86. *See* Netanel, *supra* note 42, at 42.

87. *See id.* at 41.

88. *See id.* at 38-39. *But see* FISHER, *supra* note 43, at 234-6 (describing how authors of material underlying multilayered derivative works would be compensated under his scheme).

Litman proposes a partially voluntary blanket licensing system.[89] In Litman's system, all existing music would be included in a levy, measurement, and compensation system like those proposed by Netanel and Fisher, however Litman's system, would allow authors to opt out and would deliver revenue to creators, not copyright holders.[90]

a. Opt-out

Litman's proposal allows copyright holders to opt out of the blanket license scheme by fulfilling two requirements. First, they must publish their works *only* in a yet-to-be-specified format that includes copyright management information.[91] Any music released only in a new "*.drm format"[92] may not be reproduced without the copyright holder's consent, but copyright holders who opt out are ineligible to share in the compensation pool.[93] A copyright holder's remedies against a user who shares the *.drm file without permission would be the same as those that exist now.[94] Litman argues that because so much music would be freely downloadable, consumers would respect a copyright holder's decision to opt out of the free distribution system.[95] Because of this increased respect for proprietary rights, enforcement against infringers of *.drm files would be easier and more politically palatable than enforcement against infringers is now.[96] Under Litman's scheme it would be difficult for works distributed publicly in a non-*.drm format, which includes all works published before the system is put into place, to be withdrawn from availability to the public.[97]

89. *See* Litman, *supra* note 44.

90. *See id*. at 39-47.

91. *Id*. at 48. Litman uses the definition of "copyright management information" in 17 U.S.C. § 1202, which includes title, author, copyright owner, etc. The big problem with this aspect of the proposal is technical, not legal. People own lots of devices, like CD players, that they want to keep using. Any format would have to be backward-compatible with the CD, and no backward-compatible system of encoding copyright management information exists.

92. This is Litman's proposed name for a new file format or set of file formats incorporating digital rights management ("DRM") technology. *See* Litman, *supra* note 44, at 48.

93. *See* Litman, *supra* note 44, at 43-45.

94. *See id*. at 46.

95. *See id*.

96. *See id*. at 47.

97. *See id*. at 46.

This opt-out provision functions as a penalty default rule. A penalty default exists when the law sets a default rule that neither party will want, forcing the two parties to reveal information to each other and to decide on bargained terms.[98] Since 1976, authors have been allowed to divide their various exclusive rights among a number of transferees.[99] So, for instance, the right to publicly perform a musical work might be owned by a different party than the right to reproduce that work. Litman intends the opt-out provision to eliminate some of the tangle of rights that has arisen since the elimination of the indivisibility rule.[100] Because the work will be subject to the compulsory license scheme if it is released to the public in any form other than *.drm, the owners of the various exclusive rights will be forced to bargain with each other to reach licensing terms for the distribution of the work.[101] Each owner of an exclusive right has an equal bargaining position, since each has the power to push the entire tangle of rights into the compulsory licensing scheme. Thus, Litman gives each holder of an exclusive right a "poison pill." Copyright holders are unlikely to divide up their rights because bargaining among parties who all hold poison pills is extremely costly. Parties who have sold off pieces of the pie are likely to buy them back, so that they are certain that no transferee will take the "poison pill." Litman's proposal reintroduces a *de facto* indivisibility rule through the introduction of a penalty default rule.

Thus, placing copyright holders between two socially beneficial outcomes has a number of advantages. It lessens some of the loss in economic autonomy that comes with compulsory license schemes, since it gives copyright holders at least some choice. It guarantees a socially useful outcome (leaving a prospective licensee with either a compulsory license or a single party with whom to bargain). Finally, by requiring parties who opt out to register with the Copyright Office, the ownership of the copyright is known publicly so that prospective licensees know whom to approach.[102]

98. *See* Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87, 91 (1989) (introducing the concept of the penalty default).

99. *See* Litman, *supra* note 44, at 17-18.

100. *Id.* at 44.

101. *See id.* at 47.

102. This registration requirement raises some treaty concerns, since registration is a formality banned by the Berne Convention. *See* Berne Convention for the Protection of Literary and Artistic Works, July 14, 1967,

b. Bypassing Copyright Holders

The second difference between Litman's proposal and Fisher's and Netanel's is her method of distributing the funds collected in the compulsory license scheme. Litman proposes paying monies directly to creators, regardless of who owns the copyright.[103] Because the urge to establish a system of compensation for P2P file sharing arises because "our sense of fairness impels us to compensate creators because they deserve to be paid," Litman argues that we should simply compensate the creators.[104] In defending this proposal, Litman asserts that it improves on the present allocation of authority to collect royalties, which "has systematically disadvantaged stakeholders who are small, independent or poorly organized."[105]

The legislative decision to give this windfall to the creators rather than any subsequent owners of copyrights is analogous, under this reasoning, to that made when Congress extended the duration of copyright in 1998 and in 1976. Congress decided that the benefit of the added duration should be given to creators, not to transferees. Accordingly, the copyright term extensions included provisions for the termination of transfers. With appropriate notice, at the end of the original, pre-extension copyright term, artists could take back their rights.[106] The practical effect of this provision is that the owner of the copyright at the expiration of the original copyright term ends up paying the artist some large portion of the value of the additional years of copyright protection.[107] This is fair because

art. 5 § 2, 828 U.N.T.S. 223 [hereinafter Berne Convention] ("The enjoyment and the exercise of these rights shall not be subject to any formality…."). *See* Christopher Sprigman, *Reform(aliz)ing Copyright*, 57 STAN. L. REV. (forthcoming 2004) (discussing the Berne Convention's ban on formalities).

103. *See* Litman, *supra* note 44, at 41-42.

104. *Id.* Litman makes the right alienable, but separate from ownership of the copyrights themselves (which are, in most cases, already owned by the record company and music publisher). A new agreement, separate from any assignment of copyright, would be needed to designate the record company and music publisher as intermediary for P2P royalties. While this is a better solution than making the royalty rights entirely inalienable, it still radically changes the landscape under which the recording contract was negotiated, potentially going against the intent of the parties.

105. *Id.* at 41.

106. *See* 17 U.S.C. § 304(c) (2000) (termination provision of the 1998 Copyright Term Extension Act); 17 U.S.C. § 203 (2000) (termination provision of the 1976 Copyright Act).

107. In few cases are the artists themselves in a position to adequately exploit the work commercially. The assignment of rights to the artist *ex ante*

at the time the artist sold his rights, the price reflected the expectation of a certain copyright term; the expiration date of the copyright was known to both parties, and they bargained based on that information. Because the artist didn't own those extra twenty years when he sold the copyright, he couldn't sell them. If the transferee wants them, he should have to buy them.

However, the two situations are not analogous. Basic to the regulatory calculus of Fisher's and Netanel's proposals is the goal of replacing revenue displaced by peer-to-peer file sharing.[108] Free P2P downloads are substitute goods for purchased CDs – not perfect substitutes, as the RIAA seems to claim,[109] but substitutes nonetheless. While recording contracts did not contemplate revenues from a system of compulsory licensing of P2P downloads, they did contemplate revenues from CD sales. The Fisher and Netanel proposals are designed to replace lost CD revenues, not to give record companies a windfall. There is no economic or legal justification for a bare wealth transfer from the record companies to the artists.

There is, however, *some* justification. Litman feels that artists have been given a raw deal. Her "proposal is motivated in part by [her] conviction that composers and musicians have been ill-served by the current system."[110] The record companies unfairly exploited the economically weak musicians, strong-arming them into signing contracts they didn't understand and paying them a pittance for songs that made the record companies millions.[111] Musicians "[complain] so

simply gives her bargaining power in negotiations and forces the parties to reach an agreement. *See* Walgreen Co. v. Sara Creek Prop. Co., 966 F.2d 273, 275-76 (7th Cir. 1992) (Posner, J.) (arguing that the assignment of rights by an outside authority allows an efficient price to be set by the parties without further intervention). Because neither the artists nor other third parties are likely to be the highest users of the copyright due to sunk costs on the part of the transferee, this provision is likely to result in a more favorable royalty arrangement for the artist.

108. *See* FISHER, *supra* note 43, at 242 ("the proposed regime would help [copyright holders] by replacing the revenues they lose to Internet activities with money transmitted through the Copyright Office."); Netanel, *supra* note 42, at 46 (stating that his proposal seeks to "replace that fraction of copyright industry revenues supplanted by NUL-privileged file sharing").

109. The RIAA claims that the industry loses $4.2 billion per year. Recording Industry Association of America (last visited October 17, 2004), *at* http://www.riaa.com/issues/piracy/default.asp.

110. Litman, *supra* note 44, at 43.

111. *See* Future of Music Coalition, *Major Label Contract Clause Critique*,

bitterly of their treatment at the hands of the record companies," but put out records nonetheless; we should give them a slice of the pie.[112]

Litman, then, wants to rewrite recording contracts *ex post* because she does not think they were fair. Her proposal would operate as a particularly broad unconscionability statute, partially vitiating all extant transfers of copyright. Like all wealth transfers, it is not really efficient or inefficient; rather, it is morally defensible or indefensible. In this case, it is not defensible. While many musicians have been given a raw deal, taking away their freedom of contract is not the answer.

In some instances, this would clearly work injustice. Assume, counterfactually, that I am a talented, hip indie rocker. I write and record a song and sell the rights to a small independent label run out of a friend's basement apartment. The indie label sells CDs and sends me some of the proceeds, spending significant amounts to promote me in all sorts of perfectly laudable, non-payola ways – sending review copies of my CD to music writers, printing up posters, having suitably ironic post-glamorous photos of me taken. Then, Litman's compulsory license system is implemented. Sales of my CD plummet as fans download the music on P2P networks, with the absolute certainty that what they are doing is both legal and just. I get a bunch of money I would not otherwise have received; my friend's label goes under because CD sales slump. I record my next CD and release it on P2P networks. But nobody downloads it, because nobody knows it's there. Music writers do not review it. I scramble to put promotional infrastructure in place myself, but I fail. I just write the music; it is the label's job to promote it. My work fails in the marketplace for lack of promotion. Now, though I received a windfall from the sharing of my first album, the infrastructure through which my work is promoted and edited has been

(Oct. 3, 2001) (analyzing common clauses in major label recording contracts and their inequitable effects on musicians), *at* http://www.futureofmusic.org/contractcrit.cfm. *See also* Tim Quirk, *Welcome to the Wall of Shame* (June 6, 2001) (describing mistreatment at the hands of a major label), *at* http://www.futureofmusic.org/articles/shameintro.cfm (last visited October 17, 2004).

112. *See* Litman, *supra* note 44, at 29 n.115 ("Whether musicians will make music if the copyright regime is altered is an empirical question, but the fact that so many musicians have complained so bitterly at their treatment at the hands of record companies without withholding their music suggests that musicians' motivations are more complex than the simple copyright-incentive model captures.").

destroyed. My friend and I are both out of a job, and we cannot even go back to our old jobs as record store clerks.

While it may not end up being as dire as all that, there is no good reason to hand a pile of money to artists and force them to take responsibility for their own careers. It may not be what they want. If they want to promote themselves, they may; all they have to do is hold on to their copyrights. We should allow musicians to make that choice.

III. AN ALTERNATIVE COMPENSATION PROPOSAL

A. MECHANICS OF THE PROPOSAL

1. Goals

The compensation schemes proposed by Fisher and Netanel focus on compensating copyright holders for lost revenues due to CD sales. The systems are designed to simulate a world without P2P copying. But we no longer live in a world without widespread P2P copying, and it is simply not possible to put that particular cat back in that particular bag. If we are to give copyright holders the choice to opt out, they do not opt out into a world of perfect control over their copyrighted works. They opt out instead into a world in which uncompensated copying is socially accepted and routine in all segments of society, in which lawsuits against hundreds of consumers have failed to make an appreciable dent in file sharing activity, and in which Digital Rights Management technologies are cracked routinely. Our system does not need to make the record companies whole; all it must do is provide an environment more attractive than the one that exists today. Given the dire straits in which the record industry has lately found itself, this should not be too difficult. There is room for a scheme that improves on the *status quo* without reaching the *status quo ante bellum*.

2. Scope

The compulsory license will be limited to musical works. Only noncommercial use will be privileged; however, the commercial distribution of copies for noncommercial use will be allowed. The services of these "download service providers" will be heavily levied, and profits will be small because such services will have to compete with legal downloads from peers; the presence of a free alternative will tend to depress prices

and provide incentives for value-added services, like organization of music, information about artists, community features, and other popular services.[113] This will also allow artists, record companies, and their affiliates to distribute the music they produce directly to consumers, though, as described below, only peer-to-peer shares will be measured for purposes of compensation.

Noncommercial derivative works will be allowed. To the extent that they are substantially similar to the original, they will have the same or a similar audio fingerprint as the original, and will be counted in the popularity of the original.[114] To the extent that it is not substantially similar, the use of the original will not be counted for purposes of compensation.[115] If a musician wishes to create a derivative for commercial use, she will have to negotiate with the copyright holders, as she would now. Commercial derivatives would be counted just like originals, and private contracts between the creator of the derivative and the copyright holder in the original would govern what portion of the derivative author's revenues from the levy system would be passed on to the copyright holder in the original.

3. Participation

As in Litman's proposal, copyright holders may opt out of the system. If they do, they will have the same rights they do

113. This means that services like iTunes Music Store and Rhapsody will likely survive the transition to compulsory licensing. Both their costs and their revenues are likely to decrease, however. They'll no longer need to pay the record companies and music publishers, but they will no longer be the only legal way to download music.

114. An audio fingerprint is a unique identifier of the audio content of a song. It does not change when the audio is converted from one file format to another. Since the audio fingerprint is shorter than the audio file itself, there necessarily exists more than one audio file that generates a given audio fingerprint. However, the chances of such a collision are so small that it is unlikely that one will occur in many hundreds of years. Rob Kaye, founder of MusicBrainz, a community-based music metadata project that relies on audio fingerprinting technology, has pointed out that the present state of audio fingerprinting technology is unlikely to provide the reliability needed for the proposed system. While this is true now, the political obstacles preventing the implementation of an alternative compensation system seem likely to allow time for technology to catch up.

115. This is more for the sake of simplicity than anything else. Fisher's proposal that the creator of a derivative work guess at the percentage of the work made up of other preexisting works is unsatisfying; absent any empirical way to measure such derivatives, limiting the scope to noncommercial use and compensating only substantially similar derivatives seems the best choice.

today.[116] If copyright holders choose to opt in, they must register and deposit a copy of the work with the Copyright Office.[117] This registration will be separate from all subsisting copyrights, and the registration will not be valid until it is approved by all owners of copyright in the underlying works, such as musical works, scripts, and sampled works. All underlying copyrights must be registered and deposited before the compulsory license scheme registration will issue.[118] Like Litman's penalty default rule, this requirement forces the owners of the underlying copyrights to bargain, because no compulsory license revenue accrues until a valid registration issues.[119] To encourage copyright holders to opt in instead of expending resources on Digital Rights Management technology, section 1201 of the Digital Millennium Copyright Act will be modified to minimally comply with the terms of Article 11 of the 1996 World Intellectual Property Organization Copyright Treaty.[120]

116. Alternately, we could say that copyright holders who opt out have some lower level of copyright protection, still within treaty obligations, assuming the arguable proposition that such a level of protection exists.

117. The "work" here means the sound recording or audiovisual work that is the final product of the production process.

118. This has the added side benefit of creating a record of the ownership of all underlying copyrights and causing copies to be deposited with the Library of Congress, so that the public will know when the works fall into the public domain, and will be able to access a copy of the works when they do. For a discussion of the importance of such formalities to an efficient copyright system, *see generally* Sprigman, *supra* note 102.

119. Unlike Litman's penalty default rule, this solution does not violate any treaty obligations and does not require the creation of a backward-compatible, watermarked audio format that all parties must use.

120. *See* 17 U.S.C. § 1201(a) (2000) ("No person shall circumvent a technological measure that effectively controls access to a work protected under this title."). Article 11 of the 1996 WIPO Copyright Treaty requires signatories to prohibit circumvention of technological measures "that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law." WIPO Copyright Treaty, Dec. 20, 1996, 36 I.L.M. 65 (1997), *available at* http://www.wipo.org/eng/diplconf/distrib/94dc.htm (last visited October 17, 2004). Section 1201 will be modified to allow the production, distribution, and traffic in circumvention devices, and it will allow circumvention for any purpose not currently prohibited by the Copyright Act, including fair use, reproduction of public domain works, reverse engineering, and so on. Because traffic in circumvention devices will be legal, digital rights management schemes would not work very well and would be abandoned in favor of registration for compulsory license royalties. Courts have begun to read the current language of Section 1201 in this way, focusing on the limitations the Copyright Act places on exclusive rights. *See, e.g.*, Chamberlain Group, Inc. v. Skylink Technologies, Inc., 381 F.3d 1178 (Fed. Cir. 2004); Lexmark Int'l, Inc.

At first, this does not seem like much of a penalty default rule. After all, if the parties refuse to bargain and/or fail to register, they all retain exclusive, proprietary rights enforceable against the world. But how enforceable are those rights, really, against noncommercial home use? Home use is difficult to detect and deter. Once a compulsory license scheme is in place, P2P networks will become legitimate avenues for the distribution of all sorts of content. No longer will copyright holders be able to argue that the majority of content swapped on P2P networks is infringing. There will be at least a "substantial noninfringing use" for any software or device used to store, copy, share, or play back audio or video.[121] Lawsuits against operators of second-generation P2P networks have failed so far, and they are likely to continue to fail.[122] By shifting the context in which P2P networks operate from one of presumptive infringement to presumptive noninfringement, we make it much more difficult for copyright holders to stop unauthorized sharing. While copyright holders are nominally offered a choice, the most profitable option should be participation in the compulsory licensing regime.

So why not just *say* what we are doing? Why not throw open the gates and refuse to allow copyright holders to opt out? First, allowing this nominal choice keeps us from violating treaty obligations. Second, the appearance of a choice will make the implementation of compulsory licensing more politically feasible. Finally, this system allows the owners of underlying copyrights in the work the opportunity to privately bargain and agree on how to split up the money they receive. This system of private ordering will set prices more accurately than a government-mandated system of splitting up proceeds among copyright owners.

4. Collection

A levy will be placed on products used to consume digital

v. Static Control Components, Inc., 387 F.3d 522 (6th Cir. 2004).

121. *See* Sony Corp v. Universal City Studios, Inc., 464 U.S. 417 (1984) (establishing that devices "suitable for substantial noninfringing use" do not give rise to contributory copyright infringement liability).

122. *See* Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd., 380 F.3d 1154 (9th Cir. 2004), (holding that vendors of P2P software are not contributorily or vicariously liable for users' acts of copyright infringement). *But cf.* In Re Aimster Copyright Litigation, 334 F.3d 643 (7th Cir. 2003) (Posner, J.) (upholding grant of preliminary injunction to plaintiff copyright holders against continued distribution of Aimster, a P2P application).

media.[123] Fisher and Netanel have performed good analyses of the types of goods that should be levied and what levy amounts would produce the necessary revenues.

5. Measurement

The sole measure of the popularity of a work will be the number of peers making it available for download. This has a number of advantages. First, it fairly accurately reflects whether the user listens to the song or watches the movie; disk space being scarce, unwanted media are likely to be deleted. Because users will have no incentive to disable the sharing function of their P2P software once file swapping is legal, the musical tastes of the vast majority of P2P users will be reflected. By refusing to share, all they accomplish is denying compensation to their favorite musical artists; they do not pay any less, but they lose the power to control where part of their money goes. Second, it is by its nature public and verifiable. P2P networks function by accurately returning a list of the hosts on which a particular file can be found; this method exploits that feature.[124] In fact, a version of this popularity measurement method is already being used by a private company to generate data on the popularity of MP3 files on behalf of major record companies.[125] Third, it is easy to implement in existing systems, since all P2P networks natively include the required functionality.

Finally, it can be implemented while allowing the use of

123. Optionally, consumers and businesses could be able to receive a refund of the levy amount from the manufacturer by submitting a form including proof of purchase and a statement, under penalty of perjury, that the products will not be used to consume digital media covered by the compulsory license scheme. The problem with this is that everyone is likely to always claim that their products will not be used to consume digital media, since it's effectively impossible to check.

124. In the face of recent RIAA lawsuits, some P2P software packages have begun to allow users to keep the lists of files shared private, responding only to requests for specific files and not to requests for lists of entire collections. This would not prove a problem for two reasons. First, the incentive for such behavior would go away once the regime was implemented, since the RIAA lawsuits would end. Second, the absence of these users from the sample will not affect its accuracy significantly. If sharers choose to hide their lists, they just lose their opportunity to make sure their favorite artists are appropriately compensated.

125. *See* Jeff Howe, *BigChampagne Is Watching You*, WIRED 11:10, *available at* http://www.wired.com/wired/archive/11.10/fileshare.html (October 2003) (last visited October 17, 2004) (describing P2P metrics company BigChampagne and its relationship with major record labels).

open-source software and without violating e2e. When the copyright holder registers the work, she includes a deposit copy of the work in digital form. The copyright office, using a publicly-available, royalty-free audio fingerprinting algorithm,[126] generates and posts the audio fingerprint of the song.[127] The measurement authority runs a number of computers that crawl P2P networks, querying randomly-selected hosts for a list of the audio fingerprints of the files they're sharing. The hosts cannot send audio fingerprints of files they are not in fact sharing, since the measurement servers periodically download randomly-selected files as a spot-check mechanism, and it is impossible to derive a corresponding audio file from an audio fingerprint. There will be criminal penalties for causing a host to falsify its reports; violators will be caught through these spot-checks.

If the audio fingerprint of a downloadable file matches that one file with the copyright office, the work will be credited with one "availability." If it does not match, no credit will be given.[128] This will encourage copyright holders to make 'official' versions of their works widely available on P2P networks, to make it even more likely that each host sharing the file results in an "availability." P2P servers run by copyright holders or their affiliates will be required to identify themselves to the measurement crawler; failure to do so will result in stiff penalties, including contributory and vicarious liability.[129]

This way, the measurement authority receives an accurate picture of the popularity of each file without placing measurement in the network itself, without trusting each individual host to report information that is not immediately verifiable, and without supplanting existing P2P protocols.

6. Distribution

The market has already decided the relative value of works by their popularity. The regulatory system should not alter

126. Obviously, no such publicly-available, royalty-free audio fingerprinting algorithm has yet been released, but one could be developed or licensed during the implementation of the system.

127. *See supra* note 114.

128. There will be a temptation to use data about files that do not correspond to registered works as fodder for infringement investigations.

129. The only other way to game the system would be to write a virus or worm that caused infected machines to share the file in question. If done with knowledge of the registrant, the registrant would be vicariously liable.

these results. However, if registrants were simply paid a set amount per availability, people with large music collections would have more influence on the distribution of funds than people with small music collections. Because there are only so many hours in a day, we can assume that a person with a small music collection listens to each song more often than a person with a large music collection.[130] For this reason, the ability of each host to influence the distribution of the pool should be the same regardless of the number of files it makes available.[131] Stated differently, each host gets the same number of "votes," and those votes are divided up equally among all works in that host's collection.[132]

For work x, the overall share of the pool (S_x) is:

$$S_x = \frac{\frac{A_x}{F_x}}{\frac{A_{1\ldots n}}{F_{1\ldots n}}}$$

where n is the total number of works in the sample, A measures the number of hosts on which the work is available, F measures the total number of works shared by the hosts sharing the work, and S is the percentage of the total pool to be distributed to the registrant of x. To determine the amount paid to each registrant, we simply multiply by the total pool of money to be distributed, so

130. This assumption is not perfect; music fans with large collections seem likely to spend more hours per day listening to music than people for whom the lower relative importance of music is reflected by their small music collections.

131. This makes the system slightly easier to game, since it rewards a cheater who sets up a farm of hosts which each share only one song. However, a registrant who did so would be criminally liable.

132. This is, in some ways, a modification of the "voting" system proposed in the Blur/Banff Proposal. *See* Jamie Love, *Artists Want to be Paid: The Blur/Banff Proposal*, *at* http://www.nsu.newschool.edu/blur/blur02/user_love.html (Mar. 25, 2003) (last visited October 17, 2004). However, my proposal does not require any action on the part of the user and does not allow the expression of extra-artistic preferences.

$$P_x = T \times \frac{\frac{A_x}{F_x}}{\frac{A_{1\ldots n}}{F_{1\ldots n}}}$$

where T is the total pool of money to be distributed and P is the payment to the registrant of x.

So, for example, imagine three users, Arthur, Boris, and Carrie. A has 3 songs in his collection. B has 2 songs in his collection. C has 5 songs in her collection. A and C are both sharing "Baby One More Time." B is sharing "Saint Simon" by The Shins. A, B, and C are all sharing "Say Yes" by Elliott Smith. A is sharing "Come Home, Baby Julie" by The American Analog Set. C is sharing "The District Sleeps Tonight" by The Postal Service, "Fox in the Snow" by Belle and Sebastian, and "Allison" by Elvis Costello. Thus, Britney receives 12.8% of the pool, The Shins receive 25.6%, Elliott Smith receives 15.4%, The American Analog Set receives 15.4%, and The Postal Service, Belle and Sebastian, and Elvis Costello each receive 10.3%.[133]

Thus, this method of measurement does not allow any one user or class of users to have a disproportionate effect on the distribution of funds, can be calculated using publicly available data, and distributes funds based entirely on the popularity of the work.

B. OBJECTIONS TO THIS SYSTEM

1. Why just music?

My proposal assumes that only musical works and sound recordings will be included in the compulsory licensing scheme. This choice is necessary for both technological and political reasons. First, "audio fingerprinting" technology is not yet practical for video files. Second, the pricing structure of music uniquely lends itself to compulsory licensing. Third, a compulsory license scheme for music can be implemented without modifying international treaties to which the United

133. A_x/F_x for each of the works is 0.25, 0.5, 0.3, 0.3, 0.2, 0.2, and 0.2, respectively. The sum of $A_{1\ldots n}/F_{1\ldots n}$, then, is 1.95. The percentage of the pool for each work is found by dividing its A_x/F_x value by 1.95.

States is a party; this is not true for other types of works. Finally, for political reasons, the amount of money paid to pornographers should be minimized; excluding video files fulfills this goal almost completely.

First, audio fingerprinting does not work on video files, making measurement difficult. Audio fingerprinting is a computationally intensive process. It works by breaking down the audio stream into a number of elements (such as harmonic structure, tone, and so on), and then creating a signature that uniquely represents those elements. It is likely that an analogous technology for video files could be developed, but it would likely be too computationally intensive for home computers to perform within an acceptable time frame. As home computers become more powerful, this problem is likely to go away.

Distribution of funds collected for the noncommercial use of video files would be more difficult than distribution of funds collected for use of audio files because of differences in the structure of the music and movie industries. Nearly all audio consumed by the public is available on CDs. While there is some variation among genres, most CDs cost between ten and twenty dollars and contain between ten and twenty tracks. For this reason, it is fair to implement a compensation scheme that is uniform across musical works and genres. Video presents more problems. There is a big difference both in the cost of producing and the cost of purchasing, say, a funny sixty-second animated short and a full-length action movie. While we could, as Fisher suggests, simply pay different rates based on the length and genre of the work, this adds a significant amount of political complexity to an already politically complex system.

Third, a compulsory license scheme for music can be implemented without modifying international treaties to which the United States is a party; this is not true for other types of works. The Berne Convention allows for the compulsory licensing of musical works, and does not require protection for sound recordings.[134] Cinematographic works are protected, and are subject to no such exception.[135]

Finally, we come to the problem of pornography. Simply put, any legislative proposal that leads the U.S. Government to issue large checks to pornographers is doomed. A considerable

134. *See* Berne Convention, *supra* note 102, at art. 13 § 1 and 11*bis* (allowing compulsory license schemes for musical works).

135. *See id*. at art. 14*bis* (granting protection to cinematographic works).

amount of the video files currently shared on P2P networks contain pornography.[136] That means that, under any popularity-based system of measurement and distribution, makers of pornographic videos would receive large sums, since pornography is popular. Given the anti-pornography stance of many powerful politicians, major political hurdles exist. One can only imagine the indignation some would show at the prospect of their money going, even indirectly, to fund pornography. There is no reason to believe that the incidence of pornography among P2P-traded video files will go down dramatically in the future.

Why can't we simply exclude pornography? It would be easy enough to make it a requirement of registration that the work is "not pornographic in nature." However, problems remain. First, determining what constitutes "pornography" is a difficult task, and the margin for error is small. We could use a "harmful to minors" standard, but that would eliminate many R-rated movies. We could use an "obscenity" standard, but that would allow all mainstream pornography to be compensated. I suspect that there exists a non-empty set of video content that Senator Orrin Hatch would define as "pornographic" and the average consumer would define as "non-pornographic," so the political problem seems intractable.

2. Let the Music Industry Do the Distribution

The music industry has long-established methods for distributing large pools of revenue fairly among creators and copyright holders. There is no reason that a private authority or set of authorities could not administer portions of this regime. ASCAP, BMI, and SoundExchange may, among them, be able to better distribute revenues to copyright holders than the Copyright Office. A company like BigChampagne may be better equipped to measure the popularity of files on P2P networks than a government agency, and more prepared to keep up with changes in file sharing software. This article proposes only methods measurement and distribution; it matters little who does the actual measuring and distributing.

136. *See generally* U.S. House of Representatives Special Investigations Division, *Children's Access to Pornography Through Internet File-Sharing Programs*, *at* http://www.democrats.reform.house.gov/Documents/20040817153928-98690.pdf (July 27, 2001) (last visited October 17, 2004) (discussing the availability of pornography to children over the Internet).

The only part that the government really must do, for obvious reasons, is the taxation.

CONCLUSION

An alternative compensation system based on taxation and compulsory licensing will retain the efficiencies of a market while eliminating the negative effect of property rights on semiotic democracy. Further, implementing such a system will compensate copyright holders who currently receive no remuneration for noncommercial P2P sharing of their works. No alternative compensation system will mollify all stakeholders, but by making policy choices that are technologically feasible, economically sound, and in accordance with international treaties, such a system will improve consumers' access to culture and creators' incentives to create.