THE DEPENDENCE OF 'RECENT READING' ESTIMATES ON QUESTION STRUCTURE: A COGNITIVE ANALYSIS

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Synopsis

When Average Issue Readership is estimated using the Recent Reading method, there may be variation in the ratio of the number of response categories classifying a respondent as a 'reader' to the total number of alternatives; this ratio is termed here the 'Random Qualification Probability' (RQP).

The RQP affects the readership estimates obtained. Previous evidence for the 'RQP effect' is reviewed and the results presented from new research which further confirms the effect's existence.

The possible causes of the effect are considered but no fully satisfactory model is apparent. Whilst the well-documented phenomenon of 'telescoping' may be a major factor, it cannot be the sole determinant; it is possible that the cognitive strategy adopted by respondents when answering the Recent Reading question is an intervening variable.

Introduction

The objective of readership research is to provide a 'currency', mutually acceptable to buyers and sellers of advertising space in newspapers and magazines, in which that space can be traded. Any discussion of the 'validity' of the estimates obtained, in absolute terms, is a sterile one, since they are largely the product of the operationalisation, in a survey or other research instrument, of some judgementally chosen definition of 'reading' or 'reader': we may reasonably ask 'Have we measured fairly what we set out to measure ?', but not 'Are our measurements *right* ?' However, what is of critical importance is that *comparisons* between publications, on the basis of estimates of their readership, should be as free from bias as is practicable.

Over the history of the development of measures of readership, now spanning some 60 – 70 years, there has been a not inconsiderable volume of methodological research, much of it of high quality, directed towards the investigation of one or another aspect of readership survey design and its apparent effect on the estimates obtained. Welcome as this work has been, we have to note three weaknesses that have applied quite generally: there has often been no theoretical basis for the research; experiments have all too seldom been replicated by other researchers, so that the extent to which results generalise across different circumstances may be tested; and, where a generalised finding *has* been substantiated, at least to a degree, it will often have had little apparent effect on the research design decisions of other practitioners.[1]

This paper offers a very modest attempt not only to replicate one particular, previously demonstrated research method effect, but also to explore and test possible interpretations.

Recency Question Structure and Readership Estimates

Whilst fully acknowledged to be a far from perfect technique, 'Recent Reading' (RR) remains the method of readership estimation in widest use, worldwide.[2] RR requires that the interviewer establishes, for each measured title, when a respondent last read any issue. The proportion claiming to have done so within a period of time preceding the day of interview and equal in length of the interval between the appearance of successive issues is taken as an estimator of the readership of the average issue; this estimate is, in fact, biased, but such 'model bias' is not our concern here.

In an RR-based survey, the form of the critical question may be to offer one set of response alternatives common to all the publication groups measured. Thus, in a survey covering daily, weekly, fortnightly and monthly publications, the question might read:

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[1] We might instance, as an obvious example, the application of an ill-chosen filter question which not only reduces readership estimates (which is unavoidable, to a degree) but which introduces differential bias across groups of publications or individual titles.

[2] See for example Meier, Erhard (1997) *Summary of current readership research. 50 surbey practices in 44 countries* :London: Research Services Ltd, and the update of this review.

'Excluding today, when did you least read or look at any issue of *(title)* ? Was it:

> yesterday
> not yesterday, but within the last week
> not within the last week, but within the last two weeks
> not within the last two weeks, but within the last month
> longer ago'[3]

There are five response alternatives. For a daily newspaper, only one – 'yesterday' – qualifies a respondent as a 'reader' (or, more strictly, qualifies him as contributing towards the estimate of average issue readership); for this publication group, there is one 'positive' response category and four 'negative' ones. Under the hypothesis of random choice between the available alternative responses, we shall term the probability of 'positive' categorisation of a respondent the 'Random Qualification Probability' (RQP). Thus, in the example cited, the RQP for daily publications is 1/(1+4) or 0.2; for weeklies, 2/(2+3) or 0.4; for fortnightlies, 3/(3+2) or 0.6; and for monthlies, 4/(4+1) or 0.8.

Previous research has suggested – quite strongly suggested – that readership estimates are positively correlated with RQP.

This theory was advanced at the very first, New Orleans Symposium by Friedrich Tennstädt and Jochen Hansen.[4] A 1972 experiment by the Institut für Demoskopie, Allensbach applied four different formulations of the RR question to weekly, bi-weekly and monthly magazines, such that the RQP was 1/(1+6) = 0.14, 2/(2+5) = 0.29, 3/(3+4) = 0.43 and 4/(4+3) = 0.57; the sample sizes were approximately 500 in each sub-group. Averaged across the titles, the coverage estimates obtained were as shown below.

MEAN AVERAGE ISSUE READERSHIP

	RQP			
	0.14	**0.29**	**0.43**	**0.57**
Weekly news magazines	16.9	22.6		
Radio and TV guides	11.9	13.8		
Bi-weeklies	4.5	8.3	10.4	
Monthlies		10.1	13.2	15.1

The apparent, positive association between RQP and Average Issue Readership is readily apparent.

In the same paper, Tennstädt and Hansen also cited results from a split-sample test carried out by Allensbach's Dr Ring in conjunction with the University of Mainz in 1980. The readership of the weekly magazine *Stern* was measured using an 'open' RR question, 'When did you last read or leaf through … ?' and with RQPs of 1/(1+1) = 0.50 and 1/(1+4) = 0.20; the AIR estimates were 52.3% and 36.1%, respectively, a difference significant at the 95% level. Because of the question formulation, this result is of particular significance, as we shall see later.

At the Montreal Symposium, Eva-Maria Hess and Hans Erman Scheler reported results from experimental modifications of the German Media Analyse questionnaire; the objective of the experimentation had been to arrive at a survey model that minimised the load on respondents and interviewers, without loss of information or distortion of existing, relative AIR levels. One change made was in the RR question format, with the following results:

GROSS AVERAGE ISSUE READERSHIP

	RQP		
	0.25 **(standard)**	**0.50** **(version 1)**	**0.50** **(version 2)**
Weeklies	221.2	282.7	272.3

In the table above, 'standard' refers to the MA, as it then stood, whilst 'version 1' and 'version 2' are the experimental questionnaires; it should be noted that both of them also introduced changes in the general and time-period filter questions, so the effect seen is not one of RQP alone. However, the authors comment:

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[3] This question wording is not offered as an ideal example of good practice, but merely to make fully clear the mutually exclusive and collectively exhaustive periods to which reference is being made.

[4] Tennstädt, Friedrich W R and Jochen Hansen (1981) 'Validating the recency and through-the-book techniques' in Henry, Harry (ed) *Readership research: theory and practice* London: Sigmatext

"The number of possible answers has an influence on the results, the amount of influence being dependent on the type of possible answers. With difficult demands on the memory one must assume that with a reduction in the number of possible answers the 'chance probability' increases, although one must not always assume that the 'chance probability' is important to any great extent." [5]

The paper includes comparable results for bi-weekly and monthly magazines which are not, however, quoted here since the RQPs cannot be deduced from the text.

Also in Montreal, Bouke Walstra reported the effects of changes in the Dutch National Onderzoek Persmedia (NOP) between 1979 and 1982.[6] In 1979, the RQP had been constant across publication groups but, in the 1982 survey, the introduction of a common RR question with 13 response alternatives led to wide variation in the RQP; at the RR question it became 1/(1+12) for daily newspapers, 5/(5+8) for weekly magazines and 7/(7+6) for monthlies. The results were as follows:

Index of total readership (1979 = 100)

	RQP		Readership index *
	NOP 79	NOP 82	
Daily newspapers	0.50	0.46	122
Weekly magazines	0.50	0.69	147
Monthly magazines	0.50	0.85	171

* Average of the individual publications' indices

Index of Average Issue Readership (1979 = 100)

	RQP		Readership index *
	NOP 79	NOP 82	
Daily newspapers	0.33	0.08	115
Weekly magazines	0.33	0.38	141
Monthly magazines	0.33	0.54	167

* Average of the individual publications' indices

(The 1982 AIR estimates were corrected for changes in circulation since 1979, before calculating the indices.) Not only is the RQP effect very clearly apparent but, again, its magnitude is far from negligible. Commenting on these results, Walstra noted that "We suspect that the Allensbach effect in fact derives to a large extent from the telescoping effect"; we shall have cause to challenge this viewpoint.

In Salzburg, Wilfried Wenzel and Rolf Speetzen picked up the reference to 'chance probability' cited above and suggested that, in the 1982 AG.MA work, the differences in the results obtained from the standard and experimental questionnaires could be satisfactorily explained by assuming that a certain proportion of claims – at all of the stages of the general filter, time-period filter and RR questions – were randomly distributed across the available response categories; this proportion they empirically estimated at 14% - 15%, in the AG.MA work. Wenzel and Speetzen also noted that the apparent RQP effect varied with the AIR of a publication and with reading frequency. [7]

Finally here, at the San Francisco Symposium, we compared the ratios of the RQPs and of the AIRs before and after each of two main changes in the British National Readership questionnaire: the introduction of the Extended Media List (EML) format from 1984; and the change to Computer Assisted Personal Interviewing (CAPI) in July, 1992.[8] The results from the second of these comparisons are shown below.

[5] Hess, Eva-Maria and Hans Erdman Scheler (1984) 'Multi-stage experiments in questionnaire survey methodology for magazines in the AG.MA national readership surveys: findings and consequences' in Henry, Harry (ed) *Readership research: Montreal 1983.* Amsterdam: Elsevier Science Publishers

[6] Walstra, Bouke (1983) 'A new method for the NOP survey – some analyses' in Henry, Harry *op cit*

[7] Wenzel, Wilfried and Rolf Speetzen (1987) 'Debugging random errors from media analysis data – a new type of validation' in Henry, Harry (ed) *Readership research: theory and practice. Salzburg 1985* Amsterdam: Elsevier Science Publishers

[8] Brown, Michael (1993) 'Questionnaire structure and readership levels' *Readership Research Symposium 6. San Francisco 1993. Session papers* London: BMRB International/Research Services

RQP Ratios and AIR Ratios,
July – Dec 1992 (CAPI) / Jan – June 1992 (EML)

	RQP ratio	Mean AIR ratio
Daily newspapers (10)	0.465	1.162
Sunday newspapers (10)	0.235	1.036
Colour supplements (6)	0.235	1.043
General weekly magazines (11)	0.235	1.039
Women's weekly magazines (6)	0.235	1.100
Fortnightly magazine (1)	0.222	1.102
General monthly magazines (7)	0.338	1.216
Women's monthly magazines (26)	0.338	1.195
Bi-monthly magazine (1)	0.375	1.076

Ignoring the comparatively unstable results for the single fortnightly and bi-monthly magazines, the association of the RQP and AIR ratios is reasonably strong, as a regression analysis of the above table's data shows.

The evidence is thus not inconsiderable that an 'RQP effect' exists and that its magnitude can be considerable but, since Tennstädt and Hansen first drew attention to it 18 years ago, there has been remarkably little theorising as to the effect's causes or its explanation, with two exceptions.

First, there is the German proposal that what we are seeing is the result of the *random* allocation, across available response categories, of some proportion of all claims by respondents. But here a difficulty occurs, since the effect is still clearly observable when an 'open' question is employed – as in both the *Stern* experiment and in all the British data – so that no pre-coded response alternatives at all are apparent to the respondent. In such circumstances it is, of course, possible to conceive a proportion of responses to a 'when last read' question as naming a randomly selected period of elapsed time, but such a response style will *not* account for the effects observed. The proportion of these random claims coded (by the interviewer) as 'qualifying' will be constant (sampling error apart), irrespective of the number of (concealed) codes which together constitute the qualifying period. We therefore need to look further afield than any explanation which rests solely on a random choice between response alternatives.

Second, there is the Dutch suggestion that the RQP effect is closely linked to 'telescoping'. That possibility is best considered in the context of a rather wider discussion of how respondents arrive at the replies they offer to the questions researchers pose.

Theoretical Considerations

Some of the most useful contributions to survey research theory in recent years have come from the area of cognitive psychology; they have provided a framework within which the processes involved in the interview may be systematically studied. These contributions do no appear to have made wide contact with commercial market research in general or readership measurement in particular, although Scott McDonald provided an extremely helpful introduction in San Francisco.[9]

Irrespective of the question asked, we may envisage a respondent as necessarily going through four stages in providing a reply: *comprehension* of the question and of the task they have been set; selection of a *cognitive strategy*; application of that strategy, in order to provide the makings of an answer, whether by retrieval of information from memory or otherwise; and, finally, *editing* of the information, to conform with the response alternatives available or the expectations aroused directly by the interviewer or by other cues available to the respondent.

The concept of 'cognitive strategy' may require some elaboration. Consider a typical question on frequency of reading: 'In the past month, how many copies of *(title)* have you read or looked at ?' Assuming the question is comprehended as the researcher intended, the respondent could, in theory, review their memories of *each day* in the reference period, starting with 'yesterday' and working backwards, enumerating each issue reading event encountered; this is one possible 'strategy', involving *counting*, but is highly unlikely to be adopted, in view of the effort it demands. At the other extreme, a respondent might (subconsciously) argue 'I usually see every issue – last month was not atypical – I'll say four', thus adopting a strategy of *estimation*.

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[9] McDonald, Scott C (1993) 'Response effects in survey measures of behaviour: insights from research in other fields' *Readership Research Symposium 6. San Francisco 1993. Session papers* London: BMRB International/Research Services

The Recent Reading question itself does not pose a basically different situation. Asked 'When did you last read or look at *(title)* ?', the commonest strategy adopted may be to retrieve the most readily accessible memory of a relevant reading event, date it and edit that information to conform with the available response alternatives. (We may note that the reading event memory most readily accessible may or may not be, factually, of the one occurring most recently; much will depend on the encoding that took place when the memory trace was formed and thus on the cues available to aid retrieval.) But it is perfectly possible for the respondent to adopt a simpler, estimation strategy: the subconscious dialogue then runs, for example 'It's a weekly magazine – I only read it about half the time – I'll say two weeks ago' (or, if the respondent is statistically inclined 'one week ago' as being the best estimate, in the absence of other information).

Now the dating of recall-based information is, as we well know, subject to bias, and principal amongst its possible biases is that due to *telescoping*. The general acceptance of this phenomenon as relevant to readership research dates largely from Val Appel's seminal paper at the first Symposium[10]; however, it was first documented in the psychological literature in 1964[11] and there are, by now, a host of academic references and at least three models of the process. Perhaps the most interesting of these, due to Huttenlocher, Hedges and Bradburn,[12] sees telescoping as due to memory retrieval errors and suggests three components: the relatively greater retention of recent events; the random occurrence of errors in the dating of recalled events, which increases linearly with time; and the fact that only events occurring *earlier* can be misallocated to a reference period.

When telescoping occurs – as it is generally accepted to do quite widely in readership estimation – higher rates are obtained for reference periods that are close to the present than for those that are more distant; thus, if today is Monday, and I ask about 'yesterday', Sunday, I am likely to obtain a higher estimate of claimed readership on that day than if my questioning refers to the Sunday a week ago. However, this phenomenon cannot *on its own* provide a satisfactory explanation of the origin of RQP effects. As RQP increases, the reference period – 'yesterday' or 'the past week' or 'the past month', for example – will tend to be sub-divided into shorter intervals; but this does not alter the fact that it is an *unchanged* publication interval that determines the classification of a respondent as contributing or not contributing to the AIR estimate. And when RR questions embodying varying RQPs are asked, it is against a background of a constant distribution, in time, of actual reading events and of a constant distribution of random dating errors. Consequently, we cannot expect any simple, positive association between RQP effects and the extent of telescoping-based bias. But telescoping *could* enter the equation in a different, indirect way.

Consider a very simple RR question, offering the response alternatives

> within the past week
> longer ago.

For a weekly publication, the RQP is $1/(1+1) = 0.50$.

In the interests of increasing the RQP (and thus, hopefully, the magazine's readership estimate !), the response alternatives are amended to

> yesterday
> not yesterday, but within the past week
> longer ago

for which the RQP is $2/(2+1) = 0.67$, or even to

> yesterday
> not yesterday, but with the past three days
> not within the past three days, but within the past week
> longer ago

giving a RQP of $3/(3+1) = 0.75$. In one sense, the perceived complexity of the question has become progressively greater; but note that the furthest time horizon about which an event dating decision has to be made is still only a week.

[10] Appel, Valentine (1982) 'Telescoping: the skeleton in the recent reading closet' in Henry, Harry (ed) *Readership research: theory and practice* London: Sigmatext

[11] Neter, J and J Waksberg (1964) 'A study of response errors in expenditure data from household interviews' *Journal of the American Statistical Association* **59** pp18-55

[12] Huttenlocher, J, L V Hedges and N M Bradburn (1990) 'Reports of elapsed time: bounding and rounding processes in estimation' *Journal of experimental psychology, learning, memory and cognition* **16** pp196-213

Now consider the changes to the original response alternatives necessary to *decrease* the RQP:

> within the past week
> not within the past week, but within the past two weeks
> longer ago

where the value is 1/(1+2) or 0.33, or

> within the past week
> not within the past week, but within the past two weeks
> not within the past two weeks, but within the past month
> longer ago

which lowers the RQP to 1/(1+3) = 0.25. The time horizon has, necessarily, lengthened.

Consequent on the above analysis, our basic theory to account for the RQP effect is as follows.

The lower the RQP, the more likely is an RR question to present response alternatives referring to relatively 'distant' time horizons.

The longer the time period in relation to which definitive choices are required, the more demanding the question may appear to respondents.

The more demanding the perception of the question, the less likely is a respondent to opt for a recall-and-date-the-event strategy and the more likely are they to use an estimation approach.

Telescoping can *only* occur where the strategy is recall-and-date, Consequently, misallocation of reading events to the reference period decreases with decreasing RQP.

At the same time, the less frequently a respondents actually reads, the less attractive will a recall-and-date strategy be to them, since their last reading occasion will be relatively distant, thereby making the task more demanding. Consequently, respondents adopting an estimation strategy will be biased towards infrequent readers, amongst whom the tendency will be to *under*estimate reading regularity, leading to a further lowering of the RR estimate.

There are at least two major weaknesses in the above theory, which we shall only briefly address.

In the first place, widely varying RQPs most often arise (as in the British National Readership Survey) from the use of a single, 'portmanteau' set of RR response alternatives, with the same scale 'cut' at different points, for the purposes of different publication groups; in such circumstances, how can the presentation of the *same* stimulus generate *varying* perceptions of question difficulty ? Here, there is one other relevant cue generally available to respondents: publication interval. It may be this factor which drives choice of cognitive strategy, but then another difficulty arises: it will be the longer-publication-interval titles that will tend to have the *higher* RQP values.

A second, major difficulty still remains: accounting for the RQP effect when an 'open' RR question is employed, so that the response classifications are unknown to the respondent. We would only say, at this stage, that here again, publication interval – which will generally be known to respondents – may provide a relevant cue.

Some New Data

Further to investigate the occurrence of RQP effects and in an attempt better to understand their pattern, a simple, experimental readership survey was carried out amongst samples of the UK and Eire employees of Taylor Nelson Sofres plc (TNS).

12 publications were covered: three national Sunday newspapers, three weekly magazines and six monthlies. The titles were chosen to yield reasonable levels of coverage, rather than necessarily to be representative of their respective publication groups.

There were four versions of the questionnaire. Common to all four versions was a three-point, verbal reading frequency scale which served also as a filter question. The RR question which followed was varied in the response alternatives offered so that the RQPs were 2/(2+1) = 0.67 (Version 1), 1/(1+1) = 0.50 (Version 2) and 1/(1+2) = 0.33 (Version 3). Version 4 replicated the response alternatives of Version 1, but the RR question was asked in two stages; for weekly publications, for example, the response alternatives here were within the last week/longer ago and, if 'within the last week', yesterday/longer ago. The interview closed with optional classification questions on sex and age group; replies were anonymous, although respondents could optionally request the results of the research. The full questionnaire wordings are shown in the Appendix.

The survey was conducted using the TNS Intranet and Pulse Train Technology's Bellview Web software. Just under 1,300[13] employees were e-mailed, inviting them to participate in the survey and providing them with the address for the website holding the questionnaire, which they could access directly from the e-mail of from an alternative hypertext link inserted in the Intranet home page. The survey was also advertised *via* posters on all staff notice boards at seven sites. 463 clean response files were obtained, implying a maximum response rate of approximately 35%, but employees not e-mailed directly could have participated. The website remained open for approximately ten days, but the vast majority of responses were filed on the day the e-mail was received or the day following. Gross hits on the site were in excess of 500, the discrepancy being accounted for by connection difficulties when opening the questionnaire or during its completion.

Site visitors were allocated to questionnaire version at random. Within version, successive respondents were asked about weekly publications first or monthlies first. Within publication group, the title presented first was cyclically rotated.

The demographic profiles of the achieved samples were as follows:

Sub-Sample profile by Age group within Sex

		Version 1		Version 2		Version 3		Version 4	
		no	%	no	%	no	%	no	%
TOTAL*		122	100.0	129	100.0	109	100.0	100	100.0
Male	15 – 34	27	22.1	37	28.7	23	21.1	30	30.0
	35 – 54	28	22.9	27	20.9	15	13.8	22	22.0
	≥ 55	-	0.0	1	0.7	-	0.0	1	1.0
Female	15 – 34	43	35.2	47	36.4	47	43.2	30	30.0
	35 – 54	19	15.6	17	13.2	20	18.3	14	14.0
	≥ 55	2	1.6	-	0.0	4	3.7	3	3.0

* excluding refusals – Version 1, 1; Version 2, 2; Version 3, 1

It will be seen that the random assignment to questionnaire version did not produce exactly equal sub-sample sizes and that, within version, there was some non-negligible variation in demographic profile, particularly as regards the over-representation of women in the Version 3 sub-sample. Both these facts may be largely attributed, sampling error apart, to biases in the distribution of respondents who contacted the website but yet failed to complete the questionnaire satisfactorily.

The profile by intensity of reading was as follows:

Intensity of Reading by sub-sample

	Version 1		Version 2		Version 3		Version 4	
	no	%	no	%	no	%	no	%
TOTAL	123	100.0	131	100.0	110	100.0	100	100.0
Read one or more weeklies in past week	52	42.2	58	44.3	31	28.2	44	44.0
Read one or more monthlies in past month	64	52.0	76	58.0	43	39.1	69	69.0

The disparities are larger enough possibly to mask the experimental effects under investigation particularly, again, in respect of the Version 3 sub-sample.

It had originally been intended to conduct all subsequent analyses unweighted, relying entirely on the randomisation across questionnaire versions to equalise the effects of the co-variates of RQP. However, in view of the above profile differences, it was decided to so weight the sub-samples as to equalise their profiles by claimed reading frequency, within publication. (The reading frequency question, it will ve recalled, was uniform across versions and preceded the experimental manipulation of RQP.)

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[13] This number is less than the UK/Eire headcount, and was determined by employees' access to the Intranet and the availability of convenient group e-mail addresses

Considering first the evidence for the main effect under investigation, the weighted Average Issue Readership estimates were as follows:

Average Issue Readership

	Version 1 (RQP 0.67)		Version 2 (RQP 0.50)		Version 3 (RQP 0.33)	
	%	index	%	index	%	index
Sunday Mirror	7.3	115	6.3	100	3.2	50
The Mail on Sunday	16.8	83	20.3	100	14.1	69
The Sunday Telegraph	12.7	97	13.2	100	6.3	48
Radio Times	9.2	91	10.1	100	6.7	66
Take a Break	3.2	297	1.1	100	1.1	100
Woman's Own	3.9	158	2.5	100	1.7	69
mean, six weekly titles	8.9	140	8.9	100	5.5	67
Sky TV Guide *	17.6	111	15.8	100	12.7	80
Reader's Digest	6.5	194	3.4	100	6.4	191
FHM (For Him Magazine)	26.4	123	21.4	100	12.2	57
Sainsbury's Magazine	13.5	123	10.9	100	8.1	75
Good Housekeeping	5.3	138	3.9	100	3.0	77
Cosmopolitan	13.1	79	16.6	100	7.8	47
mean, six monthly titles	13.7	128	12.0	100	8.4	88

* now Skyview TV Guide

Considering the weekly publications title-by-title, for only three out of the six is it true that $AIR_{V.1} > AIR_{V.2} > AIR_{V.3}$, as would be expected from the RQPs; in the other three cases, the second inequality holds, but not the first, as is also true for the average readerships. However, indexing the results on the Version 2 levels (RQP = 0.50), the mean indices are very clearly in the expected order. For the monthlies, four out of the six cases conform fully with expectations and the rankings of both the average AIR and the mean index are as would be predicted.

Three further points are worth noting: the *magnitude* of the apparent RQP effect; its unequal impact, across titles; and that it is the more pronounced for the smaller titles (as Wenzel and Speetzen also predicted).

In the light of the theoretical discussion presented earlier, two further analyses are of particular interest.

First, Version 3 of the questionnaire allows AIR estimates to be compared as between the publication interval immediately preceding the date of interview and the one before that. The results are as follows:

Average Issue Readership

	VERSION 3	
	Last week %	Week before %
Sunday Mirror	3.2	5.0
The Mail on Sunday	14.1	12.0
The Sunday Telegraph	6.3	6.8
Radio Times	6.7	3.6
Take a Break	1.1	3.4
Woman's Own	1.7	2.5
mean, six weekly titles	5.5	5.5

	VERSION 3	
	Last month %	Month before %
Sky TV Guide *	12.7	5.8
Reader's Digest	6.4	3.4
FHM (For Him Magazine)	12.2	9.7
Sainsbury's Magazine	8.1	6.6
Good Housekeeping	3.0	5.6
Cosmopolitan	7.8	14.0
mean, six monthly titles	8.4	7.5

* now Skyview TV Guide

Telescoping theory would suggest two features in relation to these data. In the first place, the further back in time an event actually took place, the greater the incidence of random dating error; but, whilst 'last week' or 'last month' are bounded by the date of interview, so that their estimates can only be inflated by the misallocation to them of (truly) earlier events, the preceding week's or month's figure could be affected by dating errors in either direction, although one would still expect the net effect to be an overstatement rather than an underestimate. It will be seen that the direction of the differences is not consistent, for either publication group. One should also note, however, that whilst dating error is likely to increase with the time that has elapsed since an event, the rate of change may be such that the differences to be expected between one and two weeks or months back are small.

In relation to *Sky TV Guide*, a very rapid rate of circulation increase in the period preceding the survey should be noted.

Versions 1 and 4 of the questionnaire allow comparisons of readership 'yesterday' (in the case of weekly magazines) or 'last week' (for monthlies) obtained both in a single stage of questioning and in two stages.

Single and two stage readership estimates

	VERSION 1		VERSION 4	
	Last week (RQP = 0.67) %	'Yesterday' (RQP = 0.33) %	Last week (RQP = 0.50) %	'Yesterday' (RQP = 0.50) %
Sunday Mirror	7.3	1.5	8.3	2.8
The Mail on Sunday	16.8	0.7	20.9	7.0
The Sunday Telegraph	12.7	0.9	7.8	2.4
Radio Times	9.2	3.8	7.4	7.4
Take a Break	3.2	0.0	3.1	1.1
Woman's Own	3.9	0.0	2.8	0.6
mean, six weekly titles	8.9	1.2	8.4	3.6

	VERSION 1		VERSION 4	
	Last month (RQP = 0.67) %	Last week (RQP = 0.33) %	Last month (RQP = 0.50) %	Last week (RQP = 0.50) %
Sky TV Guide *	17.6	12.5	17.3	10.2
Reader's Digest	6.5	1.9	3.5	2.8
FHM (For Him Magazine)	26.4	8.1	23.2	9.8
Sainsbury's Magazine	13.5	3.5	13.7	8.6
Good Housekeeping	5.3	0.6	3.7	2.1
Cosmopolitan	13.1	0.8	22.6	8.2
mean, six monthly titles	13.7	4.6	14.0	6.9

* now Skyview TV Guide

On RQP grounds, it would be expected that the 'last week' and 'last month' (AIR) estimates would be the higher for Version 1 of the questionnaire than for Version 4, and this is indeed the case for four out of the six weekly magazines and the same proportion of the monthlies; the variation in question wording should also be borne in mind. But what is particularly striking is that the Version 4 'yesterday' and 'last week' estimates are, with the one exception on *Sky TV Guide*, universally the higher, the difference again being in the RQP-predicted direction.

One other feature of this subset of the data is particularly noteworthy. Taking the Version 4 data for *Reader's Digest* as an example, 3.5% claimed to have last read the magazine in the past month and 2.8% in the past week, so that incidence of readership in the past month but *not* in the past week was (3.5% - 2.8%) = 0.7%. Thus the implied *rate* of last reading in that three week period was 0.7%/3 or a little over 0.2% per week, compared with 2.8% *last* week. Such a discrepancy in the implied rates of some aspect of behaviour, whether readership or otherwise, are very typical of 'telescoped' data.

Discussion and conclusion

Whilst the new, empirical data advanced here (despite their small scale) tend in the main clearly to confirm the existence of an 'RQP effect', its direction and its not inconsiderable magnitude, it has not proved possible to carry very far forward the discussion of its likely causes or strictly to test competing explanations.

Telescoping is a well-documented phenomenon, in relation to which a considerable volume of theoretical work has been undertaken. Nonetheless, we strongly feel that its unquestioning existence is insufficient alone to account for the RQP effect. However, perceived task difficulty, a respondent's choice of cognitive strategy and the different error patterns associated with different strategies may prove to be significant, intermediate variables.

When varying RQPs arise from the (common) use of a single Recent Reading question format to serve several publication groups, RQP effects will tend to be confounded with publication interval influences. In terms of further empirical research, it is therefore likely to prove most informative if RQP is purposefully manipulated *within* publication group, as in the original Allensbach work and here.

What appears to us to be most sorely needed, however, is a 'cognitive laboratory' approach to a better understanding of the tactics respondents adopt in answering a Recent Reading question and the patterns of the errors that are thereby generated.

Acknowledgement

Appendix: The Questionnaires

(Introduction, common to all versions)

Thank you very much indeed for helping with this Intranet survey. It will only take a few moments to complete the questionnaire and your answers will make up the most important part of a conference presentation, later this year. The replies you give will be treated in complete confidence, of course.

If you'd like to know more about the research, there's a space for your eMail address, at the end of the survey.

(Reading frequency question, common to all titles)

Please look at the newspapers and magazines in the following frames and click a button to show, for each one, how often you read or look at it these days.

> I read or look at *(title)* regularly, all or most issues
>
> I read or look at *(title)*, but only occasionally
>
> I don't read or look at *(title)* these days

(Publication group order and title order within group were rotated. The relevant logo was shown at the head of each frame, in black-and-white)

(Recent Reading question, asked of each title claimed as 'regularly' or 'occasionally' and varying by questionnaire version)

(Version 1: Sunday newspapers/weekly magazines)

I last read or looked at *(title)*

> yesterday
>
> not yesterday, but within the last week
>
> longer ago

(Version 1: monthly magazines)

I last read or looked at *(title)*

> within the last week
>
> not within the last week, but within the last month
>
> longer ago

(Version 2: Sunday newspapers/weekly magazines))

I last read or looked at *(title)*

> within the last week
>
> longer ago

(Version 2: monthly magazines)

I last read or looked at *(title)*

> within the last month
>
> longer ago

(Version 3: Sunday newspapers/weekly magazines))

I last read or looked at *(title)*

>   within the last week

>   not within the last week, but within the last two weeks

>   longer ago

(Version 3: monthly magazines)

I last read or looked at *(title)*

>   within the last month

>   not within the last month, but within the last two months

>   longer ago

(Version 4: Sunday newspapers/weekly magazines))

Did you last read or look at *(title)* within the last week ?

>   Yes

>   No, longer ago

If 'Yes'

Did you last read or look at *(title*) yesterday ?

>   Yes

>   No, longer ago

(Version 4: monthly magazines)

Did you last read or look at *(title)* within the last month ?

>   Yes

>   No, longer ago

If 'Yes'

Did you last read or look at *(title*) within the last week ?

>   Yes

>   No, longer ago

(The publication group order and title order within group established by the first question were retained for the Recent Reading question. The relevant logo was shown at the head of each frame, in black-and-white)

(Classification questions and close-out, common to all versions)

It would help me to know something about you, but if you'd prefer not to answer these questions, just click on to the next frame.

Are you:

        15 – 34

        35 – 44

        55 or over

        next frame

Are you:

        male

        female

        next frame

Thank you again for your help with this survey; the results will remain entirely confidential.

If you would like a copy of the full report on the research, please type your email address in the box.

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