

# Is It Theft or Sampling? Student Attitudes on the Copying of Commercial Software and Music

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## Abstract

Both software and music piracy are generally considered to be widespread problems for the software and recording industries respectively, potentially costing both industries billions of dollars in potential sales. The authors surveyed 190 college freshmen to find their attitudes toward the copying of commercial software and recorded music. Two interesting issues were identified. When the current study was compared to one done in 2000-2001, it was found that a greater percentage of students in the current study thought that most people, and especially students, copy commercial software instead of purchasing it. However, the survey results also demonstrated that a smaller percentage of student respondents in the current study (as compared to the percentages in the previous study) thought it was acceptable conduct to copy commercial software. Perhaps students are more aware of the ethical dilemma or of the impropriety of software piracy. Secondly, the results revealed that students frequently copy or download music recordings illegally. However, the results also offer some evidence that they may be sampling the recording to determine if it is worth purchasing.

Keywords: computer ethics, music piracy, digital piracy, intellectual property, student attitude

## 1. INTRODUCTION

American copyright law was first passed in 1793 and only provided protection to books, maps and charts. Over the years, it was extended to newer technologies including photographs, audio and motion picture recordings as these technologies were developed and popularized (National Research Council 2000). While software was once given away as a part of a mainframe computer system (Campbell-Kelly and Aspray 1996), it was eventually recognized as a valuable commodity in its own right. As a result, copyright protection was extended

to software in 1980 (Chiang and Assane 2002).

Although software piracy has been around since the advent of the microcomputer, the wholesale exchange of "bootleg" copies of Microsoft Basic led Bill Gates to write his angry "Open Letter to Hobbyists", in which he compared the practice of exchanging such copies to outright theft (Wallace and Erickson 1992). The Business Software Alliance claims that there is a software piracy rate of 21% United States, for an estimated loss of over \$6 billion. This is all the more remarkable because the United

States has the lowest estimated software piracy rate (BSA 2006).

Music piracy has also become a major concern. The Recording Industry Association of America (RIAA) estimates that the recording industry suffers a worldwide loss of \$4.2 billion each year due to piracy (RIAA 2006a). Using the Digital Millennium Copyright Act (1998), the RIAA took legal action against Napster, forcing the shutdown of its website and music sharing software. Before its shutdown in July 2001 and reorganization as a paid-subscription service, Napster had an estimated 10,000 user per second at peak times (Ciolli 2001). Additionally, the RIAA has taken action against both individuals (Liptak 2003) and Internet service providers such as Verizon (Grodzinsky and Tavani).

It should be noted that record sales declined in 2002 compared to the previous year, as well as in 2003 compared to 2002. While it was suggested that other file sharing services such as KaZaa were responsible for this decline, informal interviews that the first author conducted with undergraduates suggest that this was not the case. These students frequently used Napster as a way to sample music in which they were interested; in many cases, they would buy it if they liked what they heard. Without access to Napster, they were unable to listen to recordings at their leisure before buying them, and were unwilling to pay for a CD before they knew if they liked any of its contents.

This decline was somewhat temporary, with recording sales increasing again in 2004 (RIAA 2006b). One could argue that the rise in popularity of KaZaa and other means of sharing digital music files allowed students to find other ways to sample music before purchasing it.

Chiang and Assante (2002) list three factors that make college students more likely than the general population to commit software piracy: they are more likely to need ready access to the software in which they are interested, they do not have as much disposable income and they possess the necessary skills to access the desired software and to copy it once it is located. They also note that there are other factors that lower the probability of college students

illegally copying software: the availability of educational discounts on popular software such as Microsoft office and the availability of computers on campus that are equipped with the software that they need to do required work.

A similar list of factors causes college students to be more likely to illegally download and copy music than the general population. College students are more likely to be aware of the sites on the Internet from which pirated recordings are available for download and they have the necessary computer skills to use the software that converts audio CDs to MP3 format and, if they choose to do so, to copy them on CDs in either MP3 format, which can store 10 albums on a single CD (National Research Council 2000), or regular audio CD format. At the same time, universities have been under pressure by the RIAA to police their own networks. In response, many universities have blocked access to certain types of Internet traffic or to provide low-cost (or no-cost) access to legal Internet music providers such as Rhapsody.

The first author surveyed undergraduates in two colleges during the 2000-2001 academic year regarding their attitudes on software and music piracy as well as a range of other ethical issues arising from the use of computers (Siegfried 2004); much of this was a recreation of an earlier study by Cohen and Cornwell (1989a) that found that most students believed that it was acceptable conduct to copy commercial software. The result of the first author's 2000-2001 survey was consistent with Cohen and Cornwell's result. It appears that the factors that changed in the years between the Cohen and Cornwell survey (1989) and the first author's 2000-2001 survey (i.e., the rise of the Internet, a greater degree of computer literacy, etc.) did not significantly affect student attitudes.

The purpose of the current survey (2005) is to examine several issues: first, whether student attitudes regarding software as well as music piracy changed since the 2000-2001 survey, second, whether their ability and willingness to download music prevented them from buying legal copies of music recordings and finally whether they actually utilize illegal downloading to sample

music that they eventually purchased legally.

## 2. METHODOLOGY

The questionnaire was administered to thirteen sections of the University's Freshman Seminar, a course required of all incoming freshmen. The sections were chosen at random, and the student enrollment in these sections comprised 40% of the freshman class. The response rate was 79% of the enrollment in those sections that were surveyed and represented 32% of the freshman class as a whole. The questionnaires were numbered after collection to ensure auditability of the data while guaranteeing the privacy of the respondents. The answers were tabulated in a Microsoft Excel spreadsheet using a 1 to indicate "True" and a 0 to indicate "False." Questions left unanswered were left blank. A total of 190 questionnaires were used in the survey.

## 3. RESULTS

Several questions on the recent questionnaire appeared on the earlier study (2000-2001). Students in both studies were asked about their experience with computers. The data is presented in Table 1. While most students in the earlier study were familiar with computer use, the current study revealed that almost all of the respondents made heavier use of computers than their counterparts in the earlier study. Only six percent claimed to have limited experience with computers, and no respondents claimed a lack of prior experience. This differs from the earlier study where 21% claimed limited experience and 2% said that they had no prior experience. While almost half the respondents in both studies used computers on their jobs and almost all used them for their schoolwork, the percentage using them for recreation grew from 79% to 94%. This increase is likely to be reflected in an increase in the downloading of music.

In the previous study, the main focus had been on student attitudes toward the copying of commercial software; as a result, there were only two questions regarding the downloading of music.

These questions asked if the respondent thought that it was acceptable to download music, and if it was acceptable to do so with the artist's permission. The use of computers to play and acquire digital music was not as common then as it is now. In the current study, students were asked whether they used their computers to play music, to download music without purchasing it and to buy music. As noted in Table 2, most students play music on their computers, either recorded on audio CDs or in MP3 format. Similarly, most respondents downloaded music that they did not buy. However, the survey results highlighted in Table 2 indicated that a significant minority use their computers to buy music, presumably through one of several sites (e.g., iTunes.com, rhapsody.com or amazon.com).

Recently, digital music players have become almost ubiquitous among college students. The responses summarized in Table 3 clearly corroborate the fact that digital music players are extremely popular with students as a mechanism for playing their music. As noted, eighty-four percent of the respondents indicated that they play digital music on some form of device other than a computer. It is noteworthy that more than half the respondents use an iPod, Apple's digital music player, which plays both MP3 files as well as Apple's proprietary format.

Responses to questions pertaining to perceptions and attitudes that students have with regard to software piracy are summarized in Tables 4 and 5. For example, the results in Table 4 demonstrate that the majority of students believed that most people will copy commercial software rather than buy it. Furthermore, an even larger proportion of the respondents believed that most students will copy software instead of buying it. Also, a little more than half of the respondents admitted to copying commercial software. These results support the findings of earlier studies by Cohen and Cornwell (1989a), and by Schuster (1987), who found that most students thought that it was acceptable to copy commercial software. It is interesting to note that results of the 2005 study indicated that there has been an increase in the student perception that most students as

well as most people copy commercial software.

The responses concerning questions about student attitudes toward copying software are illustrated in Table 5. In both studies a majority of the respondents thought it was OK to copy software. In addition, a larger number of respondents thought it was OK if copying software was for educational purposes. Examination of Table 5 reveals that a smaller percentage of respondents in the current survey gave an affirmative response to these questions than the respondents in the 2000-2001 survey.

The responses in Table 6 deal with student attitudes concerning the legality of copying software. The 2005 survey results indicate that a smaller proportion of students think that it is legal to copy software compared to the proportion in the 2000-2001 survey.

The 2005 survey results also enable us to view students' perceptions relating to the downloading of music. The results in Table 7 indicated that virtually all students believed that most people (97%) and most students (99%) copy or download music. This represents a large increase over the results delineated in Table 4 that indicated the percentage of students who think most people and most students copy commercial software is 76% and 89% respectively.

The results in Table 7 also revealed that although virtually all students believed that most people and students download recorded music instead of buying it, a majority of the student respondents also believe that most people (and students) will buy some of the music that they copied or downloaded.

#### 4. CONCLUSIONS

Several patterns appeared upon examination of the data. Students who participated in the current survey (2005) were more computer literate than their counterparts in the earlier survey (2000-2001), and almost all had long-term and extensive experience with computers (Table 1). This result may help to explain the 2005 survey results in Table 4 that indicate that more students believe that most people (and students) are "bootlegging" software themselves. The higher rate of computer literacy is a likely contributor to these results.

Although there were minor changes in the proportion of students who use computer software for schoolwork or their jobs, there was a substantial increase in the proportion of students who utilized software for recreation (79% to 94%). This increase is likely due to the large percentage of students who use their computers to play music (84%) as well as the large percentage of students who play music on portable digital music players.

One of the more intriguing outcomes is derived from a comparison of Tables 4 and 5. Although there was a substantial increase in the percentage of students who believed most people and students were copying software, there was a slight decrease in the percentage of students in the current survey (as compared to the 2000-2001 survey) who thought it was appropriate behavior. It might be concluded from these results that while more students believe "bootlegging" software is a common practice, the current population of students may be slightly more aware of the impropriety of software piracy than students in the past. Perhaps some students are becoming more aware of the ethical issues of copying software.

It is also interesting to compare the previous conclusions with results from Table 6. The data in Table 6 indicate that there has been a fairly substantial change in current students' perceptions. A significantly smaller proportion of respondents in the current study thought that it was legal to copy commercial software instead of buying it, and a higher proportion thought it was never legal to do so.

In contrasting the results from Tables 5 and 6, it seems that there may be some slight improvement in student attitudes about the impropriety of software piracy. However, there is little doubt that there has been a major change in the students' perceptions regarding the legality of "bootlegging" commercial software. One possible explanation might be that the perceptions of the legality of "bootlegging" deal with a more tangible concept, i.e., the law, as opposed to the ethical concept of "bootlegging." It is plausible that an illegal act is easier for a student to recognize than an unethical act.

The survey results that relate to illegal downloading of music also generate several interesting conclusions. Virtually all the student respondents believe that most people and/or students copy or illegally download music (Table 7). This is consistent with the results of the 2000-2001 study which found that 74% of the respondents downloaded music without paying for it (Table 2). Perhaps the students' perception of "everyone's doing it" may have evolved, at least in part, from the fact that so many respondents have copied or downloaded bootleg copies of their own (Table 8). However, it is particularly noteworthy that many of the respondents (71%) actually bought the music recordings that they previously obtained from illegitimate sources. Furthermore, almost the same percentage of respondents (70%) indicates that they copy music in order to determine if they like it enough to buy it (Table 8). Examining these results leads to the conclusions that a significant proportion of the surveyed population has utilized the process of downloading music as a method of sampling music in order to determine whether or not to buy it.

It was suggested at the beginning of this paper that music piracy as well as software piracy are serious problems costing both industries billions of dollars. One interesting area for future research is the determination of the "true" cost of this problem. For example, some evidence suggests that downloading music does not necessarily reduce the sales of music recordings. [Sales figures from the RIAA's own data reveal that recorded music sales stagnated between 1994 and 1999 (RIAA 2004).] Furthermore, year-end sales statistics for 2005 indicate sales of over 1.3 billion units, which is a 35% increase over the previous year (RIAA 2006b). Much of this increase is due to digital sales, the bulk of which are downloaded singles, ring tones, and other recording for mobile devices.

Although it is difficult to specify how much of this was influenced by the ability to download free bootlegged copies of recordings, it is clear that there have been major changes in how most American purchase music. While CD sales continue to remain the most common way of purchasing music, digital downloading has grown

exponentially over the past few years, increasing from 0.2% of recording sales to 5.7% of recording sales in just 4 years. It is also significant that the Internet currently accounts for 8.2% of recording sales.

Oberholzer and Strumpf (2005) studied peer-to-peer file sharing and found that there was no significant effect on album sales. They pointed out that sales actually increased during 1999, 2000 and 2004 despite the availability of illegal file downloads and that while peer-to-peer downloads decreased over the summer, there was no significant change in album sales. They also pointed out that many listeners are only interested in the one or two songs per album that are played frequently on the radio. The individual preference for sales of singles would explain the popularity of sites such as iTunes.com over record store sales.

There may be additional explanations for the stagnation and occasional decline in music sales such as changes in market demographics. For example, the 10-14 year old age category, and the over 45 year old category have exhibited increase in music purchasers while other categories have experienced declines. A study of how the recording industry has adapted to these changes can shed some light on the impact that demographic shifts may have on recording sales.

Is there anything that college faculty can do to make students more aware of the ethical use of intellectual property? Cohen and Cornwell (1989b) suggested that integrating computer ethics topics into the computer science and information technology curricula is more effective in terms of making students aware of ethical concerns in computing. College faculty can provide a better example; Athey (1990) found that college professors are perceived as the main offenders where software piracy is concerned and fail to enforce campus policies on this issue. Lastly, educational discounts can remove a great deal of the incentive for illegal copying of software. The encouragement of sites such as Rhapsody and Napster, which provide subscriptions to inexpensive downloads, can encourage students to acquire their music legally. Both of these policies are followed at Adelphi University, where the authors both teach.

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**APPENDIX****TABLE 1**

Computer Experience and Usage of Respondents

	<u>2000-2001 Study</u>	<u>2005 Study</u>
My experience with computers includes...		
daily use over more than a year	78%	91%
limited exposure, but for more than a year	17%	2%
extensive exposure, but less than a year	1%	3%
only passing experiences	3%	1%
no prior experience	2%	0%
I use software...		
on my job	47%	44%
for classes I take	90%	96%
for recreation	79%	94%

**TABLE 2**

Use of Computers to Acquire and Play Music

	<u>2005 Study</u>
I use my computer:	
to play music CDs	84%
to play music MP3 files	82%
to download music file that I did not buy	74%
To buy music	38%

**TABLE 3**

Usage of Digital Music Players

I play music on...	
my iPod	57%
a different type of MP3 player	27%

**TABLE 4**

Student Perception on Software Piracy

	<u>2000-2001 study</u>	<u>2005 study</u>
I think that most people copy commercial software instead of buying it.	68%	76%
I think that most students copy commercial software instead of buying it.	78%	89%
I have copied commercial software instead of buying it.	54%	59%

**TABLE 5**

## Student Attitudes on Software Piracy

	<u>2000-2001 study</u>	<u>2005 study</u>
I think it is okay for people such as myself to copy commercial software instead of buying it.	66%	60%
I think it is okay for people such as myself to copy commercial software instead of buying it when we use it for educational purposes.	74%	69%

**TABLE 6**

## Student Attitudes on the Legality of Copying Music

	<u>2000-2001 study</u>	<u>2005 study</u>
I think that it is legal for people such as myself to copy commercial software instead of buying it.		
Always	37%	27%
when used for school work	40%	35%
Never	25%	39%

**TABLE 7**

## Student Perceptions on the Downloading of Music

I think that most <b>people</b> copy or download recorded music instead of buying it.	<b>97%</b>
I think that most <b>students</b> copy or download recorded music instead of buying it.	<b>99%</b>
I think that most <b>people</b> will buy some of the recorded music that they copy or download.	<b>69%</b>
I think that most <b>students</b> will buy some of the recorded music that they copy or download.	<b>61%</b>

**TABLE 8**

## Student Attitudes With Regard to Downloading Music

I have copied and/or downloaded recorded music instead of buying it.	<b>89%</b>
I have bought recorded music that I had copied and/or downloaded.	<b>71%</b>
I have copied and/or downloaded music to see if I like it enough to buy it.	<b>70%</b>