USING CASI-AUDIO (COMPUTER ASSISTED SELF INTERVIEW WITH AUDIO) IN READERSHIP MEASUREMENTS

Julian Baim & David Arpin, Mediamark Research Inc.
Valentine Appel, Consultant

Introduction

This paper discusses Mediamark Research Incorporated's (MRI) testing of a computerized, self-administered procedure for measuring magazine readership. We believe that this methodology, CASI-Audio, represents a quantum leap in survey measurement techniques.

Technological advances have already brought about dramatic and revolutionary changes in the way we conduct survey research. From the use of scanner technology to the development of passive measures of television viewing, we are in the midst of a sea change in survey or measurement procedures. The application of computers to the data collection process is part and parcel of this revolution. This paper describes the experimental tests MRI has conducted using a self-administered technique, CASI-Audio (Computer Assisted Self Interview with Audio).

The use of computers in the interview process is not new of course. CATI (Computer Assisted Telephone Interviewing) has been with us for a decade or more. More recently, CAPI (Computer Assisted Personal Interviewing) has been introduced into the marketplace. Both these procedures are employed to replace the traditional paper and pencil method of interviewing. In either case, researchers have assumed that computerized methods represent a substantial improvement in the quality of the interview and, in turn, in the quality of the data.

Expected Improvements

Among the expected improvements were:

(1) The ease of conducting the interview -- Interviewers no longer have to fumble through pages to follow complicated "skip" or branching routines. The computer handles these problems, regardless of complexity.

(2) The pace of the interview -- Because the questioning sequence is computerized, the interviewer can proceed more quickly with the survey. (This perceived advantage has not yet fully materialized for CAPI)

(3) The quality of the interview -- The improved pacing of the interview creates a better "exchange" between the interviewer and the respondent.

(4) Ensuring that every question is asked -- The computer simply does not allow an interviewer to omit segments of an interview inadvertently.

(5) Better quality control procedures -- The computer can record actual interview length, question length and other data that lead to timely and effective measures of evaluating interviewer effectiveness.

(6) More timely delivery of data - There is virtually no need for a separate keypunching function.

Both CATI and CAPI have made substantial improvements in survey research. But, where does CASI-Audio fit into this mix? CASI-Audio goes beyond both of these techniques by actually removing the interviewer from the interviewing process. In the CASI-audio interview, the computer replays a digitized audio recording of all the questions while it displays the instructions, questions and answer choices on the computer screen. By using touch-screen technology, the respondent can record all answers and control the pace of the interview. As we will see, CASI-Audio does not require computer literacy.

O'Reilly et al. aptly summarize the potential advantages of the CASI-Audio.

"Audio-computer self-interviewing.. offers the promise of eliminating the requirement of literacy that limits both written SAQs and Video-CASI. At the same time, Audio-CASI provides the major advantage common to all self-administered modes - greater respondent privacy - plus the unique advantages of computerized administration, e.g., exactly standardized administration of the questions, instantaneous range and consistency checking of responses, convenient multilingual administration, etc." (O'Reilly et al., 1994).

CASI-Audio retains all the advantages of CAPI, but more fully utilizes the computer in the survey process. Unlike CATI or CAPI, CASI-Audio does not require human intervention either to ask the question or record the answer.

We can make sure that every question is asked in exactly the same manner, with the same qualifications and similar instructions. We not only standardize the interview; we can completely ensure randomization of the logos and of other questions in our survey procedure. We can also ensure complete confidentiality for the respondent when completing the survey.

Experimentation To Date

These initiatives cannot take place without extensive testing. After careful consideration , a three phase program of interviewing was planned, the first two phases of which have been completed.

Phase 1:

The purpose of the first phase was to pre-test the CASI interviewing procedure to insure that the computer program was working properly, and to identify any problems which consumers might have in carrying out the simple instructions that needed to be followed.

The phase 1 fieldwork was conducted during the month of February 1995 in a central location in an upper middle suburban New Jersey location, equipped with a video camera and a two way mirror. Respondents were screened via random digit telephoning, and those qualified were offered a twenty five dollar cash incentive for agreeing to travel to the location and to participate in a study about magazine and newspaper readership.

Age, gender and education quotas were established to reflect the composition of the U.S. Phase 1 consisted of 25 such respondents being interviewed, all of them via CASI.

Looking through the two way mirror in the viewing room and listening to the debriefings which followed, it was obvious that the computer program was working the way it was supposed to. Moreover, regardless of their level of computer literacy, the respondents were having no difficulty and their attitudes toward the experience were generally positive. No one reacted negatively.

It also became apparent, however, that respondents were screening in at about three times the rate to which MRI was accustomed. We couldn't tell whether this phenomenon was caused by the experience of being interviewed by computer, or whether some other sampling or procedural matter was the root cause. The answer to that question had to await the completion of phase 2.

Phase 2:

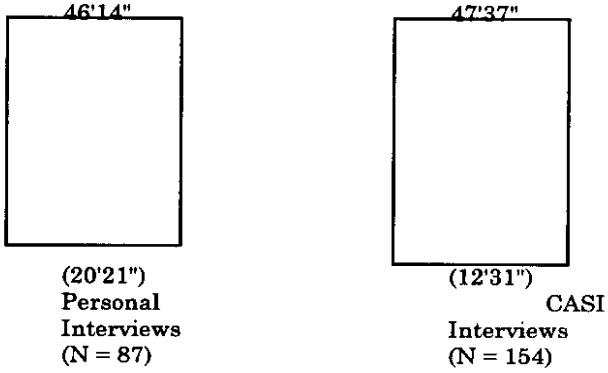
The field work for phase 2 began on May 5, 1995, using respondents who had been screened and recruited in the same way as in phase 1. The difference was that half were assigned at random to be interviewed via CASI, and the other half were assigned to be personally interviewed using the standard MRI questionnaire.

For reasons that will be described later, Phase 2 was divided into two parts, A and B, part A consisting of 200 respondents and part B 100 more.

The average length of time to complete the interview via CASI for both parts A and B combined was 47'37" compared with 46'14" when conducted personally. (Note that for 62/149 of the personally conducted interviews the interviewer failed to indicate the elapsed time). (S 1)

S 1

MEAN INTERVIEW TIME*
(By Type of Interview)

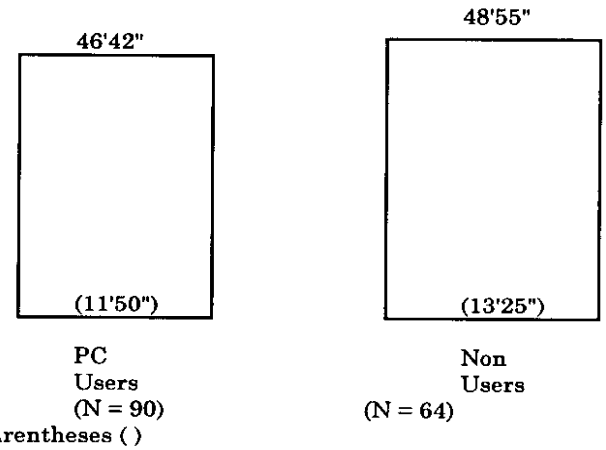


* Standard Deviations in Parentheses ( )

Certifying to the ease of completion of the CASI interview, the length of time for those who use a computer at home or business was only two minutes shorter than for non computer users (46'42" vs 48'45"). (S 2)

S 2

MEAN CASI INTERVIEW TIME*
(By Computer Usage)

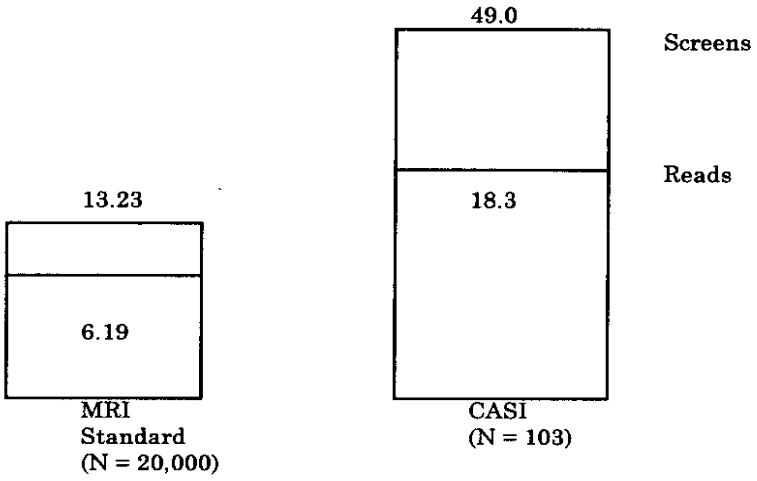


* Standard Deviations in Parentheses ( )

When the screen-in and read rates of the CASI interviewed respondents in part A were compared with the Spring '95 MRI screen-ins and read rates, the phenomenon we had less formally observed in phase 1 was confirmed. The CASI screen-in and read rates were three or four times higher than were the published MRI estimates. (S 3)

S 3

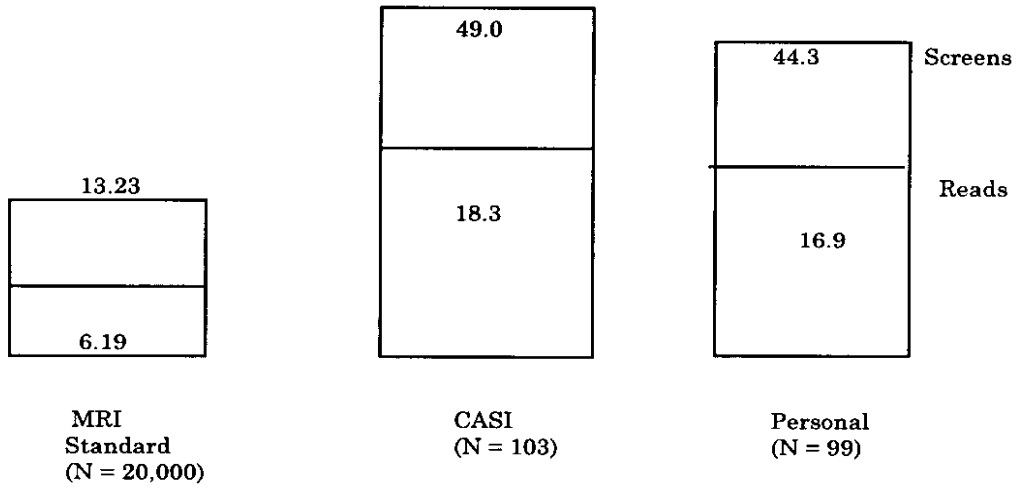
MEAN SCREEN-IN AND READ RATES



And when the personal interview data were compared with the CASI generated data (S 4), it became apparent that it was not the experience of using a computer that was causing the differences relative to the MRI published data. Although personal interviewing did produce slightly fewer screen-ins than did CASI (five fewer titles on average) the difference was not statistically significant (t=1.23).

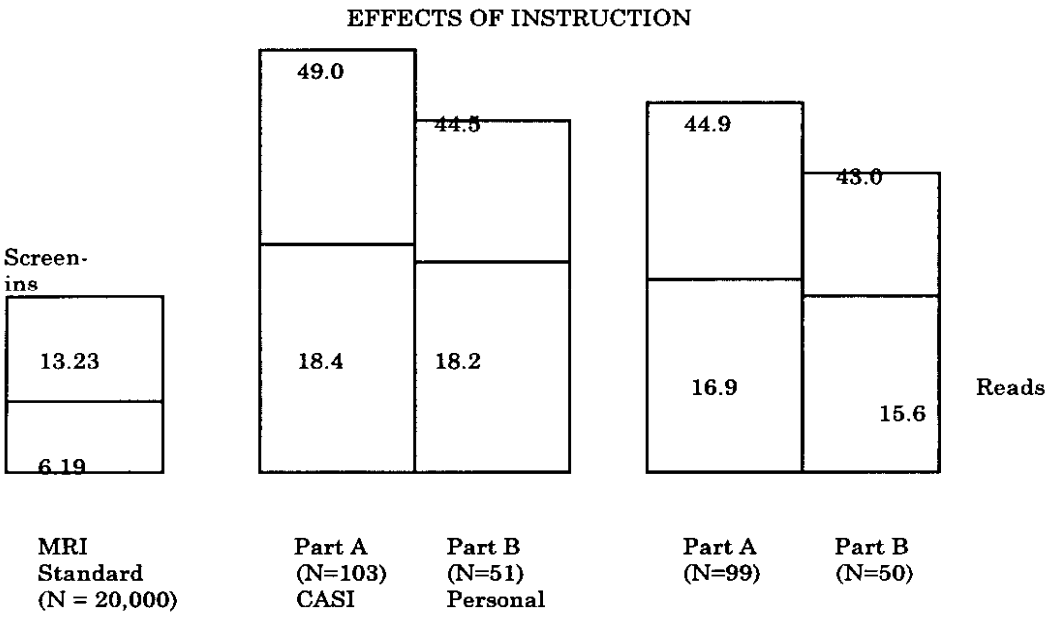
S 4

MEAN SCREEN-IN AND READ RATES



One possible influence that we considered was the instructions each respondent had been given at the time of recruitment. Each respondent had been told that "We're conducting a survey on magazine and newspaper reading. Let me assure you that this is not a sales call and no one will try to sell you anything later." and there was the possibility that this might somehow have caused a change in attitude or behavior which was reflected in the subsequent screen-ins. Accordingly in part B an additional hundred respondents were recruited with the explanation that "We're conducting a survey among adults 18 years of age and older. Let me assure you that this is not a sales call and no one will try to sell you anything later." Half were interviewed via CASI and the other half were personally interviewed.

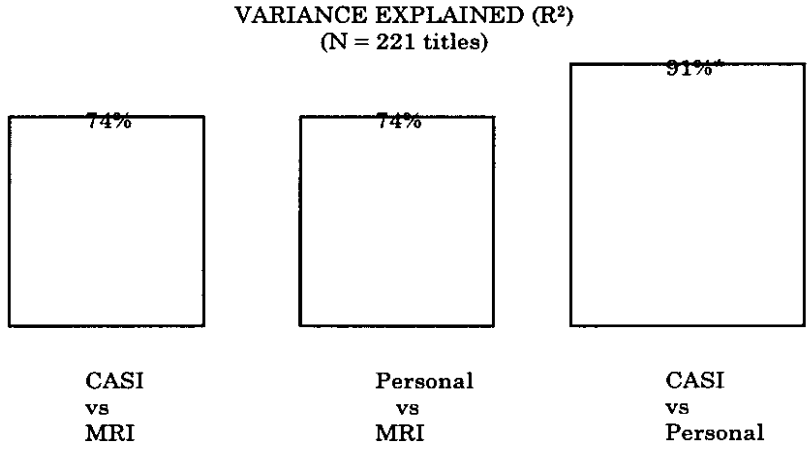
S 5



When the results of the CASI and personal interviews were compared (S 5), it became apparent that it was not the recruitment instructions that was the cause of the high screen-in levels. Regardless of which recruitment instruction was used, approximately the same mean screen-in and read level was the result.

Because of the limited sample size the amount of analysis that could be performed on individual titles was necessarily limited. Nevertheless, we correlated the ratings for the 221 titles measured in common with MRI with the ratings generated using the CASI and personal interview methods with each other and with MRI.

S 6



* Significant Difference (t = 5.63)
As you can see (S 6) the CASI ratings explained 91% of the variance in the personal interview ratings (r=+.95). More important, however, is the fact that the CASI generated ratings correlated about as well with the MRI ratings as did the personal interviews which used the same questioning procedure as did MRI.

The implication of this fact is that the CASI ratings agreed with MRI about as well as could be expected given the constraints of sample size, recruiting procedure and whatever sample bias may have existed.

Conclusion

Where does that leave us?

1. We have an up and running multi-media CASI program which is easily operated by respondents regardless of their level of computer literacy.

2. Virtually no intervention by an interviewer is required and neither interviewer nor respondent can influence questionnaire responses in anticipation of their effect upon the burden of subsequent questions.

3. Magazines ratings generated by the standard MRI service correlate as well with the CASI generated ratings as do ratings generated by personal interviews conducted at the same time among a matched sample. The CASI generated ratings explain significantly more of the variance in the personal interviews conducted with the matched sample than they do the standard MRI service.

4. The CASI generated ratings, and the ratings generated by the matched sample personal interviews, produced much higher audience estimates than did the standard MRI survey. This fact, coupled with the fact that the ratings correlated significantly higher with the personal interviews than they did with the standard MRI ratings, suggests that the difference in sampling procedure or recruitment procedure or both was the cause of the inflated estimates.

The next step, therefore, will be to equip interviewers with CASI programmed note book multi-media computers, using the same sampling and recruiting procedure as MRI now uses, and to explore the effects which the use of the computer in the respondents own home will have upon the audience estimates generated.