COLLEGE STUDENTS BELIEVE PIRACY
IS ACCEPTABLE

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ABSTRACT: This paper describes a study conducted on college students to determine their attitude toward copying of computer software. This study builds and replicates two earlier studies, by Schuster and by Christoph, et al. In addition to questions used by these two earlier studies, additional questions about experience with computers, use of software and perceptions of the extent of piracy by others were asked. The study was administered to over 300 students from various disciplines and from different levels.

The study's findings corroborate the findings of Christoph et al. in failing to find a significant relationship between computer work experience and attitude toward piracy. Questions similar to Schuster's study replicate his earlier results. When asked if they had personally pirated software, 58% of the students who indicated previous work experience with computers responded "Yes."

The authors recommend several forms of action for colleges and universities to take to reduce such unethical behavior. These actions include (1) formal education concerning the illegitimacy of software piracy in orientation and early courses of the students freshmen year and (2) informal education in the form university policies and demonstration of ethical actions by university employees.

KEYWORDS: Software Piracy, Computer Ethics

INTRODUCTION

Ethics has been called the guiding light of professionalism· The ethical issue of unauthorized copying of software, *software piracy*, is of great financial importance to business. U.S. industry losses $1 billion to $3 billion to piracy in its various forms, according to a 1984 estimate.

The issues surrounding software piracy are of particular concern to colleges, whose interest is more than just academic. As institutions of learning, colleges consider the teaching of ethics central to their mission. As businesses, colleges see piracy

from a novel viewpoint showing colleges as bastions of piracy.

Green and Gilbert complain that many hold the misperception that college students and faculty pirate software on a broad scale They dispute the accuracy of this perception, but do blame campuses for failing to provide adequate support for software purchase.

The empirical literature in this area is scanty at best. Despite the level of concern displayed by the industry and by colleges, few studies examine students' attitudes toward software piracy. None, to our

knowledge, examined actual piracy of software by students.

Schuster contributed one of the few studies of student attitude toward piracy· Schuster observed on his numerous visits to college computer laboratories that college administrators hold a lackadaisical attitude toward piracy. To garner more formal evidence, in April 1986 he surveyed 283 students at two colleges. His survey instrument was a questionnaire composed of ten multiple-alternative items and the opportunity for respondents to answer an open-ended question. This informal questionnaire was designed to test that

author's observations "that software piracy may be rampant in Academe." His findings showed a generally permissive attitude toward piracy among his sample.

Christoph, et al. conducted a survey of 140 college students to determine whether work experience with information systems affect attitude toward piracy, either positively or negatively. Their statistical analysis uncovered no effect on ethical standards toward piracy due to prior computer experience of their students.

These two studies attempt to measure student's attitudes toward piracy and discover correlates of the measure. By themselves they are unconnected and unconvincing.

THE PRESENT STUDY

The present study replicates and builds on these two empirical studies. In doing so, it attempts to develop evidence that when combined with earlier studies is more convincing and generalizable than any single study can be. Questions from both the Schuster and Christoph, et al. surveys were included in or adapted for the present survey. These questions include items about experience with computers, use of software, and perceptions of the extent of piracy by others.

The current study goes beyond mere replication of these two studies. It

constructs an Information System Ethics (ISE) scale. The survey includes items that have face validity in measuring information system ethics in its broader scope. These items query the respondents not only regarding their attitude toward software piracy, but also regarding their attitudes toward confidentiality of data, unauthorized use of computer equipment, and plagiarism. These items form the information system ethics scale of the questionnaire.

Additional items ask respondents whether they personally have pirated software and whether they opined that such actions were legal.

METHODOLOGY

In this study, respondents were given the choice of selecting the alternatives True, False or leaving the item blank. Even though items from the Schuster questionnaire were included in this study, this study uses this response scheme to overcome a difficulty in the Schuster study. Schuster explicitly included a "Don't Know" category for selected questions. Since in Schuster's survey a majority of the sample responded "Don't know" for selected items, and since the present survey queries regarding attitude, not knowledge, this study omits that category. Also, this study chose to word items parallel to one another, even at the cost of wording them differently at times from those items in the Schuster and Christoph studies. For these reason,

the survey methodology is not absolute replications of these earlier studies. Consequently differences in the results could be attributable to these methodological differences.

The study was administered in January 1988 to 309 students taking classes at Bradley University. Classes were sampled from various disciplines that use computers, including business (N = 223), engineering (N = 66), and communication (N = 20). The sample included students from different levels: 1) 135 freshmen and sophomores 2) 130 juniors and seniors and 3) 44 graduate students.
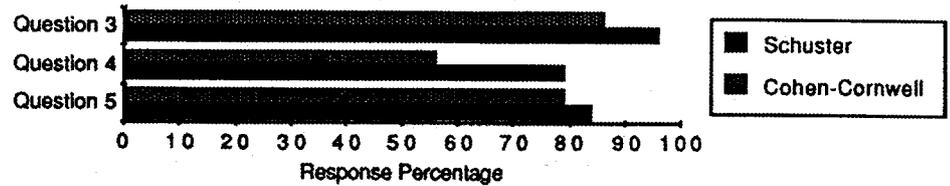
THE RESULTS

1. The 19 item ethics scale has a reliability level of alpha = .74. The authors consider this level impressive for three reasons: 1) the scale measures a concept that the authors consider to be not well focused or defined, 2) the scale is quite short, and 3) variability is restricted (response alternatives in this survey are limited to true and false).

2. Our finding corroborates findings of Christoph et. al in failing to find a significant relationship between computer work experience and attitude toward piracy. The table below summarizes these findings:

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Experience	5.072	4	1.268	0.130	0.971
Residual	2908.473	298	9.760		
Total	2913.545	302	9.647		

Experience with computers was not shown to be related to attitude toward piracy. The measure analyzed is students scores on the information systems ethics questionnaire. Experience was determined by the response to a five alternative question.

The questions 3, 4, and 5 compare the results of this study to that of Schuster's. (Items that students omitted or marked "Don't know" on Schuster's questionnaire are omitted from these analyses.) Table 1 summarize the results of these three questions.

Table 1

3. To the question "I think most students copy commercial software instead of buying it," 86% responded "True." This corresponds to 96% in Schuster's responded that may students copy.

4. To the question "I think most professors copy commercial software ...," 56% of the student respondents agreed. To Schuster's question "Many professors copy ...," 79% responded "Yes."

5. To the question "I think it is okay to copy software for educational use," 79% of this sample and 84% of Schuster's sample responded positively.

ADDITIONAL FINDINGS

1. To the question "I think most people copy software instead of buying it," 69% of this survey responded "True."

2. Only 25% of our respondents thought college administrators copied.

3. To the question asking students if they had personally pirated software, 44% of our sample responded "True." However, 24% of the sample indicated only passing or no experience with computers. Consequently, the percentage of students who both had opportunity to pirate and do so is

$$\frac{44\%}{1\text{-}24\%} = 58\%.$$

INTERPRETATION OF RESULTS

The results of this survey replicate the results of Schuster and of Christoph et al. In turn, the similarity of the results supports the generalization of the results of this study to American campuses at large. These results can be summarized as follows:

An overwhelming majority of students feel that software piracy and other forms of information system unethical behavior are acceptable. Experience with computer systems, at least over the range detected in this study, neither increases nor decrease one's ethical behavior.

Not only do many students feel that it is okay for them to pirate software (perhaps for its use in their education,) but they feel that piracy is normative behavior. Most alarmingly they believe that professors and, to a lesser extent, administrators pirate software. (This study does not investigate the veracity of these perceptions of faculty and administrator's "piracy." It does, however, confirm that a large proportion of students self-report that they have pirated software.)

WHAT CAN COLLEGES AND UNIVERSITIES DO?

These results, coupled with earlier studies, call out for colleges to act. We recommend two forms of action: (1) formal education and, (2) informal education. Formal education concerning the illegitimacy of software piracy can take place during orientation and training sessions provided for the students and in regular classes at the university. Informal education can be of the form of posting and distributing university policies and regulations concerning software piracy and the demonstration of ethical actions by university employees.

Formal education. With the common availability of computer software on today's campuses, it is appropriate to provide beginning students with the university policy toward software piracy. Students enter college from different backgrounds and with different experiences. Many students are unaware that software piracy is illegal or unethical. The orientation sessions at the beginning of school provide an excellent opportunity to educate the student of this policy. The university should feel obligated to provide students with this information and education. In addition to this introduction, students should also be provided with formal education in those courses that use the computer. This does not need a significant amount of time in the course but should clearly state the university policy and express the standards expected of the student.

Informal education. Informal education can be demonstrated in several forms: 1) availability of software, 2) posting of university policy and 3) prominent role models as examples.

First the university must provide the students with a sufficient number of (legitimate) copies of software and with sufficient access to them. Site licensing of software is one alternative for acquiring large number of copies of a software package. Tracy reports on efforts by software publishers to reduce the economic incentive for piracy in schools and elsewhere through "shareware." The essence of this solution is to make software available, thereby reducing the desirability of piracy. In the words of William Saroyan, "If you give to a thief he cannot steal from you, and he is then no longer a thief."

A second action has been recommended by Schuster and by Warner. They recommend that the administration clearly articulate to the students its policy on software piracy. Toward this end we recommend posting the following notice in computer laboratories and having professors announce it periodically in classes:

A third form of informal education is the role models presented by university employees and faculty. In our own experiences, some professors actually promote the copying of software by assigning homework that requires the use of software beyond that owned by the university; others indirectly promote the activity by looking the other way when it occurs. A very effective approach to discouraging software piracy is the display of professional conduct by the professor in the course or by the computer staff in the computer laboratories.

These actions may turn around the trend of students to condone software piracy. Unauthorized copying of software piracy is indeed rampant in Academe.

The policy of this university is to provide sufficient number of copies of all required software and sufficient access to hardware to meet your instructional needs. Our policy is quite clear:

Do not copy proprietary software.

Please do let us know if we need extra copies of any software.

REFERENCES

1. Murray Mizock, *Ethics - the Guiding Light of Professionalism,*

Data Management (August 1986) 16-18,29.

2. *Computer Software Piracy,* World Press Review 31 (November 1984) 56-8.

3. Kenneth C. Green and Steven W. Gilbert, *Software Piracy (Responsibilities of Colleges),* Change 19 (Jan/Feb 1987) 46-9.

4. William V. Schuster, *Bootleggery, Smoking Guns and Whistle Blowing: a Sad Saga of Academic Opportunism,* presented at Western Educational Computing Conference, San Francisco, (October 1987).

5. Richard Christoph, Karen Forcht, and Charles Bilbrey, *The Development of Information Systems Ethics: An Analysis,* The Journal of Computer Information Systems (Winter 1987/1988) 20-23.

6. Phyllis Coons, *End Piracy with Partnerships,* Electronic Education (October 1986) 8-10.

7. Eleanor Johnson Tracy, *Selling Software on the Honor System (Combating Piracy by Giving Programs Away),* Fortune 110 (October 15, 1984) 146.

8. William Saroyan, The Human Comedy (1943) ch. 4.

9. Sally Warner, *They Practice What They Preach,* Electronic Education (October 1986) 18-19.

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