

**Chapter 6**  
**The OTA Survey**

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### WHY DO AN OTA SURVEY?

Very early in the study it was clear that OTA needed its own survey of home taping and copying behavior. A number of previous surveys of taping behavior had been performed, but they did not meet OTA's needs in developing and discussing policy options for Congress.

The authors of a previous OTA study, *Intellectual Property Rights in an Age of Electronics and Information*, noted the need for a new survey. In its brief review of surveys of taping behavior, the report noted that "[existing surveys vary considerably, and rapid changes in technologies and use make previous surveys of harm increasingly less relevant. Conducted by parties involved in the intellectual property debate, most of the surveys that are available are, moreover, subject to bias."<sup>1</sup> A congressional request letter for the home copying study<sup>2</sup> cited the above passage to support the need for a new survey.

A review of the earlier surveys at the beginning of this project confirmed the view that they were not a suitable basis for a congressional policy study. Briefly, there were four problems.

First, several years had passed since the most recent surveys of home-taping behavior, and the current rate of technological change may have rendered their results less than useful.

Second, most previous surveys were performed by the electronics industry and the recording industry groups, or by other organizations that were parties to the home-copying

debate. Although many of these were professionally prepared surveys, they nevertheless reflected fundamental biases, as will be discussed later. Further, the surveys were very different in methodology so that their results could not be compared.

Third, in many cases, the published reports on these surveys were incomplete. Often the precise wording of questions, specific details on the sampling plan, or other data were not available for examination.

Finally, the OTA assessment needed a broader empirical focus than previous studies offered. Earlier studies had focused only on one medium, usually audiotaping. To provide a context for policy options, OTA needed some comparable information on different types of copying and on possible similarities and differences in behavior. In addition, OTA needed information on public perceptions of and opinions on various policy alternatives, preferably from the same population.

### *Recency of Surveys*

The age of the surveys was probably the least important of the objections, but it was still a troubling one. Technology has been changing rapidly; new products have been entering the market place, and their availability has given consumers new options in their purchasing and copying behavior.

A number of surveys of home audiotaping behavior were conducted in the late 1970s and early 1980s. (See table 6-1 for a summary of previous surveys of home taping reviewed by OTA.) The most recent major survey was

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<sup>1</sup>U.S. Congress, Office of Technology Assessment, *Intellectual Property Rights in an Age of Electronics and Information*, OTA-CIT-302 (Melbourne, FL: Kreiger Publishing Co., April 1986), p. 201.

<sup>2</sup>Letter from Senator Dennis DeConcini, Chairman, Senate Subcommittee on Patents, Copyrights and Trademarks, and Representative Robert W. Kastenmeier, Chairman, House Subcommittee on Courts, Civil Liberties and the Administration of Justice to Mr. Frederick Weingarten, Office of Technology Assessment, May 8, 1987, p. 2.

Table &amp;I. -Surveys on Home Audiotaping

<i>Tie</i>	Sponsor	Surveyor	Year(s)	Methodology
The Prerecorded Music Market: An Industry Survey	Warner Communications Inc.	National Analysts, Div of Booz, Allen Hamilton & Co.	1978	3,385 personal interviews
A Study on Tape Recording Practices among the General Public	Recording Industry Assn. of America/National Music Publisher's Assn.	The Roper Organization	1979	2,004 adults plus 131 10 to 17 year olds; telephone interviews
A Survey of Households with Tape Playback Equipment	Copyright Royalty Tribunal	William R. Hamilton & staff	1979	1,539 telephone interviews, aged 14 and over
Blank Tape Buyers: Their Attitudes and Impact on Prerecorded Music Sales	CBS Records	CBS Records Market Research	1979-80	7,500 telephone interviews; 1,000 mail interviews; 1,000 in-store interviews – all record & tape buyers
Home Taping: A Consumer Survey	Warner Communications, Inc.	National Analysts, Div. of Booz, Allen Hamilton & Co.	198(-82	2,370 face-to-face interviews
1981 Estimate of Loss Due to Home Taping: Tapers Reports of Replacement	Warner Communications, Inc.	WCI Consumer Research	1981-82	3,264 mail interviews with diary, aged 10 and above
Why Americans Tape: A Survey of Home Audiotaping in the U.S.	Audio Recording Rights Coalition	Yankelovich, Skelly & White, Inc.	1982	1,018 telephone interviews with persons aged 14 and over who had taped in past 2 years
Home Taping in America: 1983 Extent and Impact	Recording Industry Assn. of America	Audits and Surveys	1983	1,354 mail interviews and diaries; 589 personal interviews and tape audits

SOURCE: Office of Technology Assessment, 1989

published in 1983 for the Recording Industry Association of America (RIAA).<sup>3</sup> Thus, most studies were completed before the wide availability of portable walkabout tape players and compact disc players, technologies that are having a profound effect on home entertainment. The most recent survey that included

consumer attitudes toward copying behavior and possible policy alternatives (e.g., the acceptability of a tape levy to offset losses due to copying) was published in 1979 by the Copyright Royalty Tribunal.<sup>4</sup> It is likely that there have been changes in attitudes and opinions since that time,

<sup>3</sup>Audits and Surveys, *Home Taping in America: 1983, Extent and Impact*, report prepared for RIAA, New York, NY, 1983.

<sup>4</sup>Copyright Royalty Tribunal, *A Survey of Households with Tape Playback Equipment*, Washington, DC, September 1979.

### ***Biases and Lack of Comparability of Previous Studies***

Table 6-1 shows that most of the institutional sponsors of previous surveys of home taping were stakeholders in the home-copying debate. Such sponsorship does not necessarily produce a biased study. A study that was produced for advocacy purposes is immediately suspect, however, and if complete data are not available for examination, such suspicions cannot be put to rest. While most of the surveys were performed by experienced survey research firms that used generally accepted survey and statistical techniques, biases could still arise in the wording of questions, choices of measures, or selection of questions to be asked.

Previous surveys have used various methodologies and measures of taping activities. Survey methodologies have ranged from face-to-face interviews to audits (actually counting tapes and records owned) to mail surveys to telephone interviews, as shown in table 6-1. To measure taping activities, some surveys have used the “number of tapes” purchased or used,<sup>6</sup> others the “instances of taping,”<sup>7</sup> and still others the “number of pieces of music copied.”<sup>8</sup> In addition, some questionnaires asked about taping activities in general, while others focused on one specific instance of taping. The populations varied as well, with some surveys interviewing the general public, some interviewing only people who made home tapes, and some focusing on people who frequented record stores.

With all these differences in selection of question, population, and unit of measure, it was extremely difficult to resolve differences among survey results. For example, *Why Americans Tape*, commissioned by the Audio Recording Rights Coalition found that home audio recording stimulated sales of pre-recorded material. This was based on a large number of positive responses to questions such as, “Have you ever discovered that you like performers or composers as the result of taping one of his or her albums from a borrowed recording?” and “Has this ever led you to buy a record or prerecorded tape of this performer or composer?”<sup>9</sup> On the other hand, *Home Taping in America*, commissioned by the RIAA, found that taping did not stimulate sales. In personal interviews, subjects were asked, “Thinking of the (record/tape) you bought most recently, which of the following reasons on this card, if any, best describe why you bought it?” Of nine suggested reasons, only a small number of respondents selected “heard other music by artist/group on a home-recorded tape” or “heard a home-recorded tape of it.”<sup>10</sup> Thus, it was clear that raising the question in different ways could elicit very different answers. While it can sometimes be argued that one formulation of a question is “better” than another in an objective sense, the choice of a “better” formulation is often a matter of opinion that will be influenced by the motivations of the survey sponsors and the expected uses of the survey results.

<sup>6</sup>For example, see CBS Records Market Research, *Blank Tape Buyers: Their Attitudes and Impact on Pre-recorded Music Sales, 1980*.

<sup>7</sup>Audits and Surveys, op. cit., footnote 3.

<sup>8</sup>Copyright Royalty Tribunal, op. cit., footnote 4.

<sup>9</sup>The Roper Organization, *A Study on Tape Recording practices of the General Public*, June, 1979.

<sup>10</sup>Yankelovich, Skelly, and White, Inc., *Why Americans Tape: A Survey of Home Audiotaping in the United States*, report prepared for the Audio Recording Rights Coalition, September 1982.

<sup>11</sup>Audits and Surveys, op. cit., footnote 3.

### ***Data Not Available for Examination***

Different measures and different forms of questions made it difficult for OTA to use **previous** studies for purposes of comparison in developing its policy analysis.

More problematic, however, was the fact that many of the previous surveys' data **were not** available for detailed analysis, or for independent replication. In some cases, it was not possible to determine the exact wording of questions **or** instructions to respondents. For example, the survey completed by Audits and Surveys for the RIAA<sup>11</sup> examined the taping behavior of **several** hundred people who maintained taping diaries during a month of 1983. The report on the survey did not, however, elaborate on the instructions given to respondents or the criteria they were to use in classifying their reported behaviors. In addition, a 1980 report by CBS Records Market Research indicated that blank tape purchasers 'primarily tape to make custom tapes and to save money,' but did not indicate the precise questions **used to** elicit these results.<sup>12</sup> Similarly, the report **was** based on the results of three separate surveys, but did not indicate how they **were** combined to produce a single result.

Reports **on some** other surveys did provide exact wording for the questions reported. It was not always clear, however, that *all* questions were reported, **nor was it possible to obtain responses to the questions that were not reported. Thus, OTA could not use the results of the previous surveys, except to note general trends.**

The OTA report will occasionally refer to previous surveys and compare the results of the 1988 OTA survey with some previous study, but this must be done with caution,

since the results are comparable only in the most general sense.

### ***Narrowness of Focus***

Most previous work focused on one particular type of copying. The surveys in **table 6-1, for example, deal only with audiotaping behavior. Some of these studies had been remarkably detailed as they intensively explored such topics as the amount of time spent making audiotapes, the numbers of tapes used, the types of music copied, the numbers of pieces of music recorded per tape, etc. The survey sponsors often considered such detailed data necessary both to understand their markets thoroughly and to support partisan positions, such as claims of economic harm to the recording industry. However, this wealth of detail would be of little help to Congress in understanding how audio taping fits into the general pattern of home taping and copying.**

A more general understanding of this pattern would be very useful in developing policy alternatives. It would be helpful to understand, for example, whether people who audiotape frequently also videotape frequently. Is there some specific group of people who consistently make home copies of copyrighted material of every type? Or are the users of audiotapes, videotapes, and computer copies different groups of people with different sets of motivations and incentives? Previous studies were not helpful in answering these questions.

Similarly, few of the previous surveys closely coupled a study of taping or copying behavior with attitudes about intellectual property. They would thus be of little help in determining which kinds of home copying activities tended to violate contemporary Amer-

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<sup>11</sup>Audits and Surveys, op. Cit., footnote 3.

<sup>12</sup>CBS Records Market Research, op. cit., footnote 5, p. 11.

ican social norms and whether the attitudes of home copiers were fundamentally similar to those of people who did not make copies.

Given the rapidity of technological change and the blurring of boundaries between different copying technologies, Congress may want the option of dealing with home copying in a general way, rather than on a piecemeal basis. This necessitates some grasp of the general pattern of taping and copying. Similarly, Congress may want to understand differences, if any, between copiers and the rest of the population, before selecting a policy alternative.

## GOALS OF THE OTA SURVEY

OTA had some specific goals in developing this survey. They met with varying degrees of success.

The first goal was to manage the problem of bias. OTA recognized from the outset that it would be impossible to eliminate all bias from its own survey. The objectives here were more modest. The first was to minimize bias to the extent possible by avoiding some of the problems observed in previous studies. Second, and more important, was to use an open process for developing the survey approach and the survey instrument. In this way, areas of unavoidable bias, disagreement, or uncertainty, could be clearly identified and discussed. Therefore, outside survey experts, stakeholders, and members of the public were involved in every step of the survey development process. The review process is discussed in detail in appendix A.

The next goal was to develop a survey that would be helpful in developing useful policy options in an age of rapid technological change. Two major objectives supported this goal. First, the survey was to include ques-

tions on a range of home-copying activities, not just audiotaping. It was hoped that the survey could identify similarities and differences in usage across technologies to help assess whether the same policy levers could affect different types of copying behavior. Given limited time and resources, this objective was only partially fulfilled. The final OTA questionnaire included questions about audio and video copying. The second objective was to gather information on public awareness of and opinions on policy issues. There had been a few public opinion polls on some of the specific remedies. For example, the Copyright Royalty Tribunal conducted a poll that explored peoples' attitudes toward possible remedies such as a tax on audio tape.<sup>13</sup> OTA planned to examine attitudes and opinions in light of copying behavior to determine those that were widely held and those that were peculiar to people who copied.

Another goal of the OTA survey was to provide information in a form that would be useful in an independent assessment of the economic effects of copying on the copyright-holding industries. Results of several previous surveys have been used to estimate alleged "economic harms" to industry. OTA intended to pursue economic analyses that would weigh impacts on the general public, as well as on the industries involved. The survey represented one phase of data collection for these analyses, which are described in chapter 7.

The final goal of the OTA study was to provide an open and available database on home copying that could be used or reanalyzed by others. The OTA survey instrument and all data collected are available through the National Technical Information Service. It is hoped that this survey will be the basis for future studies.

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<sup>13</sup>Copyright Royalty Tribunal, *Op. cit.*, footnote 4.

## DESCRIPTION OF THE FINAL QUESTIONNAIRE

The final questionnaire was introduced to respondents as a national survey on how the public uses audio and video technology. The topic of copying was not flagged as the particular area of interest. Indeed, to establish the proper context for questions about taping and copying, it was necessary to ask many general questions about peoples' use of home audio and video technology.

The final questionnaire was devoted primarily to the use of home audio technology, with a small section on video technology. As mentioned earlier, the original plan called for questions on computers as well. One goal of the survey was to compare different types of home copying and to determine whether the pattern of home audiotaping was similar to other types of home copying. As the survey instrument was developed, however, it became clear that there was not enough time to cover all three subject areas adequately.

To retain some measure of nonaudiotaping activities, the final survey included a short section on videotaping and copying. The videotaping section, while considerably shorter and less detailed than the audio section, was designed to parallel some of the audiotaping measures. The section included questions on videocassette recorder ownership and on recent VCR-related activities, including recording off-the-air, renting or buying tapes, and copying prerecorded videotapes. People who did not have access to VCRs or who had not made a tape within the past year had to answer only a few questions in this section.

The audio section was the longest segment of the survey instrument. It included questions on music listening, ownership of audio

recording and playback technology, purchase of prerecorded audio products, as well as home taping behavior and motivations. People who did not listen to recorded music were required to answer only a few brief questions in this section.

Music listening formed the context for questions in the audio section. The questionnaire attempted to develop measures on the importance or value of music listening to the respondent. It then explored all the different ways in which the respondent acquired the recorded music that he or she listened to most recently, including purchases, gifts, and taping from various sources. The survey continued with detailed questions about the most recent experiences of purchasing and taping prerecorded music, where appropriate. The survey also attempted to establish an inventory of the number of recordings and the types of audio listening and recording equipment available to the respondent.

A final section of the survey examined attitudes of the public—tapers and nontapers—about the home taping of music. In addition, this section gauged public opinion toward a range of proposed policy alternatives to address the issue of the home taping of music.

A copy of the questionnaire is included in appendix B of this report.

### ***Study Population, Design, and Sampling<sup>14</sup>***

The target population of this study consisted of the noninstitutionalized population of the United States, aged 10 and older. Since the issues to be addressed by the survey were broader than measuring the current quantity of home taping, the survey design did not

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<sup>14</sup>This section is taken from Schulman, Ronca and Bucuvalas, Inc., *Survey of Home Taping and Copying: Final Report. Volume 2: Detailed Findings on Home Audiotaping*, report prepared for Office of Technology Assessment by John M. Boyle, Kenneth E. John, and Jane A. Weinzimmer (New York, NY: February 1989), pp. 8-20; and Appendix A (Springfield, VA: National Technical Information Service, October 1989).

adopt a sampling frame in whole or part based on home tapers, as several studies had done in the past. Rather, the population of interest was the potential market for prerecorded audio products and those potentially affected by governmental policy related to audiotaping. Past research suggested that the entire population of the United States, aged 10 and over, was part of that market. Consequently, the study design called for a national sample of the population of the United States, aged 10 and over.

Previous research had established the importance of the younger age cohorts in both the market for prerecorded music and the use of home taping. Since it was important to represent younger persons in the sample adequately, even though response rates among younger populations are usually lower than average, a disproportionate sampling strategy was adopted to ensure adequate representation of the population under 35 years old. The sample was stratified by age cohort and a within-household sampling technique was used to increase the prior probability of selection for the 15 to 29-year-old age cohorts. The use of a probability-based selection, rather than a quota sampling approach, ensured the statistical validity of the sample. The specific details of the sampling procedures are presented in the contractor's report.

### ***The Field Period***

After final approval of the questionnaire, interviewing began in late September 1988 and continued until late October. A total of 1,501 interviews, averaging 25 minutes, were completed in this period. As in all population surveys, the demographic characteristics of the achieved sample varied from current population estimates as a result of nontelephone

households, multiple-telephone households, household size, and differential participation rates. The sample for the OTA survey was weighted to current population estimates, based on household size, age, sex, and race. The survey findings from this weighted sample of the population of the United States, aged 10 and older, should have been projectable to the total population from which it was drawn, within the limits of expected sampling variation. Further details about the sample appear in the contractor's report.<sup>15</sup>

In the completed sample there were 563 interviews with a nationally representative sample of persons who had taped music from radio, television, records, tapes, or CDs in the past year. The survey sample also included a nationally representative sample of 897 persons who had purchased a record, prerecorded cassette tape, or CD in the past year. In addition, there were 471 completed interviews with a nationally representative sample of people who had used an audiotape recorder in the past year to tape things other than music. In addition, interviews were completed with a nationally representative sample of 717 persons who had acquired a videotaped program by rental, purchase, home recording, or gift within the past year. Thus, the survey generated samples of adequate size to afford some reasonably detailed analyses of home audio- and videotaping activities.

## **SUMMARY OF SURVEY FINDINGS**

The OTA survey found that 4 in 10 of a nationally representative sample of persons aged 10 and over had taped recorded music (either from a broadcast or from a record, prerecorded cassette tape, or compact disc) in

<sup>15</sup>Schulman, Ronca, and Bucuvalas, Inc., op. cit., footnote 14.

the past year. Thus, home taping was much more prevalent in 1988 than it had been in 1978-79, when surveys found that 21 to 22 percent of the population were past-year tapers. The 1988 finding was roughly similar to the taping prevalence found in a 1982 survey.

Music tapers, in general, had a greater interest in music, listened to more music, and purchased more prerecorded music products than did nontapers. Conversely, the majority of nontapers listened to little recorded music.

Audiocassette was the most frequently purchased format of prerecorded music. The survey found, however, that tapers more frequently copied from records than they did from tapes. People who purchased a prerecorded item with the intention of taping from it (as did about one-seventh of the sample) were far more likely to purchase a record or CD than a prerecorded audiocassette. Many people seemed to copy for the purpose of "place-shifting," that is, copying music from records and CDs to the more portable cassette format.

The survey found that a large majority of people who copied from a prerecorded format in their last taping session were copying their own record, tape, or CD for their own use. They usually copied with the intention of keeping the tape permanently. About one-fifth taped a copy for a friend or copied a borrowed item. Few copies were made from homemade tapes.

People who taped from radio broadcasts were less likely to copy full albums than those who copied records, cassettes, or CDs. About half of the last home taping of prerecorded formats involved taping of whole albums.

While home taping certainly displaced some sales of prerecorded products, survey data also pointed to some stimulative effects. Home tapes had value in promoting songs and performers. In addition, a significant number of purchasers bought prerecorded products with the intention of copying them.

The taping of noncopyrighted material occurs more frequently than the taping of prerecorded music. Perhaps three-fourths of taping occasions involved taping something other than music. Tapes of noncopyrighted material varied widely in type, length, and lasting value, with some, like answering machine messages, being rerecorded often. This survey did not attempt to determine how much space in home libraries was occupied by prerecorded music as opposed to noncopyrighted material.

The survey found that people discriminated little with respect to the grade of blank tape they used for recording voice as opposed to music. Indeed, a large majority of respondents had no idea of the grade of tape they used in their last taping session.

The survey found that the availability of dual-cassette and high-speed-dubbing technology had little relationship to the number of homemade tapes. People with many homemade tapes, or with few, or even none, seemed to own equipment with these capabilities in roughly similar proportions. Thus, technology did not seem to drive copying behavior. Distribution of these features may have reflected the number of players in the home, or their recency of purchase, rather than taping activity.

Most videocassette recordings, unlike their audio counterparts, were made for temporary use. Most videotaping fit the definition of "time-shifting" outlined in the *Sony* decision. A few specific program types— including concerts and educational shows— were copied with the intention of keeping.

The survey found that, while television taping was common among VCR owners, copying tapes was not. Of the tapes that were copied, only a minority were made from an original that belonged to the copier. Some originals were rented from video stores, but the bulk were obtained from friends. Thus, there appeared to be a modest level of exchange of

videotapes among friends for the purpose of copying.

While the survey found a somewhat higher incidence of video copying among music tapers than among nontapers, there was no strong convergence between video- and audiotaping behavior. The survey found that much home-video and home-audio copying was done by different people, for different reasons.

Although the general public was unfamiliar with copyright law as it related to home taping, people did have opinions on the norms governing acceptable behavior in the area of home taping. In general, both tapers and nontapers believed that it was acceptable to copy a prerecorded item for one's own use or to give to a friend. The only copying behavior that was universally condemned —by tapers and nontapers — was copying a tape to sell.

Although most respondents had little idea whether the existing situation in home copying was fair to the recording industry, to performers, or to the consumer, they did strongly oppose all the tested suggestions for changes to the status quo that would impose user fees or limit taping by technological means.

## MUSIC LISTENING IN AMERICA

The survey documented an active interest in music listening among the American public, with frequent listening to music on radio, television, records, tapes, and compact discs. A majority (56 percent) of this nationally representative sample of persons aged 10 and

older considered listening to music as “extremely” or “quite” important to them (see table C2-1).<sup>16</sup> Only 7 percent reported that they had spent no time in the last 7 days listening to music on the radio and television. By contrast, a majority of the sample (51 percent) reported 7 or more hours of listening to broadcast music.

Generally speaking, the survey found that people listened to broadcast music more frequently than to music on records, tapes, and CDs. Indeed, 43 percent of the survey respondents reported that they spent no time listening to music on prerecorded formats in the past week. Nonetheless, a majority of survey respondents (56 percent) reported listening to recorded music in the past 7 days (see table C2-4).

## CONSUMER AUDIO TECHNOLOGY

Given the widespread interest in music listening, it is not surprising that the survey found that virtually everyone had one or more types of audio playback equipment. The proportion of survey respondents with record players in 1988 was 81 percent, effectively unchanged from survey estimates of 78 percent in 1978.<sup>17</sup> But the portion of the population with cassette players had more than doubled in the past decade, from 38 percent in 1978 to 94 percent in this survey (see table C2-7).

Most respondents had a number of different types of cassette player/recorders. Only 16 percent had only one of the four types of tape decks examined in the survey. Nearly a quarter had two of the four types; 27 percent had

<sup>16</sup>Note: All survey tables are located in appendix C of this report, and the numbering is identical to that in the SRBI report (*op. cit.*, footnote 14). Sampling precision, statistical significance, and confidence levels are discussed in the SRBI report, pp. 14-20.

<sup>17</sup>Warner Communications Inc., *The Prerecorded Music Market: An Inventory Survey*, March 1978.

three of the four types; and another 27 percent had all four kinds of audio cassette equipment (see table C2-6). This actually understates the number of cassette decks owned or used by respondents because the survey did not inquire into the number of player/recorders that the respondent had within each class.

This survey did not examine whether the tape players had recording capabilities. Most tape players currently on the market (except for automobile stereos and some walkman-type players) can both play and record. Hence, most tape players are assumed to be recorders as well. The survey findings suggested that virtually everyone aged 10 and older had immediate access to the technology to copy music recordings.

## THE MARKET FOR PRERECORDED MUSIC

Given the widespread ownership of cassette players, it is not surprising that the audiocassette was the recorded music format most frequently owned by the sample population. Nearly six out of seven respondents (84 percent) reported owning one or more audiocassette tapes. Indeed, nearly half (49 percent) of respondents reported that they owned 11 to 50 audiotapes. It should be noted that while audiotapes had achieved the greatest penetration rate, the LP record remained the most numerous format for prerecorded music in home inventories. The compact disc had the smallest penetration rate: 18 percent of the sample reported owning any compact discs. Among this sample, 83 percent reported having purchased a record, prerecorded cassette tape, or CD in the past. Over half (58 percent) had purchased recorded music in the past

year. The primary market for prerecorded music was among the young. The incidence of past-year purchase of records, cassettes, and CDs was 89 percent among the 15 to 19-year-olds, 78 percent among 20 to 24-year-olds, and 71 percent for the 25 to 29-year-olds, and 64 percent among 30 to 34-year-olds.

## MOST RECENT MUSIC PURCHASE EXPERIENCE

The recorded music format most frequently purchased in the past year was the prerecorded cassette. Seven out of ten past-year buyers of prerecorded music (70 percent) reported purchasing a prerecorded cassette on their most recent purchase occasion, compared with 18 percent buying LP records, 12 percent buying compact discs, and 3 percent buying 45-rpm records. When the purchase period was restricted to the past month's purchases and all purchases were counted by type, however, the survey findings suggested that in the last quarter of 1988, prerecorded cassettes represented 51 percent of the music recordings sold to sample respondents; long-play records accounted for 22 percent of units sold; compact discs accounted for 21 percent; and 45 rpm records accounted for 7 percent of the units sold.

### *Projection of Music Purchases*

Schulman, Ronca and Bucuvalas used "past-month" purchases to estimate the number of units (records, prerecorded cassettes, and CDs) purchased in the United States each year.<sup>18</sup> SRBI arrived at a "corrected" estimate of approximately 750 million units per year.

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<sup>18</sup>The SRBI report includes an estimate of average annual purchases based on analysis of most recent purchases (see SRBI Report, op. cit., footnote 14, p. 54). In comparing their projection with actual 1988 sales, as reported by RIAA, however, SRBI finds their projection of 1,500 million purchases per year is too large by about a factor of 2. SRBI attributes this problem to recall error and applies a 100 percent correction factor to develop what they consider a more reasonable estimate: 750 million purchases per year.

OTA made an alternative estimate of the total market for prerecorded music by using respondents' most recent purchases during the past year. One motivation for this was that the number of respondents was larger for "past-year" events. Also, using more aggregated data for the recency of the event and number of items per event could help reduce the effect of recall errors. OTA used the data presented in tables C4-2 and C4-5 on the most recent purchase to approximate a weighted average of the frequency of purchases in a year<sup>19</sup> and an average number of items purchased per event (based on past-year purchasers). Assuming a U.S. population of 204 million persons age 10 and over, OTA's method yielded an estimate of 885 million annual purchases of prerecorded music items.

Thus, the survey data yielded a fairly broad range of values for estimated yearly purchases, depending on the specific data items and methods used (see table 6-2). But the range was not very far from RIAA's report that a record 762 million units were shipped in 1988.<sup>20</sup>

## MOST RECENT LISTENING EXPERIENCE

To understand respondents' preferences and behavior in more detail, the survey examined the most recent experience of music listening. It is reasonable to expect that the respondent's recall of the nature and source of the recording heard on this occasion to be

**Table 6-2.—Projected Purchasing/Taping Activity**

	SRBI <sup>a</sup>	OTA <sup>b</sup>
Estimated number of yearly purchases (records, prerecorded tapes, and CDs)	750 million	885 million
Estimated yearly tapings <sup>c</sup> from prerecorded sources	600 million	578 million
Estimated yearly tapings <sup>c</sup> from broadcast sources	700 million	439 million

<sup>a</sup> Estimates in first column are from the final report by the survey contractor, Schulman, Ronca, and Bucuvalas, Inc (SRBI) They are calculated from "past-month" activity, adjusted by SRBI's 100 percent correction factor Based on past-month tapers (N = 150 for prerecorded taping; N = 165 for broadcast taping)

<sup>b</sup> Figures in second column are OTA staff estimates, calculated from estimated yearly frequencies (See tables C5-12, C15-13, C5-6, and C5-7 ) Based on "past year" tapers (N = 406 for prerecorded sources, N = 336 for broadcast sources)

<sup>c</sup> "Tapings " refers to instances of recording Number of "tapings " is not equivalent to number of filled blank cassettes or album equivalents.

SOURCE: OTA Survey (September-October 1966)

most accurate. Respondents were asked to report the last time they had listened to recorded music on audiotapes, records, or CDs, not including music on radio or television or background music in public places. In the majority (59 percent) of cases, survey respondents reported that their most recent listening occasion had been within the past week; for about 18 percent of respondents the last listening experience was within the past month (see table C3-1). In all, 88 percent had listened to music within the past year. These respondents were questioned about their listening experience in more detail.

<sup>19</sup>For example, if a person reported that the last time he bought a recording was 1 month ago, then an estimate of his yearly purchase frequency was 6 events per year, because (on average) the question would be asked midway between purchases.

OTA made some approximations in calculating the average frequency of purchases: "last week" was assumed to be a week ago, "last month" a month ago, "last year" a year ago, "year or more" as two years, "not sure" as never. This tended to underestimate the true frequency.

<sup>20</sup>RIAA Market Research Committee, 1989. (See table 4-1 in this report. )

Most respondents (63 percent) reported listening to music at home on their most recent listening occasion; 23 percent reported listening in a car. Most of the rest were at the home of a friend or at work.

About two-thirds (64 percent) of those listening to recorded music within the past year reported that they were listening to audiotapes on their most recent listening occasion. Records were a distant second, reported in only 21 percent of listening occasions. Compact discs were listened to in another 10 percent of cases. In 3 percent of cases, respondents reported that their most recent experience included a mixture of recorded formats – most often records and tapes (see table C3-7). In three-quarters of the cases (74 percent), the survey respondents were listening to their own records, tapes, or CDs, rather than someone else's. Those who were listening to their own recording were asked how they obtained the recording. In 74 percent of the cases, the listener had purchased the recording for himself. In another 12 percent of cases, the respondent reported that the recording was received as a gift (see table C3-13).

### ***Homemade Recordings in the Most Recent Listening***

As mentioned earlier, about three-fourths of respondents reported listening to their own recording on the last listening occasion. Of these, 10 percent reported that they had made the recording at home. The proportion of homemade tapes was almost twice as high among Blacks (20 percent) and 10 to 14-year-olds (18 percent). Perhaps surprisingly, the proportion of homemade tapes among recordings last listened to was found to be low among 15 to 19-year-olds (5 percent) (see table C3-13).

The survey findings thus documented that around 7.4 percent ( $0.10 \times 0.74$ ) of the listeners heard homemade tapes on their last listen-



*Photo in Office of Technology Assessment*

Music tapers also buy recordings.

ing experience. Indeed, if it is reasonable to assume that the 24 percent of recordings belonging to someone other than the respondent mirrored the same pattern, then around 10 percent of the music most recently played was a product of home copying. Moreover, the survey also found that 31 percent of the audiotapes that were borrowed or given to survey respondents were tapes that someone had made. Combining these sources produced an estimate that around 12 percent of the recordings most recently played by persons aged 10 and older were the product of home taping.

The most common sources of music for these homemade tapes were the records, cassettes, and CDs already owned by the respondent. Over one-third (37 percent) of these tapes were made from the respondent's own original recordings. Radio broadcast music was the source material for another 29 percent. Records, prerecorded cassettes, and CDs belonging to others were the source of music for most of the remaining tapes (22 percent). Fewer of the homemade tapes were copied

from other homemade tapes made by the listener (4 percent) or someone else (3 percent) (see table C3-13).

The sample size of respondents who had most recently listened to a homemade tape was small, so analysis of this group could only be suggestive. The data did suggest, however, that the youngest home-tape listeners were most likely to obtain material from radio. The data also suggested that about half (51 percent) of the tapes included one or more entire albums, while a little under half (46 percent) were made up of selections from a number of different albums. About 23 percent of the homemade tapes were exclusively complete albums, with no mixture of selections included (see table C3-15). To the extent that these data could be relied on, they suggested that about 3 percent (23 percent of 12 percent) of the recordings most recently played by the sample population were copies of albums in a form that should have been commercially available.

## PREVALENCE OF HOME TAPING

One of the principal objectives of this study was to provide current estimates of the prevalence of home taping in the population. Home taping means the use of a tape recorder at home—to tape any sound, voice, or music, from any medium. A major concern in this study, however, was the copying of copyrighted music from recordings or from television and radio broadcasts.

This section describes the activities of persons who had used an audiotape recorder at home, within the past year, to tape music

from radio, television, records, tapes, or CDs. Four out of often respondents (41 percent) were “past-year music tapers” according to this definition. Men (44 percent) were somewhat more likely than women (38 percent) to be past-year tapers. Blacks (48 percent) were somewhat more likely than whites (40 percent) to have taped in the past year. These tapers include majorities of those aged 10 to 14 (80 percent), 15 to 19 (77 percent), and 20 to 24 (59 percent) years old (see table C5-1).

The finding that 41 percent of this nationally representative sample were past-year tapers suggests that home taping was nearly twice as prevalent in 1988 as was found by surveys in 1978 (21 percent)<sup>21</sup> and in 1979 (22 percent)<sup>22</sup> that used the same population and similar questions.

It is possible that much of the rapid expansion in home taping occurred between 1978 and 1982. The Yankelovich survey in 1982 found that the prevalence of taping in the previous 3 months was 29 percent among the population aged 14 and older.<sup>23</sup> Using the same period of opportunity and restricting the sample to those 14 and older, the OTA survey found a virtually identical rate of 28 percent in 1988 (see table C5-3).

The changes in the rates of home taping among the teenage population since 1978-79 was particularly notable. The 1979 survey cited previously found the prevalence of home taping highest among 14 to 15-year-olds (39 percent). The rate of taping was substantially lower among the 10 to 13-year-olds (27 percent), while among older teens (32 percent) and the 18 to 29 age group (32 percent) the rate was the same. It then gradually declined with age (see table C5-2).

<sup>21</sup>Warner Communications Inc., op. cit., footnote 17.

<sup>22</sup>The Roper Organization, op. cit., footnote 8.

<sup>23</sup>Yankolovich, Skelly, & White, Inc., op. cit., footnote 9.

The OTA survey found for three cohorts is essentially the same: 81 percent of 10 to 13-year-olds, 78 percent for 14 to 15-year-olds, and 82 percent for 16 to 17-year-olds. The prevalence of home taping had increased by more than twofold in each of these groups since 1979 (table C5-2).

The increase in taping among older persons since 1979 was not so dramatic – it was on the order of a 50-percent increase. One exception was the group aged 60 and over. Although taping was fairly rare (11 percent), it had more than doubled compared with the proportion (4 percent) found a decade ago (table C5-2).

It is notable that the prevalence of home taping had always been higher among current buyers of recorded music. The 1978 Warner survey found that the rate of past-year taping was 32 percent among persons who had purchased recorded music in the past year compared with 21 percent among all persons aged 10 and over. A decade later OTA found that the rate of past-year taping was 53 percent among past-year purchasers of recorded music, compared with 41 percent of all persons aged 10 and over. In both cases this meant that about three-quarters of past-year tapers were also past-year music buyers. But the proportion of tapers who were not buyers increased – from approximately 20 to 25 percent – over the past decade (see table C5-4).

A person may make a home tape of prerecorded music either by recording music played on TV or radio or by directly copying a prerecorded format (record, tape., or CD). This report refers to the former as broadcast taping (although some taping may occur from cable transmission), and to the latter as taping from a prerecorded format.

### ***Home Taping From Broadcast Formats***

Nearly half (45 percent) of the nationally representative sample of persons aged 10 and older reported that they had made an audiotape of music from radio or television at some time in the past (see table C5-5).

Of the total sample, 27 percent taped music from radio and television in the past year. These past-year broadcast tapers included a majority of persons aged 10 to 14 (64 percent) and 15 to 19 (67 percent). By contrast, the rate of past-year broadcast taping was 41 percent for those aged 20 to 24, 27 percent for those aged 25 to 29, and 20 percent for those aged 30 to 34. The survey data strongly suggested that broadcast taping, while not limited to the teen-age years, was far more characteristic of teens than of older persons (see table C5-6).

Those whose most recent broadcast taping occurred within the past month were asked on how many occasions, in all, they had made audiotapes of music in the past month. These occasions of taping were then summed across the sample. There were a total of 713 occasions in the previous month of taping from radio or television. This analysis put the role of teenagers in broadcast taping in stark relief. Persons aged 10 to 14 accounted for 33 percent of broadcast-taping occasions, while persons aged 15 to 19 accounted for another 31 percent (see table C5-9).

An estimated total of 850 tapes were made in the 713 taping occasions in the past month.<sup>24</sup> The survey questions did not assess how much tape was actually filled on these occasions. Thus, it was safer to describe these as

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<sup>24</sup> Respondents who were not sure how many times they had taped or how many tapes they had used were given a conservative score of 1 for the missing values.

850 “tapings” (i.e., tapes used to record one or more musical selections) from radio and television. They were not equivalent to the number of blank tapes used or number of albums copied. A later section will consider the proportion of full albums to individual selections recorded in these tapings.

As would have been expected from the earlier survey findings on taping occasions, the bulk of broadcast tapings were made by teenagers. The 10 to 14-year-olds accounted for 37 percent and the 15 to 19-year-olds accounted for another 27 percent of broadcast tapings in the past month (see table C5-10).

### ***Home Taping From Prerecorded Formats***

Half (50 percent) of this nationally representative sample of persons aged 10 and over reported that they had taped music from a record, prerecorded cassette, or CD at some time in the past. The lifetime prevalence of home taping from prerecorded formats was thus slightly higher than the lifetime prevalence of broadcast taping (45 percent) discussed in the previous section. It should be noted that this estimate of home taping from prerecorded sources did not include the copying of homemade tapes.

Of the total sample of persons aged 10 and older, 28 percent had taped music from records, prerecorded cassettes, or CDs within the past year. A majority of persons aged 15 to 19 (65 percent) and substantial minorities of those aged 10 to 14 (42 percent) and 20 to 24 (45 percent) copied prerecorded music within the past year. Similar rates of taping were found among 25 to 29-year-olds (31 percent) and 30 to 34-year-olds (35 percent). The rate declined further to only 20 percent among the 35 to 64-year-olds, while the rate of past-year taping among the over-65 age group was nearly nonexistent (4 percent) (see table C5-12).

Those who had taped from a prerecorded format within the past month were asked on how many occasions they had taped music from records, tapes, or CDs in the past month. These occasions of past-month taping were then summed across the sample. Respondents reported a total of 301 occasions of taping in the past month. The survey findings continued to confirm the major role of teenagers in music copying. Persons aged 10 to 14 (24 percent) and 15 to 19 (21 percent) were responsible for nearly half of the occasions of taping from prerecorded formats in the past month (45 percent). Note that this was a substantially smaller share of prerecorded music copying than the 63 percent of past-month broadcast copying that they accounted for (see previous section). An estimated total of 736 tapes were made in the 301 taping occasions in the past month by this nationally representative sample of 1,501 persons aged 10 and over. Once again, since the OTA survey did not assess how much tape was actually filled on these occasions, it was safer to describe these 736 as tapings (i.e. tapes used to record one or more music recordings) from records, prerecorded cassettes, and CDs. As would have been expected from the earlier survey findings on taping occasions, teenagers accounted for the majority of tapings made from records, cassettes, or CDs. Tapes made by 10 to 19-year-olds accounted for 56 percent of all tapes made from prerecorded formats in the past month (see table C5-17).

### ***Total Taping Estimate***

SRBI used “past-month” data to estimate total annual taping in the U.S. population. Their “corrected” projections were about 700 million broadcast tapings and 600 million tapings from prerecorded sources per year.

OTA developed alternative estimates of annual taping that used a yearly frequency method similar to that used to project annual

purchases.<sup>25</sup> Using data on “past-year” tapings from tables C5-6 and C5-7 and from tables C5-12 and C5-13, OTA estimated that there were approximately 439 million broadcast tapings and 578 million tapings from prerecorded music formats in the past year (see table 6-2 for a summary of the OTA and SRBI estimates). The survey data supported a broad *range* of estimated values, depending on the data items and methods used. It is important to remember that both the SRBI and OTA estimates were of “tapings,” not of full tapes or album equivalents.

## PROFILE OF THE HOME TAPER

The survey findings allowed OTA to classify the sample population into one of four mutually exclusive categories of home taping of music. The largest category was those who had not taped music from radio, television, records, audiotapes, or CDs in the past year. Sixty-one percent of the population aged 10 and over fell into that category.

The remaining 39 percent of the population had made audiotapes within the past year.<sup>26</sup> Of these, those who taped only from radio or TV represented 11 percent of the sampled population, those who have taped only from records, cassettes, and CDs represented 12 percent of the population, and those who have taped from both broadcasts and recordings in the past year represented 16 percent of the sampled population (see table C5-19).

Table C5-19 shows the demographic characteristics of these four groups. Both 10 to

14-year-olds and Blacks had high taping profiles that included a high proportion of broadcast taping. While income did not seem to be a major factor in home taping, there appeared to be a higher rate of taping among those with incomes of over \$50,000. These income groups were also less likely to be broadcast tapers.

What may be more important in understanding the past-year tapers is how music taping relates to other music-listening characteristics. The survey showed that the past-year music taper had a greater interest in music than the nontaper. The proportion of those who considered music listening extremely important increased from 16 percent of those who had not taped music in the past year to 35 percent of those who had taped from radio and television only, 23 percent of those who had taped from prerecorded formats, and 45 percent of those who had taped from both broadcasts and prerecorded formats in the past year (see table C5-20).

As a result, the music taper listened to more music, on average, than did the nontaper. Only 18 percent of nontapers listened to 20 or more hours of radio in the past week. By contrast, the proportion of music tapers listening to 20 or more hours of radio was 34 percent for broadcast tapers, 27 percent for those who taped recordings only, and 39 percent for those who taped both broadcasts and prerecorded formats. Music tapers also listened to more music on records, tapes, and CDs in the past week than did nontapers. The proportion of respondents reporting not listening to recorded music declined from 57 percent of nontapers, to 30 percent of broadcast tapers, to 20 percent of those who taped

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<sup>25</sup>See discussion of purchase estimate and footnote 19.

<sup>26</sup>There was a slippage between the 41 percent of the population who said that they had taped from a radio, television, records, cassettes, or CDs in the past year, and the combined estimates of 39 percent of persons who said that their most recent taping from radio and television or their most recent taping from records, tapes, or CDs occurred within the past year. Given the potential difficulties of classifying an activity that occurred about a year ago, OTA considered the differences in independent reports to be minimal.

recordings only, to 13 percent of those who taped both recordings and broadcasts. Simply stated, the majority of those who did not tape music did not listen to recorded music (see table C5-20).

Considering the interest of the music tapper in listening to music and the frequency with which he listened to recorded music, it is not surprising that the survey found that the music tapper was also the music purchaser. As the table shows, over half (53 percent) of those who had purchased any records, prerecorded cassettes, or CDs in the past year had also taped music from radio, television, records, tapes, or CDs. This figure actually understated the relationship of music taping and purchase, however. The total number of tapings made from prerecorded formats in the past month suggested that 56 percent of those copies were made by persons who had purchased a record, prerecorded cassette, or CD in the past month. Indeed, 88 percent of past-year music tapings from recordings were made by persons who had purchased records, cassettes, or CDs in the past year (see table C5-23).

The survey findings clearly indicated that music tappers were also music purchasers, and vice versa. Moreover, they also suggested that frequent tappers also tended to be frequent buyers. This association did not necessarily mean that home music taping stimulated buying prerecorded music or that the purchase of prerecorded music might not have been more frequent without taping. It did, however, indicate that any actions directed at music tappers would affect primarily the purchasers of recorded music.

### ***Album v. Selection Taping***

The type of taping done by home tappers determined whether they were producing an exact copy of a *commercially available product*. This issue revolved around whether home tappers were primarily creating customized se-

lections of music, which did not exist in the current marketplace, or whether they were duplicating albums that could be purchased.

The survey findings helped to clarify this issue. The broadcast taping of music from radio and television was almost exclusively nonalbums. The survey responses suggested that only 8 percent of the most recent broadcast tapings involved the copying of an album, while another 15 percent might have involved a mixture of albums and selections. A majority of 56 percent reported that they were taping only singles or selections on that occasion (see table C6-1).

By contrast, album taping was much more widespread in the taping of recorded music. Among those who had taped records, cassettes and CDs in the past year, 70 percent reported taping one or more complete albums on their most recent taping occasion. As can be seen in table C6-3, the group with the highest proportion of album taping was the 10 to 14-year-olds, while the over-65 group had the lowest proportion. The variation by age was fairly small, however.

Cross-tabulating album taping with selection taping for the most recent taping experience from prerecorded formats enabled OTA to classify the population in terms of the contents of the last tape they made. Approximately half (48 percent) of the last home tapings of prerecorded music involved the taping of whole albums with no selections. This represent simple duplication of existing albums, either in their original or a different format. Another 21 percent of the most recent home tapings from prerecorded music involved the copying of whole albums in combination with selections from other albums or singles. The proportion of most recent tapings that represented selection taping, exclusively, was 21 percent. The remaining 10 percent of most recent tapings were only partially classifiable because of missing values on one or the other measures (see table C6-5).

### ***Source of Copy: Recording Format***

By definition, all current home taping is done onto an audiotape format, but there remains the question of the format of the original prerecorded material.

The survey found that half (49 percent) of those who had copied from prerecorded formats in the past year made their most recent taping from a record. Another 28 percent of the most recent tapings were from cassettes, while the remaining 18 percent of tapings were from CDs.

The format of the original material from which home tapes were made was quite different from the most recent purchase pattern seen earlier. Records represented 18 percent of most recently purchased recordings, but 49 percent of the recordings copied in the most recent taping. By contrast, the dominant format for buying prerecorded music—the cassette—represented only 28 percent of the most recent tapings from prerecorded format.

If the primary motivation for home copying was to obtain current releases without buying them, one would expect the same distribution of recorded formats copied as the distribution of formats purchased. This was not the case. It appeared rather that home taping was being done—at least in part—to convert recordings in other formats to the dominant playback mode. Since records and CDs cannot (usually) be played in cars and in portable playback equipment, it would appear that at least some home taping was being done to convert existing records to the more flexible format of audiotape.

### ***Source of Original: Own v. Others'***

All survey respondents who had copied from a prerecorded format in the past year were asked about the source of the original

from which they made the most recent tape—their own, a recording borrowed from household members or family, one borrowed from friends, or one obtained elsewhere. The question was asked separately for complete albums being copied and for individual selections being copied during the last taping session.

The survey found that a majority of home music tapers, who were taping one or more whole albums in their most recent taping, were using their own original record, tape, or CD to make the tape (57 percent). Moreover, another 7 percent of home tapers were using an album owned by another member of their household (3 percent) or their family (4 percent) (see table C6-10).

### ***Permanence of Tape Libraries***

Nearly three-quarters of the most recent home tapings of prerecorded music were made for the taper's own use (73 percent). Another 7 percent of these tapings were made for another member of the household. About one-fifth (19 percent) of most recent home tapings were made by the taper for someone outside the household. The incidence of taping for outsiders was highest among those aged 15 to 19 (27 percent) (see table C6-12).

The survey found that the vast majority of home audiotapes were made to keep. Sixty-nine percent of those who made a tape for themselves from radio or television in the past year reported that the last tape they made was to keep, not to use temporarily. Even more strikingly, 85 percent of those who made a tape for themselves from records, tapes, or CDs in the past year reported that the last tape they made was made to keep. This is in sharp contrast to the pattern for videotaping, which will be discussed further in a later section.

### ***Reasons for Taping***

When asked in an open-ended fashion why they had made their most recent tape from a prerecorded format, the respondents' single most common explanation — given by one-fifth (21 percent) of the sample—was that they had wanted a tape for their car. In addition, 3 percent wanted a tape for their walkman-type player, while another 2 percent wanted to be able to play the recording on an unspecified type of tape player. In other words, over a quarter of the most recent copies of prerecorded music were made to play the recording on other playback equipment belonging to the taper (see table C7-1).

Making a tape to give to someone else was another common motive for taping. One in five tapers reported making the most recent tape to give to a friend (14 percent) or a family member (6 percent). By contrast, only a smaller proportion explained the most recent tape in terms of making a selection tape (6 percent) or saving money/avoiding purchase (6 percent).

This is not to say that economic concerns were not a factor in home taping. The majority of home tapers (57 percent) indicated that they could have purchased the same material, if they had so wanted. Of these, a majority (63 percent) said that the fact that taping was less expensive than purchasing was an important factor in their reason for making their most recent tape. When combining the proportion of tapers who could have bought the material with the proportion who considered saving money an important factor, the survey findings suggested that the fact that taping was less expensive than buying was important in about 36 percent of the most recent tapings (see tables C7-2 and C7-3). Naturally, answers to these questions did not prove the extent to which the opportunity to save money actually influenced respondents' behavior.

The most recent taping was selected as the most valid single measure of the nature of

home taping. To gather additional information on consumer motivation, however, the survey asked respondents (aged 16 and over) who had taped from a prerecorded format in the past year whether they had ever made a tape for one of six reasons are listed in table C7-4. Those who had made a tape for one of these reasons were asked when they had last made a tape primarily for that reason. If the most recent occasion was within the past month, they were asked the number of times they had made a tape for that reason.

The most common reason for home taping from prerecorded formats in the past month, according to the sample of tapers, was to permit the taper to shift a recording he owned to other playback equipment. One-third of occasions reported in the past month (34 percent) was mainly to “make tapes of their own records, cassettes, and CDs so that they can play them in their car, Walkman, or elsewhere.” This was consistent with the leading reasons given for the most recent taping.

Taping selections “to create their own customized program of music on tape,” which was attributed by adults to comprise 23 percent of past-month tapings, emerges as the second most common factor in home tapes made by adults. A little less than one-fifth (18 percent) of the taping occasions in the past month are attributed by adult tapers to a desire “to protect the originals from damage and keep them from wearing out.” By contrast, only 13 percent of music tapings by adults from prerecorded formats were attributed to making tapes of friends' recordings “so that they don't have to buy them” (see table C7-4).

## **COPYING AND THE RECORDED MUSIC MARKET**

### ***Sales Displacement of Home Taping***

Exact measurement of the amount of prerecorded music sales displaced by home

taping was beyond the scope of this survey. However, the survey does provide an opportunity to explore the relative proportion of home tapings that might be displacing sales, compared with those that do not. Chapter 7 discusses the use of the survey data to develop a range of estimates of the extent to which homemade tapes displace sales.

The survey found that 57 percent of those who taped from a prerecorded format in the past year thought that they *could* have bought the material if they had wished (see table C7-2). There was no clear pattern by age, sex, race, or income for the willingness to purchase in the absence of taping. Presumably, then, the willingness to buy depended more on value to the individual of the particular item being taped (see tables C8-2, C8-3).

One factor in the value of the homemade tape to the tapper appeared to be its intended end use. A majority of tappers who were making the tape for themselves (53 percent) said that they would have purchased the material if they could not tape. By contrast a minority of those making the tape for other household members (32 percent) or other persons (42 percent) said that they would be willing to purchase if they could not tape it. This suggests that taping for other people is a marginal activity for most tappers.

Those who would not buy, even if they could not make a tape, were asked why they would not purchase the material. Three answers were given by two-thirds of this group. First, 29 percent of nonbuyers said that they already had a copy of the material – they did not need another copy. For these, the tape appeared to have been a convenience, an extra copy for protection or use elsewhere, but not worth paying for. Second, 23 percent said that they could not afford to buy it. Another 19 percent said they would not buy the recording because

they did not like it enough or were not interested enough to pay for it.

As mentioned earlier, 57 percent of those who taped from a prerecorded format in the past year thought that they could have bought the material if they had wished. Of those, about half (49 percent) said that they would have bought it, if they had been unable to tape (see table C8-2). In 77 percent of cases in which the tapper could have purchased, the tapper said that if he had bought the recording, it would have been in addition to other recordings purchased, rather than in place of them (see table C8-5). With these three sample proportions combined, ( $0.57 \times 0.49 \times 0.77$ ), the survey data would suggest that about one-fifth (22 percent) of the most recent tapings from prerecorded formats displaced sales of prerecorded music that might have otherwise been made, if the respondent could not tape; however this estimate may be excessively high.

It is important to note the perils of using hypothetical questions (such as “Would you have purchased that item if you were unable to tape?” or “Would it have been in addition to other recordings you have purchased?”) in surveys. Typical marketing research experience is that only about half (or even fewer) of the people who answer affirmatively to hypothetical questions actually engage in the behavior being studied.<sup>27</sup> Thus, any undiscounted estimate of displacement based on a series of questions like these should be considered an upper bound.

Such an analysis based on hypothetical questions (and a small portion of the sample population) was only meant to be suggestive and to give an upper bound to possible consumer behavior. If the analysis was correct, a sales displacement rate of possibly 22 percent, but probably much lower, could be projected

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<sup>27</sup>See SRBI report, *op. cit.*, footnote 14, pp. 102-103, for a discussion of the use of hypothetical questions.

for record industry sales. On the other hand, this rate also suggested that if people were unable to make tapes, over three-fourths of the tapes that would have been made would not be replaced by sales of prerecorded music.

### ***Stimulative Effects of Taping***

Some have argued that home taping may stimulate sales of prerecorded music, even if it displaces some sales. The accurate measurement of sales stimulation in a retrospective interview was even more difficult than the estimate of sales displacement. The survey did suggest the likelihood of a stimulative influence of home taping on music purchases, but the data did not support a quantitative estimate of its magnitude.

Home tapes may broaden audience awareness of performers and recordings in the marketplace. Hearing a piece of music or a performer on a homemade tape may not “cause” a person to make a purchase, but the home tape must be considered to have some promotional value. Approximately one-quarter (24 percent) of past-year purchasers reported that they had heard the recording or performer of the recording that they most recently purchased on a tape made by themselves or someone else before their purchase (see table C8-11.).

The audience reach of homemade tapes is clearly not that of either radio or prerecorded music formats. Nonetheless, more recent purchasers reported having heard the performer or recording that they most recently purchased on homemade tapes than in concert (21 percent). It is also important to note that having heard the performer or recording on homemade tape did not discourage subsequent purchase in these cases (see table C8-11).

A second possible stimulative effect of home taping was related to purchasers’ intent

to tape when they bought records, tapes, or CDs. Those who had purchased a recording in the past year were asked whether they had expected to tape from his most recent purchase, at the time they bought it. One out of seven past year buyers (14 percent) said that at the time of their most recent purchase of a record, tape, or CD, he expected to tape from the recording he purchased (see table C8-13).

Survey findings point to an interesting relationship between the purchase of recorded music with an expectation of taping and the format of the material purchased. Although prerecorded cassettes are the most frequently purchased, only 8 percent of those buying a cassette on their most recent purchase bought with the expectation of copying it. By comparison, 16 percent of those who bought a CD report that they bought the CD with the intention of copying it. Most dramatically, over a third (35 percent) of those who purchased a record on their most recent buying occasion bought the record with the expectation of copying from it (see table C8-13). This is consistent with earlier findings that records are the most common format from which music is taped.

How many persons have actually taped from their most recent purchase? The survey found that among past-year purchasers, about 1 in 10 (11 percent) had made a tape from his most recent purchase by the time of the interview (see table C8-14). It is notable that fewer purchasers had actually made a tape (11 percent) than had intended to make a tape when they bought the recording (14 percent). When cross-tabulating purchase intent with actual taping, the survey found only half (51 percent) of those who intended to tape their most recent purchase had taped it by the time of the interview. By contrast, only 4 percent of those who had not expected to tape from their most recent purchase reported that they had taped from it by the time of the survey.

### ***Recording of Noncopyrighted Material***

It should not be assumed that taping music from broadcasts or prerecorded formats is the main or only use of home audio recording technology. The survey found that 62 percent of respondents who had used tape recorders in the past year had taped material other than prerecorded music. This figure translated into 32 percent of the entire sample of persons aged 10 and older who used tape recorders to record noncopyrighted material, such as family members' voices, reports, dictations, and messages (see table C9-1.) As with the recording of prerecorded music, younger people were most likely to use an audio recorder to record noncopyrighted material.

In comparing the number of reported occasions of taping music and taping non-



*Photo Credit Office of Technology Assessment*

Some tapes are of family members' voices.

copyrighted material, the survey findings suggested that nearly three in four (73 percent) of taping occasions in the past month involved taping things other than prerecorded music. In other words, in three out of four times a tape recorder was used in American households in the past year, it was used to tape voices, messages, music played by the respondent, and other material (see tables C9-3, C9-4, and C9-9).

While the survey suggested that home audio recorders were used more frequently to tape material other than prerecorded music, this did not mean that most homemade tapes contained noncopyrighted material. The nature of the two types of recording is considerably different because recordings of noncopyrighted material vary widely in length and type. The most dramatic example is the recording and rerecording of a telephone answering machine message. This survey did not attempt to measure the amount of space in homemade audiotapes that contained prerecorded music as opposed to noncopyrighted material.

The survey did suggest that people make little discrimination in the grade of blank tapes they used. Only about a quarter (23 percent) of those making tapes of noncopyrighted material and about a third (32 percent) of music tapers knew what grade of audiotape they used to make their most recent recording. Among those who did know what kind of tape they were using, a somewhat higher proportion of those taping noncopyrighted material (38 percent), compared with music tapers (27 percent), reported using a normal bias grade of blank tape.

### ***Taping Technology and the Home-Tape Inventory***

The survey documented the presence of multiple tape player/recorders in most households, but did not determine the purpose for

which they were bought. Moreover, many households had one or more recorders with dual-cassette and speed-dubbing functions, which facilitate the copying of prerecorded music.

The survey found relatively little relationship between the presence of a dual-cassette recorder in the household and the number of home audiotapes made by the respondent. Among those who owned no audiotapes made by themselves, nearly a quarter [24 percent] had cassette recorders with dual-cassette drives. The availability of advanced copying features did not appear sufficient to generate home taping among those who owned them (see table C10-6).

The amount of homemade audiotapes that the respondent owned did not seem to be related to the presence or absence of a dual-cassette recorder. The incidence of dual-cassette recorders was basically the same — about half for those reporting 1 to 10 homemade tapes in their collection (51 percent), 11 to 25 tapes (50 percent), and 26 to 50 tapes (48 percent). Of those with over 100 homemade tapes, 65 percent had dual cassettes, and those with 51 to 100 tapes had a rather low 42 percent (see table C10-6).

A similar pattern was found between the number of homemade audiotapes in a respondent's collection and equipment with fast-dubbing features. Restricting the analysis to those persons with dual-cassette recorders, the survey found that the proportion of persons with dual recorders included 59 percent of those who have no homemade tapes at all. More important, the rate of fast-dubbing capability increased from 62 percent for those with 1 to 10 homemade tapes to 84 percent for those with 100 or more. The proportion with fast dubbing did increase among heavy tapers, but not dramatically (see table C10-7).

The data suggested that the technology of fast dubbing and dual cassettes did not seem to be driving home taping. Rather, their distribution looked more like an incidental re-

sult of the number (and possible recency) of tape player/recorders in the household. This suggested that playback technology, rather than copying technology, has driven home taping.

## HOME VIDEOTAPING

The survey attempted to determine whether the behaviors studied in some detail in the area of music taping were similar to the general pattern of other forms of home taping, specifically videotaping.

The videocassette recorder (VCR) was the second most prevalent form of consumer recording technology. While 94 percent of the sample population had audiocassette decks, 69 percent had one or more working videocassette decks. Thus, more than two-thirds of the population had the ability to record video programming from broadcast or cable television. Indeed, a majority (59 percent) of VCR owners reported recording one or more programs from television in the past month. More than a quarter of VCR owners (28 percent) reported five or more taping occasions in the past month, that is, more than once a week on average.

The survey findings suggested that the majority of programs taped from television were movies, sporting events, and soap operas, with relatively fewer prime-time network programs. The majority of those taping television programs (62 percent) reported that their most recently made videotape was made to be used only temporarily, rather than to keep. The nature of the programming appeared to have a major impact on the permanence of the recording. Most of those taping sporting events, comedy or drama series, or talk shows made the tapes for temporary use. But substantial portions of those taping concerts, music videos, movies, mini-series, documentaries, cartoons, and educational programs made the tapes to keep (see tables C12-10 and C12-11.)

### ***Videotape Copying***

Although television taping was common among VCR owners, copying videotapes was not. Only one in five VCR owners who had acquired a videotape in the past year (20 percent) reported ever having copied a videotape, either prerecorded or home recorded. The proportion of VCR owners who had copied a tape in the past year was only about 1 in 10 (12 percent) (see table C12-12). Tape copies accounted for only 2 percent of the most recently acquired videotapes, compared with 23 percent of those that were purchased by the respondent, and 54 percent recorded from television (see table C12-8).

Unlike the copying of prerecorded audio formats, only a minority of the videotapes that were copied belonged to the respondent or his family. Nearly a quarter (23 percent) of the most recently copied videotapes were obtained from a video club or store. The bulk (42 percent) of originals, however, were obtained from friends. The survey suggested a modest level of exchanging videotapes among friends to make copies, as well as copying videotapes for friends. When asked whether they could have purchased the videotape they copied if they had wanted to, a little over one-third (35 percent) thought that they could have bought the tape, while 57 percent thought that they could not have, and 8 percent were not sure (see table C12-19). Of respondents who made a videotape copy in the past year, 70 percent reported that they made the copy with the intention of keeping it.

### ***Comparison of Video- and Audiotaping Behaviors***

While the pattern of television home recording in general was consistent with the time-shifting explanation, this applied to very little of radio recording. Most videotapes from television were made for temporary use – that is, to be viewed once, or a few times, at the

convenience of the owner. The survey data showed a clear difference in the proportion of tapes made with the intention of permanent recording from radio (69 percent) and television (35 percent). This difference may have reflected the proportion of programming in the two media that had permanent value to the consumer. As noted above (tables C12-10 and C12-11), a higher proportion of *music* programs were made to keep (80 percent). Thus, videotaping of concerts, and musical entertainment seemed to be more similar to the pattern of audiotaping.

One goal of the survey was to determine whether there was convergence between the populations of audiotape copiers and videotape copiers. Table C12-21 shows the responses of music tapers (who had acquired a videotape in the past year) to the question, “Have you ever copied a videotape?” The survey found some relationship between persons who copied videotapes and those who copied prerecorded music. As noted earlier, 20 percent of the sample population (17 and older) who had acquired a tape within the past year reported having ever copied a videotape. As shown in the table, higher proportions of respondents who tape from prerecorded formats (30 percent) and from both radio and prerecorded formats (39 percent) reported having copied a videotape.

Despite the survey evidence of increased likelihood of videotape copying among those who audiotape, this tendency was limited. Note that among those who had taped music both radio and from prerecorded formats in the past year, 60 percent had never copied a videotape. By contrast, the 12 percent of non-music tapers who had made a videotape represented over onethird (35 percent) of all videotape copiers.

Analyzing the most recent videotape acquisition tended to confirm this pattern. The proportion of most recently acquired videotapes that were recorded from television was somewhat higher among those who had audiotaped

music in the past year (59-68 percent) than among those who had not (49 percent). Given the greater number of nonmusic tapers, however, the survey found that the majority of those whose most recent videotape acquisition was recorded from television had done no music audiotaping in the past year. There seemed to be little difference between music tapers and others in terms of the proportion of copied tapes (see table C12-22).

Hence, the survey findings suggested that home video copying and home audio copying were not done by the same people, for the same reasons, under the same conditions. There was some overlap between the two behaviors, but they were substantially different.

## PUBLIC ATTITUDES

### *Attitudes Toward Taping*

The survey found that most members of the public considered themselves to be unfamiliar with copyright law, but they nevertheless had clear-cut ideas about the acceptability of home taping. The majority of the public (76 percent) considered itself only slightly or not at all informed about copyright laws and their application to home taping (see table C11-1). The survey did show a relationship between taping and familiarity with copyright law. A higher proportion of past-year tapers (32 percent) than nontapers (20 percent) considered themselves extremely or quite familiar with the law. Perceived familiarity with copyright law did not reduce the likelihood of home taping, nor did lack of familiarity with the law increase it.

To learn what kind of norms existed in the area of home taping, survey respondents were asked to classify certain behaviors on a 7-point scale of personal acceptability. A score of 7 meant that the action was perfectly acceptable. A score of one meant that it was not at all acceptable. The specific wording of the question appears in table C11-2.

When asked about the acceptability of making a taped copy “for your own use of a record, tape, or CD that you own,” a majority (57 percent) gave a score of 7 – perfectly acceptable. Moreover, 75 percent of respondents ranked this behavior on the acceptable side of the scale (i.e., 5 to 7). Only 11 percent of the public ranked copying of records, cassettes or CDs now owned for his own use on the unacceptable side of the scale (see table 11-2).

The public acceptability of many forms of home music taping was even more clearly seen in considering situations in which the owner of the original materials did not retain the copies of the prerecorded music. When asked how acceptable they considered “making a taped copy to give to a friend of a record, cassette, or CD that you own,” a majority of the sample (63 percent) rated the behavior as acceptable (i.e., 5 to 7 on the scale), while 40 percent rated it perfectly acceptable. Responses concerning the acceptability of taping borrowed materials were virtually identical, and it apparently did not matter to respondents whether the taper was copying whole albums or selections (see table C11-2).

The only form of taping that the survey found unacceptable to the public, among the five general types explored, was taping for gain. When asked about the acceptability of “making a taped copy to sell of a record, cassette, or CD that you own,” three-quarters (76 percent) of the respondents rated it as not acceptable (1 to 3 on the scale); indeed, two-thirds (67 percent) found it not at all acceptable.

There were differences in the overall rating of the acceptability of the various forms of taping behavior that depended on the respondent’s taping behavior. The average acceptability rating of each of the five actions tested was a full point higher among respondents who had made tapes in the past year than it was for persons who had made no music tapes. Nevertheless, among nontapers the average acceptability rating of taping one’s own

originals for personal use was 5.6 — on the acceptable side of the range. Behaviors of making copies of borrowed materials or giving copies to others was viewed by the nontaper as being on the edge of the acceptable range (4.6 to 4.8). Only taping to sell was rated as unacceptable by nontapers (see table C11-3).

It is also instructive to note the attitudes of those who purchase prerecorded music within the past year. They considered all of the copying situations described, except for taping to sell, as acceptable forms of behavior. Those who were more critical of music copying were respondents who had not bought any recorded music in the past year.

These survey findings clearly showed an underlying set of social norms that were supportive of home taping of music. They appeared to reflect a set of feelings about the rights of ownership. There seemed to be agreement among the public that a person who purchased a recording had the right to make copies for his own, or a friend's use. The public did, however, draw the line at using home taping for profit, i.e., making copies to sell. This survey finding paralleled qualitative findings from focused group discussions in which tapers and nontapers agreed that taping "to save money" was acceptable, but taping "to make money" was wrong.

### ***Fairness of Taping***

Respondents were also asked their opinion concerning the fairness of the present situation for each of three affected parties—the recording industry, song writers and performers, and the average consumer. The specific question appears in table C11-5.

There did not seem to be a consensus about the fairness of home taping to any of the affected parties. Slightly more of the respondents felt that current practices were fair to the artists and industry than felt that they were unfair, but nearly a quarter had no opin-

ion. Indeed, nearly a quarter had no opinion on the fairness of current practices to the average consumer. As might be expected, tapers tended to see the current practices of home taping as fairer to everyone than did the nontapers. Similarly, buyers of recorded music tended to see the current situation as fairer than did nonbuyers. No one, however, seemed to see fairness as a clear enough issue to come down on one side or the other for any of the parties.

### ***Attitudes Toward Policy Changes***

A number of alternatives have been proposed for either discouraging home copying of prerecorded music or compensating copyright holders. To gauge public opinion concerning a range of alternative directions for dealing with home taping, the adult (17 or older) members of the sample were asked: "Now using the same scale running from one, meaning not at all fair, to 7, meaning perfectly fair, I'd like to know how fair each of the following suggestions would be, or don't you have an opinion?"

A majority of the survey respondents considered the alternatives of limiting recording technology as unfair. A majority (56 percent) considered the suggestion that "new audio recorders should be built so they can't copy commercial recordings" as being in the unfair range (i.e., 1 to 3) with 42 percent rating the option as not at all fair. Similarly 55 percent found it unfair that "audio recordings should be made so they can't be copied." This included 41 percent who considered the approach not at all fair (see table C11-8).

The suggestion of compensating copyright holders for losses due to home taping through new fees on products also met with disapproval from a majority of the respondents. Fifty-seven percent considered it unfair that "a fee should be charged on audio recorders and paid to copyright holders to compensate

them for home taping.” Once again, 42 percent considered this approach as not at all fair (see table C11-8).

The suggestion that “a fee should be charged on blank audiotapes and paid to copyright holders to compensate them for home taping” also met with majority disapproval. Nearly 6 in 10 (59 percent) of the sample of adults considered this suggestion unfair, with 48 percent considering a fee on blank tapes not at all fair.

The majority of the respondents thought it fair that “current home taping practices

should be left unchanged.” The survey found that 63 percent of the national sample of adults rated this approach as fair, with 46 percent rating it as perfectly fair.

It is noteworthy that none of the alternative approaches of limiting recording technology or imposing new fees seemed to have an identifiable constituency among the public. In general, tapers, purchasers of prerecorded products, and nontapers seemed to feel that it was fair to leave current home taping practices unchanged (see table C11-9).