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Lesson Spurned? Reactions of Online Music Pirates to Legal Prosecutions by the RIAA

Michael Bachmann¹

Texas Christian University, USA

Abstract

In 2003, the Recording Industry Association of America (RIAA) initiated a surge of lawsuits against peer-to-peer (P2P) network users to stop them from illegally sharing music files. The main goal of this new strategy was not to dissuade individual persons from violating copyright laws, but to educate the general public about the illegality of this behavior and to deter the mass of Internet users from using the ever-emerging P2P networks to share music files (RIAA, 2003). Despite these legal efforts, the few studies conducted on online music file sharing suggest that the majority of music downloaders show little awareness of wrongdoing and that a large gap exists between the self-perception of P2P users and the deviant label assigned to them by the recording industry. This study uses recent data from the PEW Internet and American Life Project to analyze the latest shifts in the population of P2P users. Results show that the popularity of P2P networks has been steadily increasing since the sharp decline in 2003 and that the sociodemographics of file-sharing communities are changing. P2P users appear to be largely unimpressed by the legal prosecutions. Implications for the music and video industry as well as future research are discussed.

Keywords: Music Piracy; RIAA; P2p; Legal Prosecutions; Napster.

Introduction

For the established music recording and distribution industry, the appearance of Napster, the first P2P network software, was a disruptive event of unprecedented dimensions. Napster was created in September 1999 by then 18 year old Shawn Fanning as a software application aimed at simplifying the process of finding and sharing music files online. Napster's groundbreaking new technology allowed its participants to circulate and replicate highly compressed MP3 music files at close to zero marginal costs (Mitten, 2002). File exchanges within the Napster network were limited to MP3 files because this format effectively reduces file sizes while maintaining most of the original sound quality, thereby making songs and albums easily tradable even with slower Internet connections. Due to its strong representation in the media and its user-friendly mode of operation, the system gained enormous popularity and generated a huge selection of downloadable music. Millions of clients used the network to share and swap copyright-protected music without explicit permission (Horrigan & Schement, 2002). Napster's unparalleled facilitation of

¹ Assistant Professor, Department of Sociology, Criminal Justice, and Anthropology, Texas Christian University (TCU) Fort Worth, TX, United States of America. Email: m.bachmann@tcu.edu

copyright infringements shocked the recording industry, who took action by filing a lawsuit against the popular service (Robinson & Halle, 2002).

The accusations against Napster, Inc. in this first P2P-network lawsuit were based on the particular architecture of the system. Napster, a so-called first-generation P2P network, used central, company-owned servers to generate and maintain lists of connected users and the music files they provided. While the actual file transactions were conducted directly between the users, these central servers also facilitated the connections between users and initiated the music file downloads. Because of the centralized architecture, plaintiffs defined Napster as a “listing service” that offered a search engine, a directory, an index, and links, and was thus seen as being ultimately responsible for the music file transactions and the copyright violations they caused (*A&M Records, Inc. v. Napster, Inc.*, 2000). In this line of argumentation, individual network users were factored out as not being an integral part of the system and not responsible for the copyright violations. The recording industry feared that the generalized criminalization of music consumers would cause massive public relations problems and refrained from prosecuting Napster users. Instead, they argued that the individual music consumers were being victimized by the new technology (Spitz & Hunter, 2005). As a result of this lawsuit, an injunction issued in March 2001 ordered Napster to prevent the trading of copyright-protected music on its network. In July of the same year, Napster had to shut down its entire network in order to comply with the injunction.

The RIAA, the trade group representing the world’s major record labels, had won the battle against Napster, but it turned out to be a Pyrrhic victory. By the time Napster was shut down, the concept of P2P networks, partly due to the many media reports covering the lawsuit, had gained vast popularity. Several new P2P networks had been created, some of which were based on highly efficient and completely decentralized architectures. These networks were no longer restricted to music files, but allowed the sharing of all different kinds of media formats. This second generation of P2P networks had learned from Napster’s fatal misfortune. The applications operated on various underlying data-transmission protocols, were no longer dependent on central servers, or encrypted the shared data. Some were even sold to obscure offshore companies (Matthew & Kirkhope, 2004; Merriden, 2001). All these measures made it increasingly harder for the recording industry to shut down the networks through legal actions.

Facing this new generation of P2P networks, the recording industry decided to revise its strategy. Instead of merely continuing the unpromising battle against the hydraulic P2P network applications, the new tactic extended the target to individuals who swap copyright-protected songs or movies through the networks (RIAA, 2003). The strategy was two-pronged: Drastic penalties against “major offenders” (Weiss, Lamy, & Collins, 2003) were combined with renewed efforts to educate the public and the P2P community about the illegality and severity of copyright-infringements through file sharing. The RIAA wanted file sharers to know and understand that their behavior is far from being just a peccadillo, but rather the online equivalent of shoplifting (Denegri-Knott & Taylor, 2005), a contemptuous criminal behavior.

In 2003, a few weeks after U.S. appeals court rulings mandated that Internet Service Providers turn over the names of subscribers believed to be sharing music and movies illegally, the RIAA sent out the first wave of subpoenas to 1,600 users and filed lawsuits against 261 individual file sharers (Legon, 2004). The lawsuits were based on allegations of violations against U.S. Copyright Law, particularly against two amendments,

the Digital Millennium Copyright Act (1998), and the No Electronic Theft Law (1998). These acts prohibited the circumvention of original copyright protections and allowed the criminal prosecution of sound recording copyright infringements (including by digital means), even where no monetary profit or commercial gain is derived from the infringing activity.

Parallel to the lawsuits, the RIAA announced the Clean Slate Program that granted “amnesty” to users who voluntarily identified themselves, erased downloaded music files, and promised not to share music over the Internet. The program gave P2P network users the chance to avoid prosecution by signing a notarized Clean Slate affidavit. What Cary Sherman, the president of the RIAA at the time, called their “version of an olive branch” (Legon, 2004) was a program designed to complement the legal efforts in an attempt to “reach out” to the mass of P2P network users, to avoid the impression of strict confrontation with music consumers, and to justify the RIAA’s legal enforcement of their interests.

The main purpose of both parts of this combined strategy — the prosecutions and the simultaneous granting of “amnesty” — was not to penalize individual users for sharing files or even to compensate record labels for their loss through P2P networks. The legal campaign was initiated mainly to generate headlines, to draw public attention to the issues of copyright violations and their enforcement, and to ultimately deter the mass of Internet users from signing up to P2P networks. As the counterpart of the legal actions, the Clean Slate Program had a similar purpose. It was designed to further increase public awareness about the illegality of unauthorized uploading and downloading on P2P networks. The new strategy turned out to be so successful that the RIAA soon came to the conclusion that the goal of educating the public was sufficiently reached and decided to discontinue the campaigns (RIAA, 2003).

Indeed, a nationwide phone survey from November 2003 by the Pew Internet & American Life Project indicates that the lawsuits against online music file sharers “had a devastating impact on the number of those engaging in Internet peer-to-peer music sharing” (Rainie & Madden, 2004:1). According to the study, the percentage of Internet users downloading music files on the Internet dropped by half — from 29% (about 35 million users) to 14% (about 18 million) — and the numbers of active downloaders on any given day plunged (from 4% to 1%). Moreover, a fifth of those who continued to share files online said they are doing so less often because of the lawsuits.

These numbers suggest that the new campaign was in fact a considerable success. Four years down the road, however, the question has to be asked if its impact on P2P communities has sustained. How has the popularity of P2P networks developed since the lawsuits against users were filed? What do the most recent data on file sharing communities reveal about the current composition of their population? Finally, what exactly are the reasons why today’s users discontinue using P2P networks and which technical alternatives for obtaining music files are taking their place?

None of the above questions has so far been raised in the scientific literature. In part because file sharing communities are based on relatively new technical innovations, sociological articles analyzing their developments are scarce. Moreover, most studies on P2P networks are of limited relevance for the above questions because their concern is to frame the rise and fall of the Napster phenomenon, the best-known P2P network, in a particular theoretical context (Horrigan & Schement, 2002; Matthew & Kirkhope, 2004; Robinson & Halle, 2002; Wayne, 2004). The range of perspectives on Napster in these

articles is broad: Social constructionists see Napster as an example of how a new technology sparks a fierce battle between interest groups over the construction of a definition for the new invention (Spitz & Hunter, 2005). Researchers concerned with the concept of deviance use Napster to illustrate the difficulties the concept faces when applied in the context of the Internet as a “yet-to-be-normalized environment” (Denegri-Knott & Taylor, 2005:93). Other, more economically-oriented studies analyze Napster as a prototypical example for the challenges Internet innovations pose to well-established industries (Leyshon, Webb, French, Thrift, & Crewe, 2005; Marshall, 2004), or even as evidence for the intensification of the contradictions of fixed capital as predicted by Marx (Wayne, 2004).

The most recent study on illegal file sharing was conducted by Sameer Hinduja in 2005. Hinduja (2005) administered a survey asking about engagement in copyright infringements over P2P networks to undergraduate students at a Midwest university. The study was designed to examine the applicability of three main criminological theories, but did not analyze the general population of file sharing networks. One sociological study (Jones & Lenhart, 2004) exists that focuses on the empirical examination of Internet music file sharing communities and their populations. Like the other studies about Napster, it analyzes P2P communities during the time of Napster’s zenith. Jones and Lenhart use data from April 2000 to February 2001 to “depict the audience of music downloaders during Napster’s heyday” (2004). To this point, no sociological study has examined P2P communities since the shutdown of Napster and the slump of 2003. The present study aims to close this gap in the literature. It provides empirical answers to the aforementioned questions by analyzing the most recent data on file sharing. It further seeks to examine the appropriateness of the common equation of music downloading and file sharing. Music downloading and file sharing are two separate activities intersecting only when music files are shared. Oftentimes, file sharing networks are used to obtain files other than music, and music is downloaded through channels different from P2P networks. The two activities are usually treated synonymously in the extant literature, most likely due to the predominance of music files in the early file sharing networks. Given the absence of prior empirical research on the topic of the present study, its hypotheses cannot be formulated a priori but have to be derived from the results of the exploratory analysis.

Data

The study analyzes three different datasets from the Pew Internet & American Life tracking survey, which examines the Internet’s role in everyday life in the U.S., particularly the under-examined details of Internet usage and its social impact. All three datasets were collected through telephone interviews conducted by Princeton Survey Research Associates between March 2003 and January 2005. The data collection was based on a random-digit sample frame of telephone numbers selected from telephone exchanges in the continental United States.

To compensate for the known biases in telephone interviews, the sample data are weighted in the analysis. The demographic weighting parameters for each dataset are derived from a special analysis of the most recently available Annual Social and Economic Supplement of the U.S. Census. Using an iterative technique that simultaneously balances the distribution of all weighting parameters, these parameters are compared with the sample characteristics to construct representative sample weights.

The study analyzes data from three waves of the tracking survey. The first wave was conducted from March 12 to 19 and from April 29 to May 20, 2003, before the RIAA started to take legal action against P2P users. It contains 2,515 respondents and has a marginal sampling error of $\pm 3\%$. The subset of Internet users ($n = 1,555$) has approximately the same sampling error margin. The second tracking survey was fielded between November 19 and December 14, 2003, shortly after the first lawsuits against P2P network users were filed. During that time 2,013 adults in the U.S. were surveyed, 1,358 of which were Internet users. The third survey is the latest tracking survey relevant to file sharers that the Pew Internet & American Life Project has released. It was conducted between January 13 and February 9, 2005 with 2,201 adults, 1,421 of which were Internet users. The error margins of the two latter surveys were calculated to be the same as in the spring 2003 survey.

Measures

Independent variables

For the analysis of the sociodemographic characteristics of persons who share files online and download music files, the variables gender, race, age, income, educational attainment, student status, Internet experience, and Internet connection speed are examined. Student status is selected based on literature suggesting that file sharing is particularly prevalent among college student populations (Hinduja, 2005). The last two variables, Internet experience and Internet connection speed are included as proxy variables measuring accessibility to P2P networks on both an experience/knowledge and a technical dimension. The variables age, income, educational attainment, and years of Internet experience are all recoded into grouped categories. Age is divided into three cohorts: young adults (18-29 years), middle-aged adults (30-49 years), and adults 50 years and older. Annual income is grouped into four categories: under \$30,000, \$30,000-\$50,000, \$50,000-\$75,000, and \$75,000 and more. The variable educational attainment is recoded into four types: less than high school, high school graduate, some college, and college degree or more. The same coding procedure is applied to information on years of Internet experience. Depending upon their years of experience, Internet users are grouped into three categories: 3 years or less, 4 to 6 years, and 7 or more years. A series of dummy variables are created for additional sociodemographic characteristics including student status (1 = full or part time students), gender (1 = males), Internet connection speed (1 = broadband connection) and race. Race is measured with three indicator variables White, Black, and Hispanic, with White as the reference category. Except for the income variable, all other variables contain only small amounts of randomly missing data that are excluded from the analysis. For the income variable, missing values are replaced via linear interpolation to preserve sample size while avoiding the even higher reduction of variance that is caused by mean substitution. The last valid value of the case before the missing value and the first valid value of the case after the missing value are used to interpolate the missing value (Little, 1988; Schafer, 1997).

Dependent variables

In the extant literature, it is common practice to equate the sharing of files with the downloading of music. Equating these two activities is problematic because it overlooks that file sharing is not restricted to music files. Many P2P network users share video, application, document, CD-image, picture or archive files, but refrain from

swapping music to avoid prosecution. Also, many Internet users who download music do so from a variety of sources. Aside from obtaining the files through P2P networks, they also download music files from legal online music services such as iTunes or buymusic.com, from their friends' portable MP3 players, from music-related websites, or even through email. For this reason, the present analysis examines file sharing and music downloading as two separate activities. The separate analysis also has the advantage of allowing a much more detailed examination of the impact the RIAA's legal campaign has had on online file sharing and music downloading.

The item measuring file sharing activity asked respondents if they "share files from their own computer, such as music, video or picture files, or computer games with others online." File sharing activity was recorded in the categories "yes, I have done this yesterday," "yes, I have ever done this but not yesterday," and "no, I have never done this." For the analysis, the first two categories were collapsed into one category containing all persons who are sharing files online (file sharing = 1). The question for music downloading asked respondents if they "download music files onto their computer so they can play them at any time they want." Again, the answer categories distinguished between having done this yesterday, ever, or never, and were recoded into having downloaded music (= 1) or not (= 0). Both items were asked in a series of questions about mostly legal online activities in order to reduce social desirability bias.

Regarding the impact of the RIAA's lawsuits, two additional aspects are considered. First, the reasons Internet users give for discontinuing downloading music are analyzed. This procedure reveals the relative importance the fear of being charged with copyright infringements has for the subjective decision to stop downloading. Second, the importance of technical alternatives for the obtainment of music files is evaluated. The technical alternatives that have emerged or gained popularity since 2003 have to be considered because the RIAA's campaign was directed only against P2P network sharing but has no impact on, for example, the swapping of music files through MP3 players.

The item measuring the subjective reasons for discontinuing downloading music asked respondents to indicate their main reason for no longer downloading. The answer options were: "I was afraid to get in trouble / I heard about the RIAA lawsuits," "I decided that it was wrong," "I was getting more viruses, pop-up ads or having other computer problems," "I couldn't find the quality or type of files that I wanted," "I found other ways to get the music or movies I wanted," and "my Internet service provider, school, or workplace warned me." Additionally, respondents were given the option to specify their personal reasons in an open-ended response category. The two most common other reasons were that it is "too time consuming / too slow" and the respondent had just "lost interest." The item contained only 142 observations, had very few observations for any single reason, and contained vast amounts of missing data. The limitations posed by this circumstance for the interpretation of the results are considered in the analysis.

A series of separate questions asked respondents for the technical alternatives they use to obtain files. Participants were asked if they had ever downloaded music from any of the following sources: "A peer-to-peer network like KaZaA or Morpheus," "An online music service such as iTunes or buymusic.com," "someone's iPod or other MP3 player," "other music-related websites, such as online music magazines or musicians' homepages," or "Email or instant messages you receive." For each of the sources a dummy variable was created (1 = respondent had ever downloaded from this source).

Methods

The analysis conducted in this study assesses all of the questions raised in the introduction of this paper. Aside from examining how the popularity of file sharing and music downloading developed since spring 2003, it also measures the shifts that occurred in the sociodemographic composition of the file sharing population. Furthermore, it investigates the reasons provided for no longer downloading music and the technical alternatives used as substitutes for P2P networks. For the analysis, all three datasets are limited to only Internet users and merged into one dataset. The exclusion of respondents who do not use the Internet reduces the sample sizes by approximately one third. Nevertheless, all datasets still contain over 1,300 observations. Also, all recoded sociodemographic subgroups remain considerably larger than 30 respondents, a circumstance that allows generalizations to the population with only small error margins. Unfortunately, one important limitation does exist in the present datasets and must be noted. When measuring file sharing activity, the surveys do not distinguish between legal and illegal files. This distinction, however, is important because the RIAA lawsuit campaigns only target the downloading of illegally-distributed, copyright-protected audio files.

Results

Trends in demographic characteristics of P2P community members

Table 1 presents the results for the analysis of changes in P2P communities between the three surveys. The findings reveal that the RIAA campaign had almost no significant impact on engagement in file sharing activities. The only significant decrease during 2003 was found among less experienced user groups. Respondents with less than 6 years of Internet experience did refrain significantly more from sharing their files online ($p < .05$). Conversely, experienced users who had been online for 7 or more years showed highly significant increases in the percentage of file sharers ($p < .001$) between the March 2003 and the November 2003 surveys. The data suggests that not only did the legal campaign have almost no significant effect in reducing file sharing activities (over 20% of all Internet users were still sharing files), but the overall percentage of Internet users who share their files online has been increasing significantly since the end of 2003 ($p < .05$). Today, even more users (24%) engage in file sharing than before the campaign was launched (21%). This finding, however, might be at least partially attributable to the increasing usage of P2P networks for the circulation of legal files, an influence that cannot be controlled for in the present study.

The results for the trends in music downloading display a completely different pattern. Here, the legal efforts undertaken by the RIAA had a vast impact. The overall percentage of respondents who download music files plunged (it was halved to 14.5%) across all user groups after the campaign was launched ($p < .001$). Nevertheless, the data for music downloading shows that this trend is reversing, too. Since the end of 2003, the overall popularity of music file downloading has picked up again ($p < .001$), even though it is still considerably less than before the lawsuits (22% compared to 29% before the RIAA campaign).

Table 1. Weighted sociodemographic characteristics of P2P community members

	Internet users who share files			% Change		Internet users who download music			%Change	
	Mar. 2003 % (N)	Nov. 2003 % (N)	Jan. 2005 % (N)	Nov. 03- Mar. 03	Jan. 05- Nov. 03	Mar. 2003 % (N)	Nov. 2003 % (N)	Jan. 2005 % (N)	Nov. 03- Mar. 03	Jan. 05- Nov. 03
All adults	20.7 (645)	20.3 (452)	24.5 (632)	-0.4	4.2***	29.0 (906)	14.5 (322)	21.6 (559)	-14.5***	7.1***
Men	20.9 (326)	21.0 (231)	22.5 (280)	0.1	1.5	32.5 (506)	18.3 (201)	24.9 (311)	-14.2***	6.6**
Women	20.4 (319)	19.7 (221)	26.4 (352)	-0.7	6.7***	25.6 (400)	10.8 (121)	18.6 (248)	-14.8***	7.8***
Whites	19.9 (456)	19.5 (330)	24.3 (463)	-0.4	4.8**	27.6 (643)	13.2 (219)	19.4 (372)	-14.4***	6.2***
Blacks	22.4 (60)	25.8 (54)	27.7 (60)	3.6	1.9	36.7 (98)	25.2 (52)	24.8 (54)	-11.5**	-0.4
Hispanics	26.3 (78)	22.1 (42)	23.1 (60)	-4.2	1.0	35.3 (105)	19.8 (37)	26.7 (70)	-15.5***	6.9
Age cohorts										
18-29	31.2 (250)	27.1 (145)	30.0 (192)	-4.1	2.9	52.4 (420)	27.8 (149)	40.2 (257)	-24.6***	12.9***
30-49	18.4 (262)	18.6 (192)	24.4 (283)	0.2	5.8***	26.6 (379)	13.1 (135)	18.5 (215)	-13.5***	5.4***
50+	15.3 (127)	18.1 (111)	20.7 (153)	2.8	2.6	11.8 (98)	6.0 (37)	11.0 (82)	-5.8***	5.0***
Household income										
Under \$30,000	21.5 (149)	19.5 (87)	20.9 (123)	-2.0	1.4	37.5 (261)	20.8 (93)	26.1 (153)	-16.7***	5.3*
\$30,000-\$50,000	22.6 (196)	19.0 (115)	23.3 (160)	-3.6	4.3	28.0 (243)	13.7 (83)	19.2 (132)	-14.3***	5.5**
\$50,000-\$75,000	18.3 (117)	19.4 (94)	26.9 (132)	1.1	7.5**	26.7 (170)	9.9 (48)	16.2 (79)	-16.8***	6.3**
\$75,000+	19.9 (182)	22.6 (156)	26.6 (218)	2.7	4.0	25.3 (232)	14.3 (99)	23.7 (194)	-11.0***	9.4***
Education										
Less than high school	25.2 (51)	33.1 (44)	19.8 (35)	7.9	-13.3**	39.0 (79)	23.5 (31)	31.1 (55)	-15.5**	7.6*
High school graduate	22.0 (202)	19.2 (126)	27.2 (211)	-2.8	8.0***	30.8 (283)	18.2 (119)	22.3 (172)	-12.6***	4.1*
Some college	23.6 (204)	20.7 (132)	22.1 (159)	-2.9	1.4	32.8 (283)	13.0 (83)	21.6 (155)	-19.8***	8.6***
College degree/more	16.7 (187)	18.6 (148)	24.9 (226)	1.9	6.3**	23.0 (258)	11.1 (88)	9.3 (175)	-11.9***	8.2***
Student										
Full or part time	31.6 (195)	31.5 (121)	28.7 (139)	-0.1	-2.8	48.5 (299)	21.1 (81)	37.3 (181)	-27.4***	16.2***
No student	17.8 (440)	18.0 (329)	23.6 (493)	0.2	5.6***	24.0 (593)	13.2 (240)	18.1 (378)	-10.8***	4.9***
Internet experience										
3 years or less	17.0 (130)	12.2 (58)	18.0 (36)	-4.8*	5.8*	28.0 (214)	12.9 (62)	17.9 (36)	-15.1***	5.0
4 to 6 years	23.5 (296)	18.4 (158)	20.1 (85)	-5.1*	1.7	29.8 (376)	13.6 (117)	19.0 (81)	-16.2***	5.4*
7 or more years	20.0 (219)	26.5 (236)	32.7 (189)	6.5***	6.2**	28.8 (316)	16.2 (144)	23.0 (133)	-12.6***	6.8***

*p<.05.

**p<.01.

***p<.001.

The two activities show very different patterns over the course of the three surveys. In contrast to the sharing of files, the trend curve in music downloading displays a very consistent pattern. After the legal prosecution of individual users had begun, music downloading plummeted across all sociodemographic groups. The unanimous decrease of music downloading indicates that, at least initially, the RIAA’s campaign was indeed successful. Except for Black respondents, however, the percentages of music downloaders went back up in all sociodemographic groups by 2005.

This upward trend suggests that the initial effectiveness of the campaign is wearing off. The fear of being indicted for copyright violations was less present in 2005 than it was at the end of 2003. Despite occasionally renewed media coverage of new lawsuits, the legal campaign has clearly lost some of its deterrence effect. This pattern also suggests that the legal campaign was, at first, very successful in raising awareness for the illegality of music downloading without the permission of the copyright holder, but that this initial awareness has decreased significantly in subsequent years.

When contrasting the distinct trends in music downloading, the developments in file sharing show a very inconsistent pattern. Here, the lawsuits did not have the same deterrence effect. Even though file sharing became slightly less popular overall between March and November 2003 (it decreased only insignificantly by 0.4%), this development varied considerably across sociodemographic groups. In the time since 2003, file sharing became even more popular than it was before the RIAA’s campaign. While approximately one-fifth of all Internet users had been using file sharing applications in March 2003, this fraction increased to one-fourth in January 2005. Comparing the two activities in the March 2003 survey, one can see that 29% of respondents who use the Internet had downloaded music and 21% had been sharing files. The surprising finding is that a larger

fraction of Internet users indicated having downloaded music than sharing their files online, probably due to the fact that at the time many file sharing programs did not require their users to share their files in order to be able to download and many users already employed other sources than P2P networks to obtain their music files.

The comparison of developments in specific sociodemographic groups reveals further interesting details. It shows that the common belief that downloaders are disproportionately male (Jones & Lenhart, 2004) has to be relativized when file sharing and music downloading are analyzed separately. Indeed, a larger fraction of males are downloading music files (25% of males compared to 19% of females). In contrast to this finding, the popularity of file sharing shows a reversed relation across genders. In 2005, female Internet users had a higher percentage of file sharers among them than did males. Between 2003 and 2005, the percentage of females that participated in file sharing communities has significantly risen from 20% to 26%. During the same time period, the fraction of males remained relatively constant (21% to 23%).

The racial composition of file sharing community members and music downloaders has developed differently, too. While in March 2003, Hispanics had the largest fraction of file sharers (26% of all Hispanic Internet users were sharing files compared to 20% of Whites and 22% of Blacks), they became the group with the smallest percentage of file sharers in 2005. In 2005, Black persons were most likely to be using the Internet to share files (28% compared to 24% Whites and only 23% Hispanics). Black persons are also the group that was least affected in their music downloading by the RIAA's campaign. Though the fraction of Black music downloaders dropped from 37% before the lawsuits to 25% in November 2003, the decrease was even sharper and of higher significance for Whites (from 28% to 13%) and Hispanics (from 35% to 20%). A peculiar finding is that during 2003 and 2005, the percentage of Black persons who download music had largely remained unchanged (it even decreased by 0.4%). In the same time period, the two other racial groups showed an increase in the percentage of music downloaders (a significant 6.2% for Whites and an almost-significant 6.9% for Hispanics), so that in 2005, Hispanics were the group with the largest fraction of music downloaders among them.

Among all sociodemographic variables in the analysis, age is the factor with the largest differences between the single groups. The youngest group has by far the highest fractions of file sharers and music downloaders. In 2005, 30% of the Internet users between 18 and 29 years had been sharing their files online and over 40% had been downloading music. The percentage of file sharers in this age group has remained relatively stable over the course of the three surveys. At the same time, the portion of file sharers among older people has steadily increased (a significant 6% for persons between 30 and 49 years and 5% for persons 50 years or older). The increase of file sharers in the older cohorts can be partly attributed to maturation. File sharing communities came into existence around seven years ago and many of the young people who shared their files early on are now in the group of persons over thirty.

The differences between the age groups are even more dramatic for music downloading than they are for file sharing. Before the lawsuits, more than half of the youngest group of Internet users was downloading music (52%). In contrast, only one-fourth of the cohort between 30 and 49 years (27%) and approximately one-eighth of the people 50 years or older (12%) used their Internet access to download music files. The lawsuits halved the fractions of music downloaders in all three age groups in the

November 2003 survey ($p < .001$). Since the sharp drop at the end of 2003, however, the percentages of music downloaders have significantly turned upward again for all age groups ($p < .001$). In 2005, 40% of the younger, 19% of the middle-aged, and 11% of the older Internet users were again downloading music. The large difference between younger and older Internet users in their music file downloading activity is not surprising, but simply mirrors the generally higher interest younger people have in the consumption of music.

A counterintuitive pattern emerges when looking at the distributions of file sharers and music downloaders in the various income groups. In spring 2003, the two lower income segments had the highest percentage of file sharers among them. In 2005, the correlation between income and file sharing reversed. The lower income segments now had the smallest fraction of file sharers, and the two higher income groups were the ones with the highest percentage of file sharers among them (27%). Nevertheless, the lowest income group still had the largest fraction of music downloaders. A possible explanation for this finding is that higher income groups are more likely to have a fast broadband connection, which allows them to share larger video, CD (DVD) image, or application files in P2P networks. In January 2005, 61% of households with an annual income over \$75,000 had a broadband Internet connection at home, compared to only 33% of households with an annual income less than \$30,000. The slower modem connection in many lower-income households limits the file sizes that can be downloaded in a reasonable time to smaller files such as music, text, or picture files.

The distributions of file sharers and music downloaders among persons with different educational attainments show a pattern similar to the income groups. In March 2003, the group with less than a high school education had the highest fractions of file sharers (25%) and music downloaders (39%). In 2005, this group still had the highest percentage of music file downloaders (31%). The relation between educational attainment and file sharing, however, had reversed, too. The lowest education group was the only group in which the percentage of file sharers decreased significantly ($p < .01$) between November 2003 and 2005 and became the one with the smallest percentage of file sharers among them. A possible reason for the reversed relation between education and file sharing might be that the later generations of file sharing programs require more expertise to be operated successfully, while many other sources for music downloading remain easily accessible. Technical difficulties might be a possible reason for the differences in file sharing and music downloading between the higher- and lower-educated groups. This reason, however, is mere speculation and requires further investigation with different data.

The trend curves of the two activities also show large differences between students and persons who are not in college. In spring 2003, almost one-third of all full- and part-time students were sharing files online and almost half of them were downloading music. Both fractions were approximately twice as high as they were for persons who are not in college. After a sharp and highly significant decline in November 2003, the fraction of students who are downloading music went back up significantly and is now close to the high level before the lawsuits (37% in January 2005). The percentage of students who were using their Internet access to share files, instead, was not affected by the RIAA's campaign. In November 2003, 31% of students with access to the Internet were still sharing their files. Surprisingly, this fraction dropped slightly between 2003 and 2005 (to 29%). A possible explanation for this slight decline is that many students use Internet

connections provided by their colleges to access the Internet, and many schools started monitoring and blocking file sharing ports in recent years.

The last sociodemographic characteristic included in the analysis is the years of Internet experience. Here, little differences appear between the groups. In 2005, the users with the most experience were also the ones with the highest percentage of file sharers (33%) and music downloaders (23%) among them. While the fraction of experienced Internet users sharing files increased significantly between March and November 2003 (from 20% to 27%), it sharply decreased among the least experienced users (from 17% to 12%). The least experienced group of Internet users was the one most affected by the RIAA's campaign. In this group, the percentage of music downloaders dropped from 28% to 13% after the lawsuits and increased by only 5% until January 2005. Obviously, the campaign had the highest impact on persons who were less familiar with the technical details of file sharing networks.

Reasons for no longer sharing files and technical alternatives to P2P networks

Aside from sociodemographic developments within online file sharing communities and the population of music downloaders, the analysis examines reasons Internet users provide for discontinuing downloading music files through P2P networks and technical alternatives used to obtain music files. Unfortunately, these items were not included in the 2003 surveys and, thus, cannot be analyzed over time. Still, the distributions in the January 2005 survey hold valuable information about the motives of Internet users.

Surprisingly, only one-fourth (26%) of all persons who reported to have discontinued downloading music through P2P networks did so because they were afraid of getting into trouble by being sued for copyright violations and only 10% reported that they stopped because they decided that it was morally wrong. In contrast, a total of 40% stopped because of very practical reasons; 15% reported to have quit because the participation in P2P networks caused them to get more viruses, pop-up ads, or other PC problems, 4% were unsatisfied with the quality of the files they downloaded through the P2P networks, and 7% just switched to other technical alternatives. Thirteen percent decided that downloading through P2P networks is too slow for them, and 6% just lost interest in downloading music. These results show that the RIAA's campaign accounts for only a small fraction of the variability in illegal music downloading through P2P networks and that the lawsuits against users are not the main reason why they discontinue downloading music. They also show that only 10% of former P2P users stopped downloading music because they decided that it was wrong to do so. The main reasons for Internet users to stop downloading through P2P networks are of practical nature. These results, however, must be interpreted with caution because this variable has large amounts of missing data and each response category has very few observations. Therefore, the outcomes cannot be generalized accurately to the larger population.

The lower part of Table 2 lists all different sources Internet users access to download their music files. The table shows that only 12% of all Internet users obtained their files through P2P networks. Almost as many (10%) downloaded their music from legal online music services and half as many (6%) downloaded their music from MP3 players. Nine percent downloaded their music from websites or blogs, and another 9% received their music files through emails or instant messages from their friends. This statistic clearly shows that the RIAA's legal campaign had targeted only a fraction of all

illegal music file downloads. It had no influence on the illegal downloading through MP3 players, emails, or instant messages, three sources that, when combined, are employed by a larger percentage of Internet users than are P2P networks.

Table 2. Reasons for no longer downloading and technical alternatives to P2P networks¹

January 2005 ²	Percent	(N)
Reasons for no longer downloading ³		
Afraid to get in trouble / heard about the RIAA lawsuits	26.1	(37)
I decided it was wrong	10.6	(15)
I was getting more viruses, pop-up ads, other PC problems	15.5	(22)
I couldn't find the quality or types of files I wanted	4.2	(6)
I found other ways to get the music I wanted	7.0	(10)
My ISP, school, or workplace warned me	0.7	(1)
Too time consuming	7.4	(10)
I lost interest	5.6	(8)
Other	23.2	(33)
Sources for downloading music files ⁴		
A peer-to-peer network like KaZaA or Morpheus	12.3	(175)
An online music service like iTunes or buymusic.com	10.3	(147)
Someone's iPod or other MP3 player	5.6	(80)
Other music related websites	7.0	(100)
Music or movie blogs	2.1	(30)
Received email or instant messages	8.5	(121)

¹ Unweighted percentages and total number of observations (in parenthesis) are reported. Percentages may not add up to 100 due to rounding. ² Unfortunately, these items were not asked in the 2003 surveys and cannot be compared over time. ³ Only 142 former music downloaders provided reasons for no longer downloading. Counting all Internet users, the variable has 1279 missing observations that were not imputed. ⁴ The percentage of all Internet users using the source to download music files is reported.

Discussion and Conclusion

Summarizing the findings of this study, it can be concluded that in order to adequately address the impact of the enforcement of copyright laws on file sharing communities and the popularity of music downloading, file sharing and music downloading have to be analyzed separately. Equating the two activities conceals important differences and does not allow valid conclusions about either. This important circumstance has so far been overlooked in the sociological literature on file sharing communities. The separate analysis of the two activities allows a much more detailed examination of the effect legal prosecution of music copyright violations has had on file sharing networks.

The results show that Internet users are well aware of the circumstance that legal prosecution is only targeting the sharing of music files. Accordingly, the RIAA's campaign had an impact only on the downloading of music, but left the participation in file sharing networks almost unaffected. P2P network sharing was even more popular in 2005 than it was before the lawsuits against music downloaders were filed. This indicates that Internet users continue to swap video, application, and other copyright-protected files. Furthermore, the analysis revealed that the effect of the legal prosecution of music downloaders was not long-standing, but has been slowly wearing off since the campaign was started in 2003. Additionally, the reasons Internet users provided for no longer downloading music suggest that the RIAA's legal actions only account for parts of the still lower percentage of music downloaders among Internet users. Practical reasons to stop are equally important, if not more important, for the decision to no longer download music than is the fear of being sued. The RIAA's message that the downloading of music is

morally wrong and harms the rights of the copyright owners has been heeded by only a very small fraction of Internet users. It caused significantly fewer users to stop downloading than did the fear of being indicted for copyright violations.

Technical alternatives to P2P networks also play an important part in the downloading of music files. The increasing popularity of broadband connections, MP3 players, and instant messaging applications plays a more and more important role for the illegal downloading of music files. All these sources have not been targeted by the RIAA's campaign and cannot be targeted with the same measures. This development will pose considerable difficulties for the RIAA's future battle against copyright violations.

Even though it produced valuable insights into the reactions of Internet users to the RIAA's lawsuits, the present study is limited in certain ways. Of particular conceptual relevance is the circumstance that the three PEW datasets analyzed in this study did not distinguish between legal and illegal file exchanges. This distinction, however, would have been important for the present study because the renewed popularity of P2P networks might be at least partially attributable to more legal files being shared in modern P2P networks. Other datasets need to be analyzed in order to isolate the change attributable to the availability of legal downloads and the impact legal online sources have on music downloading in P2P networks. The January 2005 survey contained only a very limited number of items that allow assessing the attitudes and opinions of Internet users towards the legal prosecution of online copyright violations. A detailed investigation of the opinions and beliefs of Internet users requires that additional items be asked. Future surveys need to include more detailed questions to enable researchers to examine to what degree Internet users share the RIAA's belief that the violations of copyrights through illegal music downloading is a deviant and condemnable act and to what extent they support the RIAA's actions. For example, it could be asked how familiar Internet users are with the current copyright laws and regulations, whether they think that these laws do a good job in protecting the rights of artists, or if they see these laws as mainly protecting the rights of those who sell art instead of the artists themselves. Other important aspects that would further specify the opinions of Internet users about legal matters are the degree to which Internet users believe that copying or sharing of any type of electronic files for non-commercial purposes should be legal, if they pay for the music they download, and to which extent and in which ways they support the artists whose music they are downloading.

Today, the RIAA is no longer the only industry organization targeting illegal downloading. As more and more movies have become distributed in P2P networks, the Motion Picture Association of America (MPAA) has joined the RIAA in its battle. Future studies should examine the successfulness the efforts employed by the MPAA and the role that increasingly popular legal download alternatives have for the pirating of copyright-protected material.

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