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**THE DEMAND FOR EXTRA DATA  
HOW DIRECT ENTRY CAN HELP**

**SYNOPSIS**

In the past 25 years JICNARS has succeeded in trebling the length of the NRS media list and increasing sixfold the number of behavioural questions asked. By the adoption of EML or grouped title cards and supervised self-completion for a section of the questionnaire, these increases in coverage have been achieved with only marginal changes to the data and increases in the time needed for the average interview.

Currently, there are requests for further additions to the NRS questionnaire and also for faster and more frequent reporting. With the present technique there is the risk of significant effects on the stability of the main results if the proposed additions were made. RSL have consequently started to experiment with Computer Aided Personal Interviewing (CAPI) to establish whether this technique will enable extra data to be collected without unwanted side-effects.

This paper describes how CAPI has been used in a preliminary experiment undertaken in June 1990 with 115 interviews, and in a development study with 894 interviews completed in October. Their results indicate that the technique is acceptable to informants and interviewers, and that gross AIR levels are unlikely to be affected if additional readership questions on each title are introduced within a CAPI-based technique.

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Table 1 shows some of the characteristics of the British National Readership Survey questionnaire as it was in 1964-5 compared with its present structure.

**TABLE 1**

	1964-5	1989-90
Number of titles	84	305
Questions per title, minimum	2	2
maximum	3	8
Behavioural questions	27	168
Classification	minor changes only	
Questionnaire pages	8	29

These large increases in the coverage of the interview have been achieved through two major technical changes. The first, which has been described at previous Symposia, was the introduction of the EML or grouped title card technique. The informant screens blocks of six titles simultaneously, as containing none or any that he or she has read in the past year. The media list is quickly reduced by an average of about 80% in a way that informants find easy to use.

The second major step has been to transfer most of the behavioural questions on the NRS from the personal interview questionnaire to a separate self-completion questionnaire. The informant fills in this section while the interviewer is still present. The interviewer ensures that all informants undertake this task; she is available to give any help that is needed, but she is mainly occupied with administrative work which would otherwise have to be done after the interview is over.

Hence the introduction of EML or grouped title cards and the self-completion section have made it possible to make large increases in the total length of the media list and the number of behavioural questions. The penalty coming from the lengthening of the questionnaire is marginal; it is a very small fraction of the extra time that would have been needed if the pre-EML method had been retained.

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The further demands being made of the NRS interview at present are of two main kinds. Apart from the need to cover more significant new titles, there are requests for additional data. They include more questions on the nature of the reading event, measures of readership for the Saturday editions of national dailies, treating them as separate publications, measures of informants' interest in a long list of topics which are covered in most newspapers, and possibly the introduction of lifestyle questions.

The second type of pressure is to publish data more rapidly and more frequently, with monthly rather than quarterly publication of data-tapes.

Without a further modification of the technique, the addition of extra standard questions would of course lengthen the interview. Though the effects of lengthening the interview may be small, it has to be assumed that there will be at least some tendency for the interviewer to go faster, resulting in some loss of precision and completeness in the data.

In the particular cases of questions on Saturday readership and the nature of the reading event there is a further problem with the conventional personal interview method using paper and pencil. This is that the interviewer is bound to be aware that positive answers to early readership questions lead to extra questioning for each title so answered. Some informants are also likely to become aware of this consequence. There is therefore likely to be at least some reduction in the total level of positive reading claims, and some increase in order effects.

The main issue in considering additions to the current questionnaire is whether it is possible to avoid, or at least minimise, adverse effects on the incidence of readership claims by a change in technique, which would also suit more rapid and frequent reporting. We suggest that the following principles should underlie any modification in the survey technique intended to meet these objectives.

- (1) To use stimuli and procedures which will get from the full media list to the informant's own list of relevant titles without omissions. We believe this means that the reduction should be done by the informant with minimal intervention by the interviewer.
- (2) To avoid alerting the informant or the interviewer to the fact that certain answers result in increases or decreases in the number of extra questions that will be asked.

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- (3) To ask every question in the form and order which is best for the informant, rather than in a sequence dictated by the constraints of the technique.
- (4) To make the recording procedure as quick and easy for the interviewer to use as possible, minimising or avoiding data entry errors and omissions.

Given the requirement that the media list is to be long - over 250 titles in the case of any foreseeable future British NRS - we believe that these principles can be translated into the following set of rules or guidelines.

- (1) The stimuli used to reduce the readership list should be visual aids which can be handled and sorted by the informant with the minimum intervention from the interviewer.
- (2) The criteria and procedures which trigger extra questioning on certain titles should be concealed from informants, and as far as possible from interviewers.
- (3) It is desirable to be able to modify the order of titles at different stages of the readership interview.
- (4) Data entry should be completed in a single step, if possible, and should include automatic protection against data entry errors and omissions.

We now consider how well the three following techniques stand up to these guidelines.

- (1) Conventional personal interviewing, followed by data entry in the office.
- (2) Computer Aided Telephone Interviewing, or CATI.
- (3) Computer Aided Personal Interviewing, or CAPI.

Conceptually, CAPI is identical to CATI, in that the interview is controlled by a computer into which data are entered directly by the interviewer. The CAPI computer is a fully portable lap-top model. When an assignment has been completed the data can be returned on disk through the post or overnight via modem. Compared with paper and pencil techniques there is potentially a significant saving in time between the last interview and the availability of a clean datatape.

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### **The Filter Stage**

With standard personal interviews and with CAPI any desired visual stimulus can be used. Possibilities include single masthead cards and grouped title or EML cards. Selected cards and titles are coded on the questionnaire, or, with CAPI, entered into the datatape.

With CATI the only possibility is to read out the list of titles one by one with whatever supplementary guidance is necessary to avoid title confusion. The relevant titles are entered into the database.

### **Exposure of Routing**

Normal questionnaires have to include routing instructions and procedures. The interviewer will be constantly reminded of them, while the informant may deduce how the system works, especially if he or she is an intensive reader.

With CATI the routing is controlled by the computer, so the interviewer is not reminded of it. A disadvantage of CATI at this stage is that the interviewer must frequently repeat the questions as well as naming the titles at each step; with the other two methods show cards can be used for the questions.

### **Recording and Data Entry**

When using a paper questionnaire the interviewer must enter codes manually, with a risk of errors and omissions. Errors may also be made when the data are entered.

With both CATI and CAPI the program is designed so that only logically possible answers will be accepted and omissions cannot occur.

For readership research we believe that the crucial advantage of personal interviewing over telephone interviewing is that visual stimuli can be used, giving much greater speed and accuracy than is possible with the spoken word. Both CATI and CAPI have the advantages over conventional personal interviews that the question order can be varied, filters can be concealed and data entry errors minimised. CAPI therefore offers the advantages of both personal interviewing and direct data entry without the corresponding disadvantages of either.

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### **The RSL Pilot Study**

During the first quarter of 1990 RSL started a major continuous national survey based on the CAPI interviewing method. In June 1990 RSL undertook a small pilot study of readership, with the approval of JICNARS, with the objectives of testing the feasibility of using CAPI for this purpose and developing suitable procedures. It was completed on the scale of 115 interviews, using nine personally briefed interviewers.

Briefly, the technique consisted of the following stages.

- (1) The 48 EML or grouped title cards currently used for the standard NRS survey were sorted into those with and without any title read or looked at in the past year.
- (2) For each 'Yes' card the interviewer asked whether each title had been read or looked at in the past year and entered the reply.
- (3) The informant checked through the 'No' cards again. All additional titles claimed were entered.
- (4) The computer re-ordered the 'Yes' titles from the subject groupings on the cards into frequency groupings i.e. dailies, weeklies, fortnightlies, bi-monthlies, monthlies, Sundays. In this pilot only a single order was used.
- (5) For each 'Yes' title in turn the interviewer asked the recency question with undisclosed scales, then the frequency question with a disclosed standard four point scale. For Saturday issues of all dailies and all newspaper colour supplements the same two questions were asked immediately after questions on their parent papers.
- (6) For each 'Yes' magazine title not coded 'longer ago' the interviewer then asked three questions horizontally on the source and place of reading of the copy, time spent reading, and whether the informant would be very sorry or not if the title ceased publication.
- (7) Standard NRS questions on intensity of exposure to other media, followed by standard NRS classification.
- (8) In this test the behavioural questions which are currently asked through the self-completion section of the NRS interview were omitted.

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### **Pilot Study Findings**

As is to be expected in a preliminary feasibility study, certain programming weaknesses were identified in the field and at the analysis stage. It was consequently impossible to analyse the full results for newspaper colour supplements and for the small number of extra titles screened in at Stage (3). In the tables these cases are included on the assumption that the answers would have been distributed in the same way as for titles generated at Stage (2). The program was amended without difficulty to solve these problems for the future.

The interviewers, who were all experienced in using the standard NRS questionnaire, strongly favoured the CAPI method, subject to minor modifications being made to the program. These changes have since been introduced. Informants also accepted the computer easily, while the response rate and the length of interview were almost the same as for the nine standard NRS assignments completed in January 1990 at the same sampling points.

Table 2 shows gross average issue readership for all main categories of publication based on all adults. The first column shows unweighted NRS data for the whole of 1989. The second column gives the unweighted data for the nine test sampling points when they were issued as standard NRS points in January 1990. The last column gives unweighted data for the same nine sampling points when they were used for the CAPI experiment.

The average issue readership table shows that the unweighted numbers of readers at the matched sets of sampling points were almost the same as the levels obtained with the standard NRS method in January. The small residual differences are almost fully explained by the greater numbers of women and adults of ABC1 social grade in the experimental sample than in the January NRS sample at the same points.

Similarly the substantial differences between the readership levels for the nine test sampling points in both the January and June studies compared with the NRS for the whole of 1989 is explained by the fact that these points contained a higher than average incidence of adults in the higher social grades. This also explains why there were considerably more readers of quality dailies and Sundays in both studies in the test areas than in the national study for 1989, but considerably fewer readers of popular nationals.

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TABLE 2

Pre-Pilot Gross Average Issue Readership by Category

	NRS 1989	NRS January 1990	CAPI June 1990
Unweighted adults	27,431	123	115
	%	%	%
Dailies			
5 Quality	13.6	19	19
7 Popular	75.9	69	68
Sundays			
4/5 Quality	18.0	23	22
7 Popular	104.9	89	83
Weeklies			
2 Programme	38.9	50	43
16 Women's	66.2	61	67
35 General	30.5	28	25
Monthlies			
44 Women's	86.9	132	139
76 General	83.9	101	100
All Newspapers	212.4	200	193
All Magazines	306.4	371	375
All Publications	518.8	571	567



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**TABLE 3**

**Pre-Pilot Gross Readership in the Past Year by Category**

	NRS 1989	NRS January 1990	CAPI June 1990
Unweighted adults	27,431	123	115
	%	%	%
<b>Dailies</b>			
5 Quality	64.2	86	111
7 Popular	185.0	155	213
<b>Sundays</b>			
4/5 Quality	45.4	61	95
7 Popular	165.4	152	185
<b>Weeklies</b>			
2 Programme	98.0	111	112
16 Women's	184.8	182	224
35 General	124.7	125	135
<b>Monthlies</b>			
44 Women's	192.2	231	341
76 General	169.9	199	232
All Newspapers	460.0	454	604
All Magazines	769.4	849	1044
All Publications	1229.6	1302	1648

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Table 3 shows that the number of publications claimed to have been read or looked at in the past year was consistently greater with the CAPI method than with the standard NRS method at the matched set of nine sampling points. Over all categories CAPI gave estimates of the widest audience which averaged 26.5% more than the standard NRS estimates.

The explanation of this difference is that the CAPI experiment brought in considerably more readers claiming to have read titles 'Only Occasionally' in the past year. The incidence of 'Almost Always' and 'Quite Often' readers was little changed.

This effect clearly comes from establishing readership in the past year for individual titles immediately after the selection of eligible cards, rather than as part of the frequency question. It is therefore not directly affected by the use of CAPI, since it is only the outcome of this stage that is entered into the computer.

Turning to the questions on the nature of the reading event and readership of Saturday editions, it was found that all questions were answered without difficulty and the levels were of the expected magnitudes. There are no equivalent data for the nine sampling points obtained by an NRS method with which comparisons can be made.

### **The October Development Study**

After the deadline for submitting Symposium papers, RSL completed a further CAPI readership study on a larger scale. The fieldwork for this study, which was sponsored by Associated Newspapers and News International, was completed in October 1990, yielding 894 interviews. The sample was based on the NRS design, interviewing again in a sub-set of an earlier month's NRS points.

The material difference between the pre-pilot and the Development Study was that the number of magazines in the media list was reduced to 36 titles with large circulations. They included two out of the 18 motoring magazines on the NRS media list and a single geographical title. As in the case of the pre-pilot study, the achieved response rate was two percentage points less than in the standard NRS method.

Tables 4 and 5 show the gross AIR and gross Readership in the Past Year for each category of title compared with the results of the standard NRS for the same month. Both sets of data are unweighted.

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TABLE 4

Development Gross Average Issue Readership by Category

	NRS October 1990	CAPI October 1990
Unweighted adults	2119	894
	%	%
Dailies		
5 Quality	14.4	15.1
7 Popular	75.5	72.1
Sundays		
4/5 Quality	17.3	18.7
7 Popular	105.5	109.1
Weeklies		
2 Programme	34.8	37.9
16 Women's	67.7	64.4
Monthlies		
19 Women's	60.5	68.1
4 General	24.3	34.2
All Newspapers	212.7	215.0
All Magazines	187.3	204.6
All Publications	400.0	419.6

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**TABLE 5**

**Development Gross Readership in Past Year by Category**

	NRS October 1990	CAPI October 1990
Unweighted adults	2119	894
	%	%
<b>Dailies</b>		
5 Quality	62.5	92.1
7 Popular	180.3	207.9
<b>Sundays</b>		
4/5 Quality	51.3	121.9
7 Popular	165.0	196.3
<b>Weeklies</b>		
2 Programme	92.5	99.8
16 Women's	181.2	218.2
<b>Monthlies</b>		
19 Women's	133.4	180.6
4 General	46.8	60.1
All Newspapers	459.1	618.2
All Magazines	453.9	558.7
All Publications	913.0	1176.9

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Table 4 shows that for newspapers gross AIR was almost identical to the gross level found in the NRS for the same period. Whereas in the pre-pilot study, in which no rotations were used, gross AIR for Sundays was less than the corresponding NRS estimate, in the Development Study gross AIR for Sundays slightly exceeded the NRS estimate.

For magazines, gross AIR with the CAPI technique exceeded the gross estimate obtained by the standard method by 9%. However, this excess mainly related to the two motoring titles and the single geographical title included in the media list. For these three titles the experimental estimates exceeded the NRS estimates by 90%. The explanation of these results has nothing to do with the CAPI technique. It is the consequence of excluding all but two of the significant motoring titles from the media list, which has the effect of creating over-claims for the titles that are included. For the three other categories of magazines covered in the survey the media list excluded only minor titles, so this effect is minimal.

Table 5 shows that gross Read in Past Year claims for all titles with the CAPI method exceeded the levels obtained by the standard NRS technique by 29%, which compares with the increase of 26.5% found in the pre-pilot. As in the case of the pre-pilot, screening titles individually for widest audience claims has generated more informants who read each title 'Only Occasionally' than the standard NRS method. It must be emphasised that this step is completed before CAPI is used.

### **Conclusions**

These two experimental surveys have demonstrated that the CAPI technique is readily accepted by interviewers and informants. It will yield average issue readership estimates which are unchanged compared with the estimates obtained by the standard NRS method, even when several additional qualitative readership questions are added.

It is clear that Computer Aided Personal Interviewing offers good solutions to problems that cannot easily be solved with telephone or traditional personal interviewing techniques. The practical problems of using CAPI do not appear to be difficult, although further work is needed to ensure that the response rate is not affected. On the assumption that demands for additional information on the nature of reading events will become increasingly important, we believe that the use of CAPI will become standard practice in the present decade as the real price of hardware continues to fall.