

PROSPECTS FOR MEASURING THE CHILD RADIO AUDIENCE IN THE U.S. USING THE SEVEN-DAY PERSONAL DIARY METHOD

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Summary

In the fall of 1993, The Arbitron Company conducted a special diary pilot study to measure radio listening among children 2-11 and the adults in their households. Jointly sponsored by Arbitron and the Children's Satellite Network (CSN), the study included a detailed methodological evaluation to assess the feasibility of ongoing children's measurement using standard diary methods. The pilot study achieved a response rate of nearly 60%, good returned-diary usability rates, and near-perfect representation of children in the in-tab sample relative to the study universe.

Postsurvey interviews with adults and children age 8-11 in the study households yielded positive feedback on respondents' experiences with the survey. Interview results suggest parents did provide the support needed to help children properly complete their diaries, and that the large majority of in-tab diaries provided a reasonably complete record of children's total listening. Based on a detailed evaluation of study results, Arbitron's Methods Research department recommended that the "parent-assisted" diary method be continued for future children's radio listening surveys.

Introduction

From the time persons-based radio ratings were introduced by Arbitron in 1965, the measurement of commercial radio audiences in the U.S. has been almost exclusively limited to persons age 12 and older, generally excluding children under 12. In fact, all survey research concerning radio usage among the U.S. child population has been extremely limited.¹ However, the recent surge in the U.S. birthrate has resulted in the largest potential child radio audience since the early 1960s. This factor, and a desire for alternatives to television for reaching children, has fueled a growing interest among broadcasters, advertisers and advertising agencies in child-oriented radio formats.

A factor in the commercial viability of such formats will be the availability of credible, systematic ratings for children under 12. The predominant survey method for collecting radio listening data is a telephone-placed, mail-delivered, self-administered diary covering a one-

week period. In the U.S., this method has been developed and refined over nearly three decades and is widely accepted as an effective technique for capturing total radio listening at home, in the car and in other locations.

For a variety of reasons, the technique has not previously been tested with children under 12, and no alternative methods have been systematically used to measure children's listening in the U.S. Although seven-day personal radio diaries have been successfully used with children in several other countries (e.g., Canada, the United Kingdom, Australia), acceptance of this method for children's measurement in the considerably more complex U.S. radio environment requires new methodological investigation.

This paper summarizes research findings and recommendations from a fall 1993 methodological pilot study designed to evaluate the use of Arbitron's standard seven-day diary method for measuring radio listening among children age 2-11, and parents and other adults age 18 and older in households with children. Cosponsored by Arbitron and the Children's Satellite Network (CSN), the Family Radio Listening Pilot Study was designed to fulfill four major objectives:

- Develop and test a survey method that is appropriate for ongoing children's radio measurement, effective as a buying and selling tool and affordable for local-market use;
- Survey radio listening for children 2-11 and their parents, guardians, or other adult household members in the Minneapolis, Minnesota, Metro survey area (the home of CSN's flagship "Radio AAHS" child-formatted station);
- Project the survey results to a custom-defined universe in Minneapolis consisting of children 2-11 and adults 18+ living in households with children 2-11; and,
- Produce standard cume and average-quarter-hour (AQH) ratings with quality consistent with standard Arbitron Syndicated Radio Market Reports.

This report deals with the methodological issues and questions surrounding the use of Arbitron's standard radio diary method for children's measurement. Will the

¹ Christenson, P.G., P. DeBenedictis, and T.R. Lindlof (1985) "Children's use of audio media." *Communication Research* 12: 327-343.

method achieve response rates comparable to those achieved with a 12+ survey population? Will the method yield proportional in-tab samples for children under 12? How will respondents themselves rate the quality and completeness of the child diaries and other aspects of their experience with this method?

The use of the diary method for this study was not a foregone conclusion. Several alternative survey methods were actively considered for the pilot. These were ultimately rejected for a variety of reasons. For example, personal interviews were rejected as too costly for ongoing local market measurement, especially when seven-day cume estimates are required. Telephone interviews were rejected as inappropriate for younger children due to parental safety concerns, and our prior experience with this approach indicated parents would be unable to report total child listening "secondhand." This was considered especially problematic for children's "away-from-parents" listening, which could occur while at school, in day care, or in other settings where parents were not present.

The diary method was regarded as a favorable choice for three reasons. First, it presented no safety threat to young children. Second, the diary has been widely used as a tool for measuring children's television viewing down to age 2. Third, in addition to supporting the collection of high-quality AQH and cume data for a full week, the diary offered the potential to "follow" children while they are away from their parents — e.g., at school, day care, a friend's house — and thus more fully capture children's total radio exposure. (As is explained later, the latter benefit was not realized in the Minneapolis pilot.)

Methodological Evaluation

Overview of Study Methodology

The survey methods used for the Family Listening Study matched those in the standard Arbitron radio survey, with three exceptions:

- All sampled households were screened for the presence of children during the first telephone contact, and only households with at least one child age 2-11 (roughly one in four) were eligible for the study.
- Adults were asked to assist young children in completing the diaries, both over the telephone and in written material enclosed with the diary package.
- Higher diary premiums (\$2.00 per person versus the standard \$1.00), higher follow-up premiums (\$5.00 per household versus the standard \$1.00), and extra follow-up calls (three versus the standard one) were used to maximize cooperation rates.

All other procedures followed the standard Arbitron methodology, including advance telephone and mail contact, seven-day diaries mailed collectively for all eligible persons in households agreeing to the survey, and telephone and mail follow-up contacts during the survey week to stimulate high return rates. The standard Arbitron radio diary was used without modification.

To avoid biasing respondents' attitudes toward the child diarykeeping task, respondents were not informed of the special nature of the study and the focus on children's listening was not disclosed. Rather, respondents were told that the survey was for everyone age 2 and older, and that it was important to get completed diaries from everyone in the household — children, teens and adults. One diary was mailed for every person age 2+, although teen diaries were not used in calculating the final audience estimates.

After the diary survey, a random subsample of 50 study households returning at least one in-tab diary for a child 2-11 was recontacted and debriefed on their experiences with the survey. Interviews focused on one child diary per household. Parents and children 8-11 were asked to assess the completeness of the returned child diaries, the degree of difficulty associated with the child diary task, and other questions designed to provide feedback to the researchers on the appropriateness of the diary technique for children. Only parents or other knowledgeable caretakers were interviewed about children age 2-7. We did not attempt to interview children under age 8.

Sample Design and Survey Dates

The Family Radio Listening Pilot Study was fielded with a random sample of eligible households in the 11-county Minneapolis Metro survey area during the four-week period from October 7 through November 3, 1993. The survey population was defined as children age 2-11 and adults age 18+ residing in households with children. The sample target for the study was 400 in-tab (usable) diaries from children 2-11 and adults 18+ combined. Diaries returned from teens 12-17 did not count toward the in-tab goal but are included in our analyses of response rate, diary usability and in-tab proportionality.

Sampling proceeded in two stages: the screener stage and the survey stage. Screening was required to identify households with children in the target age group (about 26% of total Minneapolis households, based on 1990 Census data). The starting sample for the screener stage, composed of telephone numbers randomly generated using standard Arbitron and Metromail, Inc. RDD procedures, was stratified by county and zip code to ensure proportionate geographic representation. Screening was completed with 90.9% of total households in the starting screener sample.

Of the total screened households, 444 reported the presence of at least one child age 2-11 and were invited to take part in the survey. These 444 households compose the base of predesignated, eligible households included in the study sample, and thus the base for all response statistics reported below.

Findings

Pilot Methods Achieved High Overall Response Rate

Overall, cooperation at each stage of the survey was very good (Table 1). Among the 444 predesignated eligible

Consent rate	90.3%
(Eligible households)	(444)
Return rate	66.2%
(Diaries mailed)	(1,573)
Response rate	59.8%
(Eligible persons)	(1,744)

households, 401 (90.3%) consented to the survey during the advance diary placement call. Diaries were mailed to a total of 1,573 persons age 2+ in the consenting homes, an average of 3.9 per household (including teens). Of the total mailed, 1,043 (66.2%) were returned as usable or in-tab diaries. This consent and return performance yielded an overall response rate of 59.8%, well above the 45% to 50% range achieved with the standard survey in the test market over the preceding five years or so.

Usability of Returned Diaries Comparable to Syndicated Results

The usability rate among total diaries returned is a standard survey quality indicator used by Arbitron. Typically, about five percent to six percent of respondents return unusable diaries which are rejected during editing for one or more quality-related problems (e.g., incomplete, blank, returned too early or late, etc.). During methods testing, increases in the overall unusable return rate or the rate for specific problem categories can reflect problems upstream in the survey process.

Diary usability results for the Family Listening Study suggested no major problems in this area. Diaries for this study were processed with all standard Syndicated edit rules. Table 2 presents data on the unusable-diary return rates observed in the study for total persons 2+. On the base of 1,573 diaries mailed, the gross return rate (usables plus unusables) was 72.6% and the unusable return rate was 6.4%. Among the diaries returned for children 2-11 only, 93.0% were usable and 7.0% were unusable.

Gross Return Rate	72.6%
Usable Diaries Returned	66.2%
Unusable Diaries Returned ..	6.4%
Diaries Not Returned	27.4%
Total	100.0%
(Diaries mailed)	(1,573)

Pilot Study Delivered Representative Child In-Tab Sample

A major question at the outset of the study was whether the diary method could deliver representative in-tab samples for children. A low return rate for children 2-11 relative to that for persons 12+ could cause underrepresentation of children in the in-tab sample, and this would necessitate additional "weighting" of the child diaries to compensate. However, the percentage of children 2-11 in the pilot in-tab was in almost perfect agreement with the percent of children 2-11 in the Minneapolis Metro, with an overall proportionality index of 99 (see Table 3).

Demo Group	Pop%*	In-Tab%	Index
Children 2-11	37.0	36.5	99
Men 18+	20.8	24.0	115
Women 18+	24.0	29.4	124
Teens	18.2	10.1	56

*Minneapolis persons 2+ in households with children 2-11

Adults, both men and women, were somewhat over-represented in the sample, largely due to underrepresentation of teens (index = 56). It's possible that response among teens, who normally index near or above 100 in Arbitron's Syndicated radio surveys, was negatively affected by our request that parents assist young children with their diaries.

(Note: The proportionality index of an in-tab sample is computed by dividing the in-tab percent by the population percent, then multiplying the result by 100. Thus, an index of 100 points indicates perfect proportionality.)

Respondent Feedback Generally Positive

Response to the postsurvey interview among households returning an in-tab child diary was excellent. We completed adult interviews with 50 of the 55 randomly selected households attempted, or 91%. We completed interviews with 21 of 25 children age 8-11, or 84%.

The interview results provided generally positive feedback on respondents' experiences with the methodology. Parents did assist children with the diary task, and reported little difficulty in doing so. Both parents and children 8-11 reported generally good adherence to the diary task, with large majorities reporting that most of the child's listening was properly recorded. However, we found that the diary did not "follow" children away from their parents, which was one of the potential benefits we saw for this method in terms of capturing children's away-from-home listening.

It's important to recognize there is a potential for response bias in any postsurvey interview of this type. Respondents may tell interviewers "what they want to hear" or may claim to have done a better job of diarykeeping than was really the case. Still, the interview data provided useful insight to the appropriateness and effectiveness of the pilot methodology for surveying children.

Adult Responses

One of the first questions asked of the adult was, who usually filled out the child's diary? Not surprisingly, responses varied widely based on the child's age (Table 4). For the large majority of children 2-7, parents (92%) and especially mothers (76%) filled out the diaries. However, among children 8-11 over half (56%) either completed their own diaries (32%) or shared in the task with their mothers (24%).

Table 4

<i>Who Usually Filled Out Child's Diary? (Adult Responses)</i>			
	Total C2-11	C2-7	C8-11
Mother	54%	76%	32%
Child	16	0	32
Child and mother	12	0	24
Mother and father	10	8	12
Father	4	8	0
Other	4	8	0
Total (n)	100 (50)	100 (25)	100 (25)

About two-thirds of adult respondents (64%) claimed the child diaries were "very complete" and another 26% claimed they were "somewhat complete" (Table 5).

Table 5

<i>How Complete Was Child's Diary Overall? (Adult Responses)</i>			
	Total C2-11	C2-7	C8-11
Very complete	64%	76%	52%
Somewhat complete	26	20	32
Somewhat incomplete	6	4	8
Very incomplete	4	0	8
Total (n)	100 (50)	100 (25)	100 (25)

Only 10% felt the diaries were "somewhat or very incomplete." Again, responses varied by age, with parents crediting the younger children with more "very complete" diaries than the 8- to 11-year-olds. This finding could have resulted from the fact that parents themselves completed the 2- to 7-year-olds' diaries in nearly every case. Still, even the 8- to 11-year-olds' diaries were said to be "very or somewhat complete" by 84% of respondents.

When asked how often they thought the child diaries were filled out, 72% of the adults claimed at least once per day and 28% reported less than once per day (e.g., a few times during the week). Interestingly, several parents claimed to keep notes on their child's listening throughout the day by marking "shared listening" events in their own diaries or jotting listening on other pieces of paper. They then transferred these entries to the child's diary once or several times during the week. One mother of a three-year-old explained that she and her daughter were together "almost all the time." She simply placed a dot next to the listening entries in her own diary to indicate when the child was also in the audience, then transferred these entries to the child's diary.

We asked adults how often either the adult or child had trouble entering the correct child listening times and stations heard. The vast majority reported "rarely or never" having trouble in recording either the listening times (84%) or correct station IDs (94%). Ninety-six percent reported no confusion or difficulty with the diary design or instructions.

The one possible downside identified in the interviews was that the children did not often take their diaries with them outside the home. As shown in Table 6,

Table 6		
<i>How Often Was Child's Diary Taken in the Car or to Other Away-from-Home Settings? (Adult Responses)</i>		
	In-Car	Other AFH
All the time	8%	2%
Most of the time	2	0
Some of the time	14	0
Rarely or never	70	94
Not applicable	6	8
Total (n)	100 (50)	100 (50)

the large majority of adults said children “rarely or never” took their diaries in the car (70%) or to other away-from-home settings (94%). The most frequent explanation for this was fear that the diaries would be lost or damaged if “allowed out of the house” — a fear that in hindsight seems logical.

Child Responses

Interview findings for children 8-11 were largely consistent with the adult responses. When asked who they usually asked for help with their diary, two-thirds (67%) said their mothers. Only one child reported asking for no help at all with the diary (Table 7).

Table 7	
<i>Who Did Child Usually Ask for Help with Diary? (Child 8-11 Responses)</i>	
Mother	67%
Mother and father	14
Father	5
Sibling	5
Other	5
No help needed	5
Total (n)	100% (21)

When asked how much of their total radio listening they thought got written in their diaries, 29% claimed “every time I heard a radio” and 52% claimed “not every time, but most of the time.” Nineteen percent said either “some of the time” or “only a little” (Table 8).

Table 8	
<i>How Much of Child's Total Listening Was Written in Diary? (Child 8-11 Responses)</i>	
“Every time I heard a radio”	29%
“Not every time, but most of the time”	52
“Some of the time”	14
“Only a little”	5
Total (n)	100% (21)

We asked the children to assess how easy or hard they found the diary itself and the diary instructions. Nearly half (48%) said “very easy” while another 43% said “a little easy.” Only 19% reported the diary was “a little hard” or “very hard” (Table 9).

Table 9	
<i>How Easy/Hard Were the Diary Itself and the Diary Instructions? (Child 8-11 Responses)</i>	
“Very easy”	48%
“A little easy”	43
“A little hard”	14
“Very hard”	5
Total (n)	100% (21)

Conclusion: Research Findings Supported the Use of Parent-Assisted Diaries for Measuring Children's Radio Listening

Based on a detailed evaluation of the study results summarized above, Arbitron's Methods Research department recommended continued use of the Minneapolis pilot study methodology for children's radio measurement. We found that the standard Arbitron Radio diary, combined with parental assistance as needed, achieved good results with respect to response, diary quality and completeness, and proportional representation of children.

While the overall pilot study results were very good, our findings did point to one potential problem area. It's clear that the challenge of fully capturing children's “away-from-parents” listening still exists. The diary did not “follow” children when they left their parents and this could have resulted in a net underreporting of total listening. On the other hand, more diaries may have

been lost completely if children had in fact carried them around more (a risk emphasized by several parents). On balance, we concluded that the risk of lost diaries probably outweighs the benefit of encouraging children to carry their diaries with them wherever they go.

In nearly all other areas, respondent feedback from both adults and children was quite positive. We found no evidence of major problems with the diary task, either among children or the adults whose help they required to complete the task. While the reported timeliness and exactitude of diarykeeping for the child sample was less than perfect, adherence to the task appeared good overall. Parents, particularly mothers, did provide the support needed to track children's listening. And in some cases, parents found creative and effective ways to record their children's listening without substantially increasing their own reporting burden. On the whole, we believe the in-tab diaries provided a reasonably complete record of each child's total listening.

Author's Note: In addition to evaluating the methodological aspects of the children's radio diary survey discussed in this paper, Arbitron also prepared a report describing the actual listening data reported by and for children 2-11 during the study. The report provides a variety of radio listening estimates for children in the Minneapolis metropolitan area and the adults in their households. While not generalizable to other areas, the listening data may be of interest to anyone interested in children's media issues. Persons interested in obtaining copies of this report should contact:

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