

CAPI AND THE NRS

Erhard Meier and Steven Finch, RSL - Research Services Ltd.

Synopsis

This paper describes the background to the changes made to the British National Readership Survey (NRS) questionnaire when CAPI (Computer Assisted Personal Interviewing) was introduced in July 1992.

CAPI was introduced because it offered faster reporting, better quality of the data collected, and improved efficiency.

The questionnaire changes accompanying its introduction resulted in changed readership findings. Notably because of a new direct "past year" filter for all publications (when previously there was an indirect "past year" filter) "past year" readership and average-issue-readership figures increased for nearly all titles. Frequency of reading was also affected, particularly by an increase in the number of "occasional" readers.

Written in the form of a letter to a fictional media researcher somewhere overseas

Dear Eric,

Thank you for your fax and your interest in the recent developments regarding the National Readership Survey in Britain. Yes, the NRS went over to the CAPI data collection method in July 1992 and, yes, there were changes to the readership results due to the new questionnaire, compared with the pen and paper method which was employed up to June 1992.

You asked us to explain why we changed to CAPI, and why the results have changed, and whether we think the new findings to be more correct than before. This is of course a "wide field" (as Fontane said) but we will do our best to oblige.

The position from which we paint our picture is naturally not that of disinterested observers as our company has been very much involved in the pioneering development and promotion of CAPI as a data collection tool in market research. For readership studies and the NRS in particular, we at RSL started to think that CAPI might be the solution for a large number of demands back in 1989, and Pym Cornish entitled his 1991 Hong Kong Symposium paper "The Demand for Extra Data - How Direct Entry Can Help"⁽¹⁾. He outlined that the pen and paper methodology would be over-stretched if more titles and additional questions about the nature of reading events or about Saturday issues of daily newspapers, about topics or sections read, or possibly lifestyle questions, were to be introduced. He also touched upon the demand on the NRS for faster and more frequent reporting - and this for a survey which already had a very fast reporting cycle compared with other national readership surveys operating in Europe and elsewhere. (With CAPI we now produce monthly reports two weeks after fieldwork ends; before it was four weeks after fieldwork ended.)

Roger Beeson, the Managing Director of NRS Limited, covers in his San Francisco paper⁽²⁾ the "political" aspects and considerations which finally led to the implementation of CAPI in July 1992. We will therefore restrict ourselves to trying to explain the questionnaire changes which were made when the NRS questionnaire was "translated" into CAPI and which resulted in quite different readership scores for most publication groups. Pym Cornish had pointed out in his Hong Kong paper that the Read Past Year (RPY) claims were consistently greater with the CAPI method compared with the then standard NRS method, based on the two pilot studies of June and October 1990, which he was able to report on. Average Issue Readership (AIR) claims were - he found - only marginally affected. Since then, we have the experiences of the larger scale October 1991 NRS CAPI Pilot with 1,761 interviews and half a year of the proper NRS CAPI survey, namely July to December 1992 with 15,724 interviews. Both these studies confirm that RPY claims are greater with CAPI.

But they also show greater AIR claims for most titles except the Sundays. The different AIR findings are probably due to further changes made to the questioning procedures between the earlier and the later Pilot studies.

Let us briefly remind you what CAPI actually is and means. It stands for Computer Assisted Personal Interviewing. It combines the advantages of personal interviewing with the control, speed, and flexibility provided by CATI (Computer Assisted Telephone Interviewing). For the NRS we use the Toshiba 1000/2000 series lap-top computer. Our interviewers have undergone a special two-day training course so that they all master the machine before they go out into the field.

Informants themselves do not handle the computer nor do they look at the screen. You might remember the video film we showed at the Hong Kong Symposium. It included a clip from a CAPI interview which illustrated how the questions appear on the screen for the interviewer to read out, together with the response categories and their enter codes. As in a pen and paper interview, informants are handed the relevant interviewing aids such as publication cards and prompt lists. The CAPI results are transmitted electronically (by modem) overnight by the interviewer back to the office for immediate analysis.

Apart from speed, the main advantage of CAPI for the National Readership Survey is that it gives much greater control over the administration of the readership questions for over 250 titles, ensuring more correct and complete coverage of all relevant questions for all relevant titles. Furthermore, CAPI allows us - potentially - to sub-sample the titles for which particular, notably quality of reading, questions may be asked, from those the informant has claimed, so that the length of interview is firmly controlled. This option, however, is presently not used by the NRS.

You might now ask, why then did we change the questionnaire when we went over to CAPI? What was wrong with it? To answer this question, we need to remind you of the last major change to the NRS questionnaire which occurred in 1984. (The previous one was in 1968.) In 1984 we went over to the so-called EML grouped titles method. EML stands for Extended Media List, and the grouped titles method allowed us to increase the list of NRS titles from about 100 to 250 or more. The most tangible feature of the method is the pack of grouped titles cards. There are six titles on each card, typescript on the front - for sorting - and mini-mastheads on the back - for detailed questioning on each title on the card once it has been chosen by the informant.

Apart from the large increase in the number of titles without lengthening the interview, the EML method improved considerably the measurement of them compared with the previous method. Title confusion was reduced, rotation effects were reduced, and frequency claims were less subject to error. However, in spite of the great advances made in 1984 not only technically but also in making the interview more "informant-friendly", we became aware over the ensuing years that some aspects of the questioning procedures were not as "informant-friendly" as we had hoped, with likely consequences for the results. These aspects included the (fairly lengthy) introduction to the interview, the given order of frequency and recency questions, and notably the absence of a direct Read Past Year question.

After sorting cards into 'Yes' and 'No' piles - according to whether any title on the card had been read or looked at in the past year - many informants clearly felt it natural to claim the individual title or titles which they had read in the past year; but this was denied by our method. Instead they were asked, for each 'Yes' card, first the frequency question: "Which of the titles on this card do you read or look at almost always, which quite often, which only occasionally in the past year?" and then the recency question: "Which of the titles on this card have you read or looked at yesterday (or "Saturday" in Monday interviews), which on or since lastday (i.e. seven days ago), and (for those titles not yet claimed) when was the last time you read or looked at?".

So we thought that a more natural sequence would be to ask the Read Past Year question for each title in turn on the chosen card: "Have you read or looked at ... in the past year" and then - for each Read Past Year title in turn: "When did you last read or look at a copy of ... apart from today?" followed by "And looking at the scale on the card, which best describes how often you read or look at?" This all follows the EML method's card sorting procedures which were, with only small modifications, kept basically unchanged.

From the CAPI technological point of view, the Read Past Year filter claims for each title, once entered, are the heart of the system. Read Past Year titles can be much easier, and more error free, invoked by the computer for further questioning, than would have been possible with the pen and paper questionnaire.

There were many more little changes between NRS June and July 1992 which - together with the big ones - are summarised below:

	<u>Pen and Paper</u> <u>(January to June 1992)</u>	<u>CAPL (from July 1992)</u>
Number of EML cards	45	45
Card Layout	Front: typescript Back: mini-mastheads and frequency scale	no change
Card Presentation	4 rotations over the total sample. One rotation per sampling point	no change
Introduction Wording	Slightly clumsy introduction (we thought)	More user-friendly introduction (we hope)
Card Sorting Procedure	'Yes' and 'No' sorting boards	no change
Card sort: Facing side of EML card	Typescript side	no change
"Don't know" cards	After sorting, "Don't know" cards are checked for 'Yes' and 'No'	"Don't know" cards are put straight away on 'Yes' board by informant
'No' cards	Full 'No' cards checking while interviewer enters 'Yes' cards onto questionnaire	Full 'No' cards checking while interviewer looks on
'No' cards checking: Facing side of EML card	Typescript side	Mini-masthead side
Past Year Question	No such question. "Past Year" obtained indirectly by the frequency question	"Past Year" obtained directly by "Past Year" question for each title on 'Yes' card
"Past Year" facing side of EML card	Mini-masthead side (i.e. for frequency question)	Mini-masthead side

Pen and Paper
(January to June 1992)

Recency Question

Asked for each 'Yes' card in turn. Asked after frequency question. 3-part questioning procedure:

- Which of these did you read or look at yesterday (Sat. FOR MON. INTERVIEWS)?
- Which others have you read or looked at on or since last ...day?
- When did you last read or look at any copy of ...?

Recency Question: Facing side of EML card

Mini-masthead side

CAPI (from July 1992)

Asked after "Past Year" question for all titles on a given card.

Asked for each 'Yes' title before frequency question.

One part questioning procedure (except dailies):
- When did you last read or look at any copy of ...?

For dailies there was the same one-part questioning procedure in the CAPI Pilot Oct. 1991.

In CAPI July there was a 2-part questioning procedure for dailies:

- Did you red or look at any copy of ... yesterday (Yesterday or on Saturday IN MONDAY INTERVIEWS)
- When did you last read or look at any copy of ...?

Mini-masthead side

Pen and Paper
(January to June 1992)

CAP1 (from July 1992)

Codes for Recency question

All titles except Fortnightlies and Bi-monthlies

- Yest/Saturday (IN MON. INTERVIEWS)
- Past 7 days
- Past 4 weeks
- Past 3 months
- Longer ago

Fortnightlies:

- Past 14 days (added to above)

Bi-monthlies:

- Past 2 months (added to above)

All except Fortnightlies, Bi-monthlies and Dailies:

- Yesterday
- Past 7 days
- Past 4 weeks
- Past 3 months
- Longer ago

Fortnightlies:

- Past 2 weeks (in addition to above)

Bi-monthlies:

- Past 2 months (in addition to above)

Dailies (Monday interviews):

- Yesterday or on Saturday
 - Yes
 - No
- Past 7 days
- Past 4 weeks
- Past 3 months
- Longer ago

Dailies (Tues-Sunday interviews):

- Yesterday
 - Yes
 - No
- Past 7 days
- Past 4 weeks
- Past 3 months
- Longer ago

Frequency Question

Asked for each 'Yes' card in turn. Asked before recency question.

4-part questioning procedure:

- Which of these do you read or look at almost always?
- Which do you read or look at quite often?
- And which have you read or looked at only occasionally in the past year?
- Have you read or looked at any issue of ... in the past year? Would that be almost always, quite often or only occasionally?

Asked immediately after recency question for each "Past Year" title in turn on 'Yes' card.

One part questioning procedure:

- And looking at the scale on the card, which best describes how often you read or look at ...?

Frequency Question:
Facing side of EML card

Mini-masthead side

Mini-masthead side

	<u>Pen and Paper</u> <u>(January to June 1992)</u>	<u>CAPI (from July 1992)</u>
Codes for Frequency Question	- Almost Always - Quite Often - Only Occasionally - Not Past Year	No change, i.e. - Almost Always - Quite Often - Only Occasionally - Not Past Year
Supplements of Newspapers	Dealt with when claimed at "Which of these ..." parts of frequency and recency questions. Then dealt with in order of questionnaire version (i.e. when part of "Have you; when did you" questions) immediately <u>after</u> parent paper	Always dealt with (for "Past Year", recency and Frequency) immediately <u>after</u> questioning about parent paper.
Saturday Issues Readership (for Dailies)	Not asked	Asked in CAPI Pilot Oct. 1991. Not asked in July-Sept. 1991. Asked on split sample basis between October and December 1992.
New Titles	Asked at end of standard readership section: - Past Year - When last - Frequency	No change (except some subtle change in wording)
Source of Copy	Asked at end of standard readership section, and after new titles Asked of titles seen in past 3 months (Not asked of new titles)	Asked at end of standard readership section, and after new titles Asked of all AIR titles (Not asked of new titles)

As can be seen from the above, some changes were quite substantial, others not so substantial. We think that the greatest impact on the results stems from the direct Past Year question for each title on a selected EML card, and from the reversal of the order of recency and frequency questions.

Before we come to the readership results, let us mention some of the general findings:

- Length of interview was not affected by the change to CAPI, as the following table shows:

TABLE 1**Average Length of NRS Interview**

	Interviewers' Estimate	CAPI machine measure
NRS January-June 1992 (Pen and Paper)	37.1 minutes	-
NRS July-December 1992 (CAPI)	37.6 minutes	32.0 minutes

You should note that the interviewers' estimate will always be above the machine reading, because the interviewer estimates the overall time spent with the informant rather than the time the interview lasted from the first to the last question of the questionnaire.

- Response rates, unfortunately, were somewhat adversely affected by the introduction of CAPI. They fell, we believe, due to three main factors: a temporary influx of interviewers less experienced with readership surveys but experienced with CAPI; an inadequate remuneration system (we changed it in January 1993); and the fact that the CAPI method allows no short cuts to be made - for instance, doorstep interviews are just impossible now.

Moreover the response rate problems were compounded by the introduction of a new sampling frame for the NRS in January 1992 (the Postcode Address File, PAF) and disproportional sampling methods to boost informants of ABC1 households.

- The quality of the data collected has certainly improved by CAPI - if you accept as evidence the findings from the non-readership parts of the NRS questionnaire. As indicators we looked at the vastly reduced or eliminated levels of "not stated" figures for many questions of the classification and marketing sections of the questionnaire, particularly in the financial area. There are also improvements to the income question. The combined levels of "not stated" and "refused" for the income question fell from 35.2% before to 25.8% after the introduction of CAPI, as follows:

TABLE 2

	NRS January-June 1992 (Pen and Paper)	NRS July-December 1992 (CAPI)
	%	%
Income Question:		
- Refused	19.4	17.2
- Not stated	<u>15.8</u>	<u>8.6</u>
	35.2	25.8

Let us now turn to the readership results. The first result concerns the number of EML cards selected at the card sorting stage. You will remember, that this stage of the interview was virtually unchanged, except for the fact the informants are now asked to put "don't know" cards straight onto the "Yes" pile. However, this and the additional factor of the more rigorous implementation of the interview encouraged by CAPI, seemed to have had an effect even on the results which we did not expect to change:

TABLE 3: Average Number of 'Yes' Cards Selected by Informants

	January-June 1992 (Pen and Paper)	July-December 1992 (CAPI)
Initial Card Sort	8.5	10.7
After 'No' Card Checking	<u>0.4</u>	<u>0.5</u>
Total	8.9	11.2

The Read Past Year results, for the different publication groups, are summarised in the following table. We have chosen to use as base for our indices the January to December 1991 period, that period being the most recent one without seasonal factors needing to be considered, nor the changes to the NRS sample made in January 1992 and described in Roger Beeson's paper for the 1993 Readership Symposium⁽²⁾. As you will see, Read Past Year levels increased, by virtue of the new questionnaire, by 9%.

TABLE 4: INDEX OF READ-PAST-YEAR RESULTS (RPY)

	NRS Jan.-Dec. 1991 (Pen and Paper)	NRS Jan.-June 1992 (Pen and Paper)	NRS July-Dec. 1992 (CAPI)
Daily Newspapers	100	99	110
Sunday Newspapers	100	98	105
Supplements	100	96	116
Gen. Weekly Magazines	100	96	100
Women's Weekly Mags	100	100	113
Fortnightly Magazines	100	111	116
Gen. Monthly Magazines	100	100	110
Women's Monthly Mags	100	105	111
Bi-monthly Magazines	100	112	115
Quarterly Magazines	<u>100</u>	<u>97</u>	<u>87</u>
Total	100	99	109

Base: Adults (weighted)

You will notice the out-of-line results for the General Weeklies group. They include the TV programme magazines which - as you may know - underwent dramatic change in Britain in 1991 due to de-regulation of the market.

Looking at the Average-Issue-Readership results, these were increased by the new questionnaire by 5%, as shown in the following table:

TABLE 5: INDEX OF AVERAGE-ISSUE-READERSHIP RESULTS (AIR)

	NRS January-December 1991 (Pen and Paper)	NRS January-June 1992 (Pen and Paper)	NRS July-December 1992 (CAPI)
Daily Newspapers	100	95	104
Sunday Newspapers	100	96	99
Supplements	100	94	109
Gen. Weekly Magazines	100	92	100
Women's Weekly Magazines	100	92	104
Fortnightly Magazines	100	97	111
Gen. Monthly Magazines	100	95	111
Women's Monthly Magazines	100	98	112
Bi-monthly Magazines	100	106	115
Quarterly Magazines	<u>100</u>	<u>99</u>	<u>83</u>
Total	100	95	105

Base: Adults (weighted)

Our earlier comments about the General Weeklies group apply to the above table too. Some special comments are however needed regarding the Dailies, the Sundays and the magazines in general.

- Concerning the Dailies, these show a relatively high index figure, compared with expectations. The NRS CAPI Pilot of 1991 showed results broadly similar to those of NRS July-December 1992, except for the dailies. The dailies' index figure was then only 96, and we explained this by two factors which might have acted against the dailies' results: one was the fact that the new CAPI standardised "when last" question no longer contained a specific prompt for "yesterday", (as did the pen and paper version), and the other was the addition of two Saturday issue readership

questions (recency and frequency) for each RPY daily. In the new CAPI interview introduced in July 1992, a special "yesterday" prompt was introduced just for the dailies (see our earlier listing of

the differences between the pen and paper and the CAPI questionnaire), and the Saturday issue readership questions not asked.

However the Saturday issue readership questions were reinstated on a split sample, experimental basis for the October to December 1992 period, with no apparent adverse effects on the standard AIR measures.

- As for the Sundays, these seem to behave in a very stable manner, unaffected by the methodological changes.
- You will know about the long-standing debate in some quarters concerning both the credibility, or rather lack of it, and usefulness, of readership figures emanating from surveys using the "recency" method (as the NRS and most others do) because they seem incredibly high for many magazines. Readers-per-copy figures of 20 or more are not uncommon. Even if the figures were "right", critics say, they needed to be qualified by more useful measures so that better selection can take place.

On the first point concerning credibility of high figures, the High Readers Per Copy studies⁽³⁾ done in Britain recently showed that the then NRS method, as it was, was likely to exclude many reading events, particularly of occasional readers and out of home, and the CAPI findings for magazines show that the new method seems to be making progress on that front. On the second point concerning qualifying measures to make conventional AIR data more useful, this subject is not part of our current report.

Not surprisingly, Reading Frequency measures have changed too. The increase in RPY claims is mainly accounted for by an increase in "quite often" and "occasional" readers, with a reduction of "almost always", readers, as the following table may illustrate:

TABLE 6: Proportion of Frequency Claims

	<u>NRS July 1991-June 1992</u> <u>(Pen and Paper)</u>	<u>NRS July-September 1992</u> <u>(CAPI)</u>
	%	%
Almost always	32	26
Quite often	15	17
Only occasionally	53	57
Total Past Year	100	100

Base: 15 Dailies, 15 Sundays, 15 General Weeklies, 15 Women's Weeklies,
15 General Monthlies, 15 Women's Monthlies.

And finally, you might want to know whether we have found shifts in readership profiles. Concerning the dailies and Sundays, we have not found any major changes overall, nor for the magazines. However, some specific titles seem to have slightly changed their social grade profiles, and whether this will be borne out by the results of further fieldwork periods remains to be seen.

In conclusion, we should like to state that we think that the change to CAPI was successful overall. As with any new system, a settling down period is probably needed before a better evaluation can be made. We certainly hope that some aspects, notably response rates, will soon improve, while with most others we are fairly encouraged as it is.

I hope that you found this letter instructive and perhaps also useful.

Best wishes,

Erhard and Steven

References

- (1) Pym Cornish, *The Demand for Extra Data. How Direct Entry Can Help.* Hong Kong Symposium Paper 1991.
 - (2) Roger Beeson, *Changes in the Great Britain NRS.* San Francisco Symposium Paper 1993.
 - (3) Pym Cornish, *A Study of High Readers per Copy Magazines.* JICNARS, London 1988.
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