THE ACCUMULATION OF AUDIENCES FOR AUSTRALIAN PUBLICATIONS

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by
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INTRODUCTION

The primary aim of readership studies is that of defining the way in which the audience for a publication breaks down into different demographic components. Circulation data can tell us how many people buy a publication but they cannot tell us who is reading the publication. Large samples, covering the whole country and spread evenly through the year represent the only satisfactory answer to this question. The Morgan national readership surveys have been the first in the long history of media research in this country to provide the depth of coverage of the whole country which is essential to the users of readership research.

Nevertheless, while demographic coverage is the principal aim of readership research, it has been usual for readership surveys to look at the accumulative pattern of a publication's readership. If a publication reaches a certain number of people with a typical issue, then two typical issues will not cover twice as many people, since some of the people reached by the second typical issue will have already been reached by the first issue.

The modern development of this concept is that of schedule evaluation. If a schedule comprises several issues of several publications then it should be possible to estimate from a readership study the net number of people reached (that is, at least once by any of the issues of any of the publications). It should also be possible to say how many people are reached exactly once, how many are reached exactly twice, and so on.

Current Australian readership survey organisations purport to carry out these schedule evaluations and they present estimates of the reach of several issues of publications in their regular reports. These surveys utilise a single interview of respondents and in some way they seek from the respondent an estimate of the respondent's frequency of reading. (The most common approach for weekly magazines, for example, is to ask how many of the last four issues were read.)

The alternative is to space the interviewing through time,

either by the use of a diary (as was used in the early and somewhat classical Politz studies of magazine audience accumulation) or to carry out successive waves of interviewing. In fact, for practical purposes, two waves of interviewing suffice to give the essential information required.

The study being reported here was based on two waves of interviewing and is therefore called the "Reinterview Study"; this aspect of its technique is termed "the double interview method".

This study was designed to yield an adequate estimate of the "accumulation pattern" of the publications surveyed.

The data regarding accumulation was developed specifically to be used in a schedule evaluation routine which permits us to superimpose the accumulation pattern from a study such as this on the very much more detailed readership data of our national readership study.

Our reason for measuring the accumulation pattern of publications separately from their readerships is simple. Whereas single interviews provide the depth of coverage required for the measurement of the actual readerships of publications, the sound measurement of accumulation over time requires interviews spaced over time.

The difference between single interview accumulation patterns and double interview accumulation patterns are extremely marked (see Appendix D, - Bulletin No. 5). In effect, the single interview method places an unreal limitation on the reach capability of many publications.

The whole of the following report makes very substantial use of the "casualness" of publications. The basic concept of casualness is easy to understand and we suggest that you read the first few paragraphs under that heading, at least.

CASUALNESS

The "readership" of a publication, expressed as a percentage of a potential audience, represents its achievement within that audience.

The "readership" itself may tend to comprise mostly very regular readers (in which case successive issues will add little to the audience gained), or it may tend to comprise a larger number of more casual readers, so that successive issues will add significant new audience.

The ability of a publication of a given readership to accumulate audience can be expressed as a percentage, just as the readership can.

Actually, we express it as a decimal and call it the casualness. If we say that a magazine has a casualness of .55, then this may be interpreted as meaning that the magazine achieves 55% of the maximum "reach" potential for a magazine of that readership.

Obviously, then if one type of survey method produces casualnesses of .35 for a group of publications and another produces casualnesses of .55 for the same publications, there will be marked differences in the accumulation patterns depicted. A difference of this magnitude would be of similar importance to the publications concerned, as it would be for one publication of the group to be told by one survey organisation that their readership was 35%, and by another that it was 55%.

How do we define "casualness"?

This is best seen by an example:

- Consider a publication reaching 30% of its potential audience with a typical issue (That is, readership = 30%).
- If it were to reach a totally different 30% on a second typical issue, its two-issue reach would be 60%.
- A third issue would bring it to 90% (since typically, there is no overlap between issues).

On the fourth issue it runs out of audience. As a mathematician would say - Reductio Ad Absurdum. That is, it is impossible for typical issues of a publication to have no overlap.

What, then, is the maximum reach that two typical issues can achieve? The first achieves 30%, and it can be shown that the maximum addition that the second will achieve is 30% of the 70% which was not covered by the first issue. That is, the net gain from the first to the second is a maximum of 21%.

Suppose a particular publication, having a 30% readership actually gains 7% reach on a second issue. Then its achievement against maximum reach is 7/21 ≐ 33%. Its casualness is taken as .33.

Why is the casualness important?

1. By its definition, casualness represents the accumulation power of the publication.

2. Because it has a natural relationship to the usual method of extending readership results to several issues (based on the Beta distribution), it permits us to measure readership and casualness separately and to carry out these extensions by taking the readership from one source and the casualness from another.

3. Casualnesses tend to be constant for similar publications - at least, where there are deviations they will tend to make sense + and are quite constant over similar demographic groups.

4. Because casualnesses are similar for similar publications, in spite of varying readerships, they represent an extremely useful means of contrasting different survey methods.

DESIGN CONSIDERATIONS

While the reinterview study was designed to cover all of the publications being surveyed in the main readership study, that is, all the weeklies, dailies, Sunday newspapers and monthly magazines, specific attention was given to the three major women's magazines, ~~that is~~ "The Australian Women's Weekly", the "Woman's Day" and "New Idea". This was done for two reasons.

Firstly, these magazines represent probably the major national vehicles for the marketing of high volume ~~and~~ intensely competitive household products. Secondly, because it was expected that results obtained ~~from~~ these media would point the way for the measurement of other media.

While we had belief in the essential correctness of the approach that we were taking, it seemed obvious that we would learn something from this first accumulation study (as indeed we have done). Furthermore, the field covered by these women's magazines is one which has been the subject of a great deal of discussion and previous research. We do not intend to refer to the research done previously by other researchers, only to observe that these special measurements were undertaken with an eye to some of the contrasts which have appeared in the published accumulation data for these leading publications.

People using these results will realise that it is important for us to be able to demonstrate that we can achieve meaningful accumulations for these publications before proceeding to apply the methods developed to the production of accumulation data for all of the publications being surveyed.

It seems a very reasonable interpretation of Belson's classic study of readership (See Appendix C) that the major error that people make in responding to readership questions is to respond in terms of what they usually do, rather than in terms of what they actually did in the readership period. Confronted with a large number of readership questions, it is not surprising that this happens.

Generally, the effect of this "error" is not too great upon the readership question itself, since among the people who

are in error. There are generally as many people who did not read the publication (although they usually read it) as there are people who did read the publication (although they usually do not). The result is that while readership studies (depending as they do upon the recollections of respondents) can probably not ever give a "true" reflection of readership, the "errors" tend to compensate. They give a demographic patter and a readership result which is generally fair, depending on the manner in which the study is conducted.

However, to establish the accumulation pattern, responses in terms of usual behaviour will distort the results and any tendency of this kind will lead to a reduction in the publication's casualness.

We expected, therefore that the more specific the readership question and the more opportunity the respondent is given to respond truthfully, the more likely it is that we will correctly depict the actual issue-to-issue readership. That is, the casualness should be better measured by taking specific issues which the respondent can identify.

It was decided that two specific issues of these three weekly women's magazines would be used in a number of surveys and that the issues would be chosen so that the build-up of audience for a particular issue could be observed. This would provide information to enable some correction of recently read issues (to allow for those people not yet exposed) and would also allow a measure of "casualness" based on two specific issues exposed in the same interview. The two reinterview surveys would each also use two specific issues, and the two issues were to be different for the pair of surveys comprising the reinterview study.

The aspect of audience build-up in successive weeks since publication represents a study of some importance to readership measurement generally, and although its role in this study is subsidiary to the issue-to-issue accumulation of audience, the results are given special attention under the heading, "Growth of Audience for Specific Issues".

For publications other than these three women's magazines, an appropriate reinterview question was used. For example for weekly publications, the question "Have you read an issue in the last seven days?" was used. In fact this question was also asked for the three women's magazines, to allow a comparison of casualnesses based on specific issues with casualnesses based on the 'last 7 days' question.

MAJOR FINDINGS

It can be seen from the design of the study that we have the opportunity of obtaining casualnesses in three different ways. First of all, we can take the reinterview casualnesses based on the specific issues. Secondly, we can calculate casualnesses based on the two specific issues exposed in the same interview. Thirdly, we can calculate the casualness based on the non-specific issue question "Have you read any issue of this publication in the last seven days?"

In the case of the two casualnesses based on the specific issues, we cannot calculate a clear-cut value of the casualness, since there is some uncertainty about the duplication of issues interviewed very recently after their actual issue date. Nevertheless, we can make two extreme assumptions about what happens in these specific issue cases and it turns out that these two assumptions give casualnesses which are sufficiently close to one another for us to estimate the specific issue casualnesses as being between these extreme values.

On this basis, the average casualness for the three magazines obtained on reinterview of specific issues is .60, the casualness obtained from the pair of issues in the same interview is .39, and the reinterview casualness for the 'last seven days' question is .55.

Since the typical casualness obtained by other researchers on a single interview basis is .33 for these three publications, we can see that the use of specific issues tends to have the effect of increasing the casualness to some degree at least. The use of reinterview as a technique brings about casualnesses which are considerably higher than those obtained from single interviews.

Looking at the results from the specific issue questions and taking account of the fact that the same people were used in the reinterview as were used in the single interview, it is apparent that there is an appreciable inconsistency in the answers given by people to these readership questions. On the surface, it would seem

reasonable to deny each kind of casualness with equal force, or to choose whichever one we like. In other words we might equally say that the single interview casualnesses are correct or that the re-interview casualnesses are correct, or that neither of these gives the right answer.

However, once we make the observation that some kind of respondent bias must be responsible for the difference and when we consider the possible kinds of respondent biases which might operate, it becomes clear that the reinterview approach is very much more resistant to biases than is the single interview approach in respect of casualnesses. We have examined these possibilities in some detail under the heading "The Case for Reinterview" and also in a somewhat technical appendix, which models jointly the respondents' readership behaviour and the respondents' interview response behaviour. The essential conclusion of these deliberations is that there is practically no opportunity for the single interview casualnesses to be correct - perhaps the best that single interview casualnesses could achieve would be to yield the same results as the reinterview casualnesses - whereas while the reinterview casualnesses may not be precisely correct, there is perhaps as much argument in favour of them being an understatement of the true casualnesses as there is in favour of them being an overstatement. In any case, the likelihood is that reinterview casualnesses will be very close to the true casualnesses.

The use of specific issues would be expected to add some validity to the interview situation and we would tend to believe that the .60 average casualness value would be more correct than the .55 value obtained from the 'last seven days' question. However, in view of the prevalence of single interview studies, with their low casualnesses, it is conservative at this stage to make use of the 'last seven days' casualness as a matter of policy. At least only a small understatement of the reach of media schedules would result from the use of these values. It will be appreciated also that conducting reinterview studies on this basis would be simpler in field work and would permit more comprehensive studies.

Major Findings

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It can be seen from the results in this study that the use of specific issues to obtain readership itself yields similar results to the use of the 'last seven days' question. It is an important conclusion of the study that this type of question is sufficient for practical purposes both for readerships and casualnesses, provided reinterviews are used to obtain the casualness values.

Based on these conclusions, we have extended the major national publications surveyed in the reinterview survey to 13 issues in the table below.

TABLE 1

Publication	Demographic	Casualness	Readership %	Reach of Issues 2 %	3 %	4 %	5 %	6 %
AWW	AUST	.5762	35.3	48.5	55.9	60.7	64.3	67.0
W-DAY	AUST	.4979	22.8	31.6	36.8	40.4	43.1	45.2
N.IDEA	AUST	.5219	15.4	22.2	26.5	29.5	31.8	33.7
TV-TMS	AUST	.5148	12.7	18.5	22.0	24.6	26.6	28.3
TV-WK	AUST	.3839	16.9	22.3	25.5	27.6	29.3	30.6
RDIGST	AUST	.3331	24.2	30.4	33.7	36.0	37.7	39.1
AWW	WOMEN	.5825	47.7	62.3	69.7	74.3	77.5	79.8
W-DAY	WOMEN	.5325	33.1	44.9	51.6	56.0	59.2	61.7
N.IDEA	WOMEN	.5233	23.4	32.8	38.4	42.3	45.2	47.5
TVTMS	WOMEN	.4913	12.4	17.8	21.1	23.5	25.3	26.8
TVWK	WOMEN	.3335	18.2	23.2	26.0	27.9	29.4	30.6
RDIGST	WOMEN	.3427	24.2	30.5	34.0	36.4	38.2	39.6
AWW	MEN	.6427	23.0	34.4	41.6	46.6	50.4	53.4
W-DAY	MEN	.5285	12.5	18.3	22.0	24.7	26.7	28.4
N.IDEA	MEN	.5917	12.0	18.3	22.4	25.5	27.8	29.8
TVTMS	MEN	.5427	13.0	19.2	23.1	25.9	28.1	29.9
TVWK	MEN	.4386	15.6	21.4	24.9	27.3	29.1	30.6
RDIGST	MEN	.3276	24.1	30.1	33.4	35.7	37.4	38.7

(Table 1)

Publication	Demographic	Casualness	Reach of Issues 7	8	9	10	11	12	13
			%	%	%	%	%	%	%
AWW	AUST	.5762	69.1	70.9	72.4	73.7	74.8	75.8	76.6
W-DAY	AUST	.4979	47.0	48.5	49.8	50.9	51.9	52.8	53.7
N.IDEA	AUST	.5219	35.3	36.6	37.8	38.8	39.8	40.6	41.4
TV-TMS	AUST	.5148	29.6	30.8	31.9	32.8	33.6	34.3	35.0
TV-WK	AUST	.3839	31.7	32.6	33.5	34.2	34.9	35.4	36.0
RDIGST	AUST	.3331	40.2	41.2	42.0	42.8	43.4	44.0	44.6
AWW	WOMEN	.5825	81.6	83.1	84.3	85.3	86.2	86.9	87.6
W-DAY	WOMEN	.5325	63.7	65.4	66.9	68.1	69.2	70.1	71.0
N.IDEA	WOMEN	.5233	49.4	51.0	52.4	53.6	54.7	55.6	56.5
TV-TMS	WOMEN	.4913	28.1	29.2	30.1	31.0	31.7	32.4	33.0
TV-WK	WOMEN	.3335	31.5	32.4	33.1	33.7	34.3	34.8	35.3
RDIGST	WOMEN	.3427	40.7	41.7	42.6	43.4	44.0	44.7	45.2
AWW	MEN	.6427	55.9	58.0	59.8	61.3	62.7	63.9	65.0
W-DAY	MEN	.5285	29.8	31.0	32.1	33.0	33.9	34.6	35.3
N.IDEA	MEN	.5917	31.4	32.8	34.1	35.2	36.2	37.0	37.9
TV-TMS	MEN	.5427	31.4	32.7	33.9	34.9	35.8	36.6	37.3
TV-WK	MEN	.4386	31.9	33.0	33.9	34.7	35.5	36.1	36.7
RDIGST	MEN	.3276	39.8	40.8	41.6	42.3	43.0	43.5	44.1

CONDUCT OF THE STUDY

Seven surveys of specific issues of the three womens' magazines were carried out between October 23, 1971, and February 26, 1972. The dates of the issues used are detailed below. All seven of these individual studies comprised different but comparable Australia-wide cross sections of more than 1000 men and women aged 16 years and over.

The respondents used for the November 27 survey were recontacted in the December 18 survey. This pair of surveys comprised the reinterview study.

Of the 1,143 respondents interviewed in the week ending November 27, 916 were recontacted. Most of them were reinterviewed in the week ending December 18, but a few hard-to-find people were contacted up until January.

The two surveys comprising the reinterview study together covered four different issues of the three womens' magazines. Three of the other surveys each covered two different issues of these publications. The earliest three surveys covered the same single issue of each of the three publications.

The following tables show the weekend of interviewing, the date of publication of the specific issues shown to respondents, and the number of men and women interviewed:

TABLE 1

Week of Interviewing	Week of Publication		
	Women's Weekly	Woman's Day	New Idea
October 23	October 27	October 25	October 23
October 30	October 27	October 25	October 23
November 13	October 27	October 25	October 23
November 20	(October 27 & (November 24	(October 25 & (November 22	(October 23 & (November 20
November 27	(October 27 & (November 24	(October 25 & (November 22	(October 23 & (November 20
*December 18	(December 1 & (December 22	(November 29 & (December 20	(November 27 & (December 18
February 19	(February 9 & (February 16	(February 7 & (February 14	(February 5 & (February 12
February 26	(February 9 & (February 16	(February 7 & (February 14	(February 5 & (February 12

* On December 18, the same respondents were surveyed as on November 27, less 227 original respondents who could not be contacted again. (See below)

TABLE 2

Week of Interviewing	Sample Size Total	Women	Men
October 23, 1971	1,136	542	594
October 30, 1971	1,160	572	588
November 13, 1971	1,167	556	611
November 20, 1971	1,105	532	573
November 27, 1971	1,143	563	580
*December 18, 1971	916	436	480
February 19, 1972	1,143	618	525
February 26, 1972	1,134	590	544

* On December 18, the same respondents were surveyed as on Nov. 27.

The Questions:

Readership of average issues: Respondents were shown a card listing the weekly and fortnightly magazines in different sequences, and asked:

> "Thinking of the last 7 days - since this time last (SAY TODAY) - have you, yourself, read or looked into any of those magazines - either at home or elsewhere, since this time last (SAY TODAY)? I mean, have you read any issue in the last 7 days? Please be as accurate as you can."

Readership of specific issues: Interviewers showed each respondent specific issues of Women's Weekly, Woman's Day and New Idea in different sequences, and asked:

> "Would you please look through this issue of (SAY MAGAZINE) and tell me if you, yourself, have read or looked into this issue? Not another issue, but this particular issue?"

Respondents were also asked questions on the readership of daily newspapers, Sunday newspapers & weeklies, and monthly magazines. Those questions are described in detail in the Morgan reports of readership of daily newspapers and magazines.

Re-interview survey

In the weekend of November 27, 1971, 1,143 men and women were interviewed, and in the weekend of December 18, 1971, 910 (80%) of those 1,143 men and women were re-contacted and interviewed again.

When the re-interview survey was tabulated, the answers of only those 916 men and women were included.

Survey Method

In each weekend, more than 100 trained interviewers were sent to different randomly-selected "clusters" of 10 dwellings in the districts to be surveyed. A probability sample of those districts was obtained using the electoral rolls.

Before each survey, interviewers were carefully briefed and required to conduct practice interviews, for which we paid.

Each interviewer was given a specific starting-address, and required to follow a fixed route. Interviewers were required to call-back on dwellings where no-one was available. A bonus was paid to interviewers who achieved 10 interviews in 10 adjoining usable dwellings.

All interviews were conducted in people's homes by personal face-to-face interviews with men and women aged 16 and over. Only one person was interviewed at each household.

Most interviews were conducted on Saturdays and Sundays between 9 AM and 2 PM, when most people are at home.

People were selected for interviewing at the pre-selected dwellings by a method which produces the best possible cross-sections of each sex by age.

As an assurance of authenticity, we required our interviewers to record the names, addresses and phone numbers (if any) of the people interviewed.

Immediately after each survey, we wrote or 'phoned between 20% and 100% of the people interviewed in each district, and asked them to confirm some of their answers.

GROWTH OF AUDIENCE FOR SPECIFIC ISSUES

Within the range of the study being carried out, was a special study of the way in which the readership of a specific issue of a publication builds up over time. In each week succeeding the publication of an issue of a weekly magazine, there will be more readers added on. In theory, this growth of the audience over time would take an indefinite number of issues. In practice, most of the people who are going to read the issue will have their first reading of the issue within a relatively short time after the actual publication of the issue.

In one sense, reading exposure continues to build because those people who read the issue will come back to it for further reading. So far as the definition of readership is concerned, however, they need only to have read it once at any time to be counted as readers.

A number of surveys were carried out with the three women's publications at different periods after their publication. These results are detailed in Table 1 below.

TABLE 1

Readership of Specific Issues of

Women's Weekly, Woman's Day, New Idea - Women

	1 week old	2 wks.	3 wks.	4 wks.	5 wks.	6 wks.
	Oct.23 1971	Oct.30 1971		Nov.13 1971	Nov.20 1971	Nov.27 1971
Readership of Specific Issues:	(542)	(572)		(556)	(532)	(563)
	%	%		%	%	%
WW - October 27	42.9	45.2		47.0	45.7	47.0
WD - October 25	31.9	33.7		32.4	35.9	37.6
N.I. - October 23	20.3	22.5		20.0	26.0	26.2
	Nov.20 1971	Nov.27 1971				
	(532)	(563)				
	%	%				
WW - November 24	38.9	46.0				
WD - November 22	26.9	31.6				
N.I. - November 20	19.9	21.9				

(Table 1)

Readership of Specific Issues:	1 week old	2 wks.	3 wks.	4 wks.	5 wks.	6 wks.
				Dec.18 1971		
				(436)		
				%		
WW - December 1				40.2		
WD - November 29				29.7		
N.I.-November 27				24.1		

	Dec.18 1971
	(436)
	%
WW - December 22	30.5
WD - December 20	26.8
N.I.-December 18	18.4

	Feb.19 1972	Feb.26 1972
	(618)	(590)
	%	%
WW - February 9	37.6	42.8
WD - February 7	28.8	31.8
N.I.-February 5	20.5	24.7

	Feb.19 1972	Feb.26 1972
	(618)	(590)
	%	%
WW - February 16	44.9	45.5
WD - February 14	31.1	32.1
N.I.-February 12	23.8	26.5

These results do not give a perfectly clear pattern of the build-up of readership for each individual issue. This is due to three factors:

1. It is probable that individual issues of a publication can behave in a somewhat erratic fashion in the way their audience builds up over time.

2. The sample base for each of these measurements is not large (approximately 500 women) and one can reasonably expect errors of a couple of percentage points in the results. Looked at comparatively, week-to-week movements of 2-3% would not be significant.

3. Since a very large proportion of the final audience is picked up in the first week, the week-to-week increments in audience are small and would therefore require quite large samples for definitive measurement. Had it turned out that the audience build-up started more slowly, then (relatively) the study would have been more precise. (Perhaps the primary success of the study is its demonstration that nearly 90% of these weekly publications' audience is probably acquired in the first week after publication.)

In this situation, it is necessary to treat the data in a very simple-minded fashion and to make it clear that the results are not being taken as definitive. In actual fact, our objective is merely to use the data of these surveys to make corrections to the specific issue results, to allow for the later readers of these issues who have not had their readership (finally) determined at the time of the survey.

We have concentrated the assessment on the series of results at the top of the table which relate to the October 27 issue of the Women's Weekly, the October 25 issue of the Woman's Day, and the October 23 issue of the New Idea.

Our first step in obtaining an approximate assessment of the growth of audience for these specific issues is to take the results from the surveys of November 13,

Growth of Audience for Specific Issues: ...3

November 20 and November 27 (that is, the surveys of 4, 5 and 6 week old issues) and average these readerships to obtain an approximate final level of readership. The results for the October 23 survey (when the issues were one week old) and the October 30 survey (when the issues were two weeks old) are then percentaged on the approximate final levels. The results comprise Table 2.

TABLE 2

Australian Women

	Approx. Final Readership — Average of Weeks 4,5,6	Week 1 as a % of approx. final level	Week 2 as a % of approx. final level
Women's Weekly	46.57	92%	97%
Womans Day	35.3	90%	95%
New Idea	24.07	84%	93%

Averaging these percentages gives the first week's readership as being approximately 89% of the final level and the audience achieved by the second week as being 95% of the final level.

For the sake of being able to make corrections to the readership levels for the specific issues, we take these two values as a base and assume that by the fifth week 100% of the readership has been achieved. It only remains to interpolate sensible values for weeks 3 and 4. We set these at 98% for week 3 and 99% for week 4. Table 3 summarises this assessment and gives the readership corrections applied to the specific issues in the casualness calculations, to account for later readers.

Growth of Audience for
Specific Issues: ...4

TABLE 3

Weeks after publication	1	2	3	4	5
% of Final Audience Achieved	89%	95%	98%	99%	100%
Late Readers Correction to specific issue results	1.12	1.05	1.02	1.01	1.00

DERIVATION OF CASUALNESSES FOR SPECIFIC ISSUES

The use of recent specific issues to assess the casualness has the advantage of greater validity, in that we would expect people to recall more accurately a specific issue that they may have read than to remember whether they had read any issue in the last seven days. The disadvantage, of course, is that a specific issue which is recent will not have covered all of its readership and we will expect that in succeeding weeks some people will come in as readers of the issue.

Under the previous heading, we observed that most of the readership for the weekly women's magazines is contained in the first week and that only approximately 10% of readers are added in succeeding weeks. Nevertheless, these additional readers complicate the analysis. To assess casualness, we need to consider the reading pattern over two issues of a publication. The essential difficulty is that those readers who have not yet been covered by one or other of the issues may eventually read both of the two specific issues in question or may only read one of them.

We would tend to expect that people who did not read in the first week were less substantial readers of the publication, so they would be less likely to be readers of both issues. In fact, by assuming that none of those readers who have not been reached by the specific issues surveyed have read both issues, we can readily carry out our analysis. We simply increase the readership of each of the specific issues to account for the missing readers and load all of this additional readership on to the exclusive readership of each individual issue. In effect, we assume we have covered already all of those who would read both of the specific issues and that any additional readership which the specific issues will pick up will be amongst readers whose readership is sufficiently weak that they will not add to the people who read both issues.

An alternative analysis can be carried out by making the assumption that the readers who have not been covered by the specific issue have the same readership pattern as those who have.

In fact, our approach will be to carry out both of these analyses and compare the results. We are prepared to accept the fact that the real casualness values would lie somewhere in between these alternatives. We term these two analyses:

a) Low Late Readership Analysis

and

b) Equal Late Readership Analysis

Both of these analyses use the following data as a starting point:

Table 1. gives the results for the specific issues, the dates of the issues, the dates of survey and the readerships in percentages of each issue exclusively together with the audiences of both issues for the three womens' publications being analysed. There are nine sets of results in these tables. The first four results refer to the reinterview study and the remaining five give the readership results for the specific issues studied in the same interview. Since two specific issues were presented in each of the interviews, it can be seen that there will be four results for the people who were reinterviewed. The five results for the pairs of specific issues obtained in the same interview are from a series of additional surveys of pairs of issues designed to yield an assessment of the build-up of readership over several weeks.

Table 1. also gives the casualness calculated for these raw results.

For the purposes of the two analyses below we have taken it that a one week old issue needs to have its readership increased by 12% to account for later readers, a two week old issue needs an increase of 5%, a three week old issue needs an increase of 2% and a four week old issue needs to be increased by 1% to account for late readers.

Aust. Women's Weekly

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV24	NOV27	2	16.2	DEC22	DEC18	1	10.1	20.5	.5852
OCT27	NOV27	5	16.8	DEC1	DEC18	4	11.3	29.0	.5701
OCT27	NOV27	5	23.0	DEC22	DEC18	1	7.8	22.8	.6296
NOV24	NOV27	2	12.4	DEC1	DEC18	4	16.0	24.2	.5990
OCT27	NOV20	5	15.4	NOV24	NOV20	1	6.3	30.4	.4399
OCT27	NOV27	6	10.4	NOV24	NOV27	2	9.5	36.6	.3998
DEC1	DEC18	4	14.6	DEC22	DEC18	1	4.9	25.6	.4177
FEB9	FEB19	3	6.6	FEB16	FEB19	2	13.9	31.0	.4179
FEB9	FEB26	4	7.7	FEB16	FEB26	3	10.4	35.1	.3663

New Idea

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV20	NOV27	2	9.2	DEC18	DEC18	1	7.6	10.7	.5433
OCT23	NOV27	5	11.1	NOV27	DEC18	4	9.2	14.9	.5402
OCT23	NOV27	5	15.3	DEC18	DEC18	1	7.6	10.7	.6565
NOV20	NOV27	2	7.2	NOV27	DEC18	4	11.3	12.7	.5379
OCT23	NOV20	5	11.0	NOV20	NOV20	1	4.9	15.0	.4453
OCT23	NOV27	6	8.2	NOV20	NOV27	2	3.9	18.0	.3293
NOV27	DEC18	4	8.9	DEC18	DEC18	1	3.2	15.2	.3578
FEB5	FEB19	3	4.1	FEB12	FEB19	2	7.5	16.3	.3356
FEB5	FEB26	4	6.7	FEB12	FEB26	3	8.5	18.0	.3987

Woman's Day

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV22	NOV27	2	12.0	DEC20	DEC18	1	13.3	13.5	.6548
OCT25	NOV27	5	14.8	NOV29	DEC18	4	8.5	21.2	.5242
OCT25	NOV27	5	18.1	DEC20	DEC18	1	8.9	17.9	.6179
NOV22	NOV27	2	10.0	NOV29	DEC18	4	14.1	15.5	.6019
OCT25	NOV20	5	15.2	NOV22	NOV20	1	4.8	20.7	.4592
OCT25	NOV27	6	10.0	NOV22	NOV27	2	4.0	27.6	.3060
NOV29	DEC18	4	10.1	DEC20	DEC18	1	7.2	19.6	.4259
FEB7	FEB19	3	4.4	FEB14	FEB19	2	6.6	24.5	.2615
FEB7	FEB26	4	5.8	FEB14	FEB26	3	6.1	26.0	.2737

Derivation of Casualnesses
For Specific Issues

...3

a) Low Late Readership Analysis

Table 2 below is calculated on the assumption that all of the increases in readership for the specific issue should be loaded onto the specific issue's exclusive readership. This table should be compared with Table 1. and it will be seen fairly readily how these results have been calculated.

TABLE 2

Aust. Women's Weekly

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV24	NOV27	2	18.0	DEC22	DEC18	1	13.8	20.5	.6851
OCT27	NOV27	5	16.8	DEC1	DEC18	4	11.7	29.0	.5781
OCT27	NOV27	5	23.0	DEC22	DEC18	1	11.5	22.8	.7048
NOV24	NOV27	2	14.2	DEC1	DEC18	4	16.4	24.2	.6404
OCT27	NOV20	5	15.4	NOV24	NOV20	1	10.7	30.4	.5291
OCT27	NOV27	6	10.4	NOV24	NOV27	2	11.8	36.6	.4448
DEC1	DEC18	4	15.0	DEC22	DEC18	1	8.6	25.6	.4993
FEB9	FEB19	3	7.4	FEB16	FEB19	2	16.1	31.0	.4727
FEB9	FEB26	4	8.1	FEB16	FEB26	3	11.3	35.1	.3920

New Idea

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV20	NOV27	2	10.2	DEC18	DEC18	1	9.8	10.7	.6090
OCT23	NOV27	5	11.1	NOV27	DEC18	4	9.4	14.9	.5450
OCT23	NOV27	5	15.3	DEC18	DEC18	1	9.8	10.7	.6994
NOV20	NOV27	2	8.2	NOV27	DEC18	4	11.5	12.7	.5633
OCT23	NOV20	5	11.0	NOV20	NOV20	1	7.3	15.0	.4977
OCT23	NOV27	6	8.2	NOV20	NOV27	2	5.0	18.0	.3546
NOV27	DEC18	4	9.1	DEC18	DEC18	1	5.4	15.2	.4159
FEB5	FEB19	3	4.5	FEB12	FEB19	2	8.7	16.3	.3718
FEB5	FEB26	4	6.9	FEB12	FEB26	3	9.0	18.0	.4149

Woman's Day

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV22	NOV27	2	13.3	DEC20	DEC18	1	16.5	13.5	.7314
OCT25	NOV27	5	14.8	NOV29	DEC18	4	8.8	21.2	.5301
OCT25	NOV27	5	18.1	DEC20	DEC18	1	12.1	17.9	.6795
NOV22	NOV27	2	11.3	NOV29	DEC18	4	14.4	15.5	.6310
OCT25	NOV20	5	15.2	NOV22	NOV20	1	7.9	20.7	.5225
OCT25	NOV27	6	10.0	NOV22	NOV27	2	5.6	27.6	.3389
NOV29	DEC18	4	10.4	DEC20	DEC18	1	10.4	19.6	.4955
FEB7	FEB19	3	5.0	FEB14	FEB19	2	8.2	24.5	.3057
FEB7	FEB26	4	6.1	FEB14	FEB26	3	6.7	26.0	.2934

b) Equal Late Readership Analysis

The Equal Late Readership Analysis involves the derivation of some mathematical results based on the Beta distribution. The basis of the analysis can be seen by considering what happens if one of the issues is recent and one of them is old enough to have covered the whole of its readership. In this case, it can be seen that the exclusive audience for the recent issue will be understated, the audience for both issues will also be understated and in addition, the exclusive audience of the old issue will be overstated, since it will contain readers who would have read both issues.

In order to carry out the analysis, we have, in effect, to start out with a model of people's reading behaviour, and calculate from it the adjustments we expect that we would need to make to the exclusive audiences and to the audience for both issues.

The Beta model postulates that each person has a personal probability x of reading a publication, which we term the person's 'reading rate', and that these reading rates are distributed through the population with the following frequency function:

$$f(x) = x^{p-1}(1-x)^{q-1}/B(p,q) \qquad (0<x<1)$$

where p,q are the parameters of the model and B(p,q) is the Beta function (i.e., the complete Beta integral).

In the following we will use t = p+q as a (dependent) parameter for convenience.

Suppose one issue of the pair being measured is sufficiently recent that only b_1 of its eventual audience has read the publication at the time of survey and the other has only been read by b_2 of its eventual audience. That is, if r is the full readership of the publication, (assumed constant from issue to issue) then the first issue would yield $b_1 r$ readership in survey, and the second issue would yield $b_2 r$ readership.

Derivation of Casualnesses
For Specific Issues

Considering the two issues simultaneously and writing

$$B(u) = \int_0^u x^{p-1}(1-x)^{q-1}dx$$

for the distribution function, we have that the exclusive audience E_1' shown in survey for the first issue is

$$E_1' = \int_0^1 b_1 x(1-b_2 x)dB$$

$$= b_1\int_0^1 x(1-x)dB + b_1(1-b_2)\int_0^1 x^2 dB$$

Now $\int_0^1 x(1-x)dB = B(p+1,q+1)/B(p,q)$

$$= \frac{p.q}{t(t+1)}$$

And $\int_0^1 x^2 dB = B(p+2,q)/B(p,q)$

$$= \frac{p(p+1)}{t(t+1)}$$

Then $E_1' = \frac{b_1 p(q+(1-b_2)(p+1))}{t(t+1)}$

This is the exclusive audience shown by survey. The expected true exclusive audience E_1' is easily obtained from this expression by putting $b_1 = b_2 = 1$

$$E_1 = \frac{pq}{t(t+1)}$$

Therefore, the correction factor C we need to apply to the survey values of the exclusive audiences to account for the late audiences is

$$C_1 = E_1/E_1'$$

$$= \frac{pq}{b_1 p(q + (1-b_2)(p+1))}$$

We can similarly derive that the correction C_b required for the "read both" data is

$$C_b = 1/b_1 b_2$$

although this result does not depend on a specific model such as the Beta model as the C_1 correction does.

Of course, the correction C_2 for the second exclusive audience is simply obtained by interchanging b_1 and b_2 in C_1.

It is important to note that the C_1 correction may be either an upwards or a downwards correction.

In order to apply these corrections, we need to know the Beta parameters p,q and these would need to be derived from the full readership and the correct casualness for the publication.

Perhaps the best procedure would be an iterative one, that is, to start with approximations for the readership and casualness, calculate the corrections, calculate a new value for the readership and casualness, recalculate the corrections and continue recalculating until constant results are obtained.

However, the data does not justify such sophistication. Provided we can be satisfied that approximate values for the readership and casualness produce satisfactory corrections, then it will be sufficient to make a single correction. To do this, we have run out a tabulation (Table 3) which gives the correction factors for b_1=.9 and 1 and for b_2=.9 and 1 (four tables) and for readerships of 10%, 20%, 30%, 40%, 50% and for casualnesses of .3, .4, .5, .6.

On account of this table (which shows that the corrections are not really great and do not vary very much) we adopt the procedure of calculating the casualnesses and readerships from the raw data, calculating the corrections from these, and then calculating the corrected casualnesses. The results are given in Table 4.

TABLE 3.

Readership Adjustments for Various Readerships, Casualnesses

B1 = .9, B2 = .9

Readership	Casualness .3	.4	.5	.6
10.0	.875	.943	.990	1.024
20.0	.844	.916	.966	1.003
30.0	.807	.884	.937	.976
40.0	.763	.844	.901	.943
50.0	.709	.794	.855	.901

B1 = .9, B2 = 1.0

Readership	Casualness .3	.4	.5	.6
10.0	1.111	1.111	1.111	1.111
20.0	1.111	1.111	1.111	1.111
30.0	1.111	1.111	1.111	1.111
40.0	1.111	1.111	1.111	1.111
50.0	1.111	1.111	1.111	1.111

B1 = 1.0, B2 = .9

Readership	Casualness .3	.4	.5	.6
10.0	.787	.849	.891	.922
20.0	.759	.825	.870	.902
30.0	.727	.795	.843	.879
40.0	.687	.759	.811	.849
50.0	.638	.714	.769	.811

B1 = 1.0, B2 = 1.0

Readership	Casualness .3	.4	.5	.6
10.0	1.000	1.000	1.000	1.000
20.0	1.000	1.000	1.000	1.000
30.0	1.000	1.000	1.000	1.000
40.0	1.000	1.000	1.000	1.000
50.0	1.000	1.000	1.000	1.000

TABLE 4

Aust. Women's Weekly

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV24	NOV27	2	15.8	DEC22	DEC18	1	9.7	24.1	.5442
OCT27	NOV27	5	16.8	DEC1	DEC18	4	11.2	29.3	.5669
OCT27	NOV27	5	23.0	DEC22	DEC18	1	7.5	25.5	.6076
NOV24	NOV27	2	12.0	DEC1	DEC18	4	15.9	25.7	.5823
OCT27	NOV20	5	15.4	NOV24	NOV20	1	5.4	34.0	.4116
OCT27	NOV27	6	10.4	NOV24	NOV27	2	8.5	38.4	.3781
DEC1	DEC18	4	14.4	DEC22	DEC18	1	4.3	29.0	.3845
FEB9	FEB19	3	6.3	FEB16	FEB19	2	12.7	33.2	.3860
FEB9	FEB26	4	7.5	FEB16	FEB26	3	9.9	36.2	.3501

New Idea

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV20	NOV27	2	9.1	DEC18	DEC18	1	7.5	12.6	.5019
OCT23	NOV27	5	11.1	NOV27	DEC18	4	9.2	15.0	.5373
OCT23	NOV27	5	15.3	DEC18	DEC18	1	7.7	12.0	.6334
NOV20	NOV27	2	7.1	NOV27	DEC18	4	11.3	13.5	.5218
OCT23	NOV20	5	11.0	NOV20	NOV20	1	4.6	16.8	.4150
OCT23	NOV27	6	8.2	NOV20	NOV27	2	3.6	18.9	.3138
NOV27	DEC18	4	8.8	DEC18	DEC18	1	2.8	17.2	.3233
FEB5	FEB19	3	4.0	FEB12	FEB19	2	6.9	17.5	.3077
FEB5	FEB26	4	6.6	FEB12	FEB26	3	8.3	18.5	.3869

Woman's Day

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Cas-ual-ness
NOV22	NOV27	2	12.0	DEC20	DEC18	1	13.4	15.9	.6213
OCT25	NOV27	5	14.8	NOV29	DEC18	4	8.4	21.4	.5211
OCT25	NOV27	5	18.1	DEC20	DEC18	1	8.7	20.0	.5931
NOV22	NOV27	2	9.9	NOV29	DEC18	4	14.1	16.4	.5869
OCT25	NOV20	5	15.2	NOV22	NOV20	1	4.4	23.2	.4315
OCT25	NOV27	6	10.0	NOV22	NOV27	2	3.5	29.0	.2907
NOV29	DEC18	4	10.0	DEC20	DEC18	1	6.5	22.2	.3878
FEB7	FEB19	3	4.1	FEB14	FEB19	2	5.7	26.2	.2292
FEB7	FEB26	4	5.6	FEB14	FEB26	3	5.7	26.8	.2588

c) Rationalisation

It can be seen that the Low Late Readership analysis and the Equal Late Readership analysis produce different results, with somewhat higher results for the Low Late Readership Analysis. Nevertheless the differences are not unduly large, averaging .07.

We feel that the true casualnesses would lie between these values, so it is useful for comparison purposes to calculate the mid-point of these results. These are given in Table 5, in a similar format to tables 1, 2 and 4.

TABLE 5

Aust. Women's Weekly

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Casualness
NOV24	NOV27	2	16.9	DEC22	DEC18	1	11.7	22.3	.6145
OCT27	NOV27	5	16.8	DEC1	DEC18	4	11.4	29.1	.5725
OCT27	NOV27	5	23.0	DEC22	DEC18	1	9.5	24.2	.6564
NOV24	NOV27	2	13.1	DEC1	DEC18	4	16.1	24.9	.6114
OCT27	NOV20	5	15.4	NOV24	NOV20	1	8.1	32.2	.4708
OCT27	NOV27	6	10.4	NOV24	NOV27	2	10.1	37.5	.4117
DEC1	DEC18	4	14.7	DEC22	DEC18	1	6.4	27.3	.4419
FEB9	FEB19	3	6.9	FEB16	FEB19	2	14.4	32.1	.4295
FEB9	FEB26	4	7.8	FEB16	FEB26	3	10.6	35.6	.3711

New Idea

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Casualness
NOV20	NOV27	2	9.7	DEC18	DEC18	1	8.6	11.6	.5553
OCT23	NOV27	5	11.1	NOV27	DEC18	4	9.3	15.0	.5411
OCT23	NOV27	5	15.3	DEC18	DEC18	1	8.8	11.3	.6664
NOV20	NOV27	2	7.6	NOV27	DEC18	4	11.4	13.1	.5425
OCT23	NOV20	5	11.0	NOV20	NOV20	1	5.9	15.9	.4563
OCT23	NOV27	6	8.2	NOV20	NOV27	2	4.3	18.4	.3342
NOV27	DEC18	4	9.0	DEC18	DEC18	1	4.1	16.2	.3694
FEB5	FEB19	3	4.2	FEB12	FEB19	2	7.8	16.9	.3398
FEB5	FEB26	4	6.8	FEB12	FEB26	3	8.7	18.3	.4009

Woman's Day

1st Issue				2nd Issue					
Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Issue Date	Survey Date	Weeks Old	Excl. Audnc %	Audnc for Both Issues	Casualness
NOV22	NOV27	2	12.6	DEC20	DEC18	1	14.9	14.7	.6763
OCT25	NOV27	5	14.8	NOV29	DEC18	4	8.6	21.3	.5256
OCT25	NOV27	5	18.1	DEC20	DEC18	1	10.4	19.0	.6364
NOV22	NOV27	2	10.6	NOV29	DEC18	4	14.2	16.0	.6090
OCT25	NOV20	5	15.2	NOV22	NOV20	1	6.1	21.9	.4769
OCT25	NOV27	6	10.0	NOV22	NOV27	2	4.6	28.3	.3148
NOV29	DEC18	4	10.2	DEC20	DEC18	1	8.5	20.9	.4417
FEB7	FEB19	3	4.6	FEB14	FEB19	2	6.9	25.4	.2675
FEB7	FEB26	4	5.9	FEB14	FEB26	3	6.2	26.4	.2761

THE CASE FOR REINTERVIEW

In spite of the use of specific issues in our questionnaire (which we would have anticipated to have yielded more accurate responses) the casualnesses we obtain from single interviews are only slightly higher than those obtained by other researchers and the casualnesses obtained on reinterview are of a similar order to those obtained by previous surveys using more than a single interview in this country.

The fact is that the same respondents respond differently in the single interview from the response in a double interview approach. Since the same respondents were used, then their behaviour is clearly inconsistent. It would seem, therefore, that it is strictly a moot point as to which of these characteristic ways of responding is the correct one, if indeed, either of these responses can be taken as correct.

Our thesis is that the interviewee's response in the interview situation is contaminated by recent experience with the publication and this tends to make the respondent either over-responsive or under-responsive to the publication. This tendency will not seriously contaminate the readership results themselves, provided the over-responses and under-responses tend to balance, but it will contaminate the casualness obtained in a single interview.

Nevertheless, there would seem to be other ways of looking at the situation, and it is necessary to look at these in some detail, in order to justify at least the point of view that reinterview surveys provide a more reasonable casualness than single interview surveys.

Perhaps our best approach is to look at the most positive arguments which are contrary to the use of double interviews and see how they stand up. Perhaps the argument which would seem to have greatest merit is to assume that the interviewee's response is somewhat perverse and that the interviewee's behaviour towards the publication is more regular than his response to the interview. This could be understood to happen if

we felt that the interviewee's response was contaminated by having liked or disliked the particular issue. This kind of behaviour on the part of respondents might be expected to lead to over-statement of the casualness in the double interview situation.

Belson (Studies in Readership) observes that people who usually read all issues or usually read none of the issues of a publication have little opportunity for making an error about their readership.

Pertinent remarks that he makes are: (Page 56)
"It is in terms of reading patterns (in relation to the publications being asked about) that we find the major correlates of error. Outstanding among them is the respondent's estimate of the frequency with which he usually sees the publication concerned."

"... The reason for this sort of finding is not hard to suggest: when people 'never' see the publication or see 'every copy' there is little scope for error in their responses; it is as if they cannot help being right. When they see it 'mostly' or 'now and then' the error potential is obviously much higher - probably at its highest."

Therefore, the errors must come mostly from the people who are in the middle ground i.e., the people who are somewhat irregular about their readership. The question that arises is whether their irregularity in the interview situation exceeds their irregularity of readership and how these responses effect the single interview and double interview methods of survey.

The argumentation here is complex and is perhaps best handled through the examination of a statistical model. We have carried out this examination in appendices A and B. However, we can do much in a very simple way by considering those people who read exactly 50% of the issues of the publication as being typical of the readers who are in the middle ground. We can note in passing that

according to Belson's study, the people who say that they read most copies of a weekly publication actually read 62% of issues and this group has the highest percentage of estimates in error(37%).

Considering then these 50% readers, their readership of two specific issues will give the same results as the tossing of two coins. That is, a quarter of these readers will read neither of the two specific issues, a half of them will read just one of the issues and a quarter will read both of the issues.

What we will examine is the possible ways that these readers could perhaps respond in double and single interview situations. If a particular type of response tends to increase the 'read both' and 'read neither' categories then the apparent casualness will be reduced from its true value. If a particular type of response tends to increase the 'read just one' category then the apparent casualness will be increased from its true value.

It should be understood that these types of response have to preserve the balance of readership, that is, they have to operate equally on the 'read both' and 'read neither' categories or else the readership results will not be preserved.

Essentially there are two important ways in which a respondent might conceivably distort his response from the truth. What we will show is that neither of these distortions would affect the reinterview casualness and that both of them would affect the single interview casualness.

Suppose that the reader actually read both issues but thinks that because he normally only reads a half of the issues and he may not have read one of the two issues. Similarly, the respondent who actually read neither issue may be tempted to respond by selecting one of the two issues since he normally reads one issue out of two in any case. We see that this kind of response will reduce the 'read neither' and 'read both' results and therefore, will lead to an increase in the reported casualness. If this respondent bias is operating then the true casualnesses would lie somewhere below the single interview casualnesses currently being shown.

Now consider the reinterview situation with the respondent behaving again in the same way. We have two issues in the first interview and two issues in the second interview to consider. Suppose the person actually read all four issues.

On the first interview he behaves by selecting only one issue (since he normally only reads one out of two) and in the second interview he does the same. Then the reinterview survey will show (for those readers who actually read all four issues), that a quarter of these apparently read both of the issues, a half of them apparently read one of the issues and the remaining quarter apparently read neither of the issues. If we consider all of the other cases, i.e. those who actually read three out of four issues, those who actually read two out of four and so on, we find that because in every case they respond by selecting one issue in one interview and one issue in the second interview, that for each of these cases, the reported result shows a quarter of respondents as reading both issues, half the respondents reading one issue and the remaining quarter reading neither of the issues. Therefore, the reinterview casualness is unaffected by this kind of response from respondents.

Because the single interview casualnesses are markedly lower than reinterview casualnesses in this survey (and in other surveys which have appeared), it is unlikely that they represent an overstatement of the casualness. So that while the response tendency we have been examining is a conceivable way in which respondents might behave, it does not seem likely that it actually occurs very much, unless it is balanced by some other kind of bias. The important point, however, is that the reinterview casualness would be unaffected even if this kind of response was made by interviewees.

Now let us consider the opposite kind of behaviour that the respondent might display. Suppose that in each interview depending on his current attitude to the publication, he is likely to respond by selecting both issues or neither issue. That is, amongst these 50% readers, one half of them respond 'Yes Yes' in each interview and a half respond 'No No' in each interview. Then if we select for our reinterview casualness one of the issues from the first interview and one from the second, our result will be that a quarter of the respondents will be depicted as reading both of the issues, half of them as reading one issue and a quarter as reading neither issue. On the other hand, the single interview method will result in a gross understatement of the casualness. The only way in which there would be a possibility that the reinterview casualness is overstated is if the behaviour between first and second interview is

negatively correlated, so that the person who responds 'Yes Yes' on one interview has a strong tendency to respond 'No No' on the other interview. This is a rather unlikely kind of behaviour, and in any case the single interview casualnesses would remain grossly understated.

We see from these considerations that whereas the single interview approach may be affected seriously in either direction, by the responses of systematically irregular readers, the double interview technique is neutral to the vagaries of the respondent and will be unaffected by either behaviour.

It is very difficult not to accept the simple logical explanation that it is the tendency of these middle respondents to be over-responsive towards the publication at the time of the interview which accounts for the difference between reinterview and single interview casualnesses. But in any case our argument substantiates the use of reinterview casualnesses in that the reinterview method is based on its being most neutral to major respondent tendencies.

We have given a considerable amount of thought to the various possible ways in which the reinterview survey might be foiled by respondents and these considerations have led us to the conclusion that just as readership is well measured by a variety of techniques (since over and under responses tend to cancel, whatever the method), so the casualness of publications is well measured by reinterview surveys. As noted earlier, the best kind of arguments relate to a statistical model which we have included in an appendix.

APPENDIX A

Normal Components Model

The Beta model is not the only model which would be appropriate to the reading behaviour of the audiences for publications. In fact, the major reason for the use of the Beta extension is that it is relatively easy to use and like many models which might be applied it fits satisfactorily to the known data. In a paper titled "Casualnesses and Correlation" an alternative to the Beta model was developed and it was demonstrated that for practical purposes it yielded very similar results. The model that was used to model single publications was termed the 'Threshold Bi-Normal Model'. While it has the disadvantage of being computationally intractable its useful advantages over the Beta model are:

1) A Normal components type of model has a natural relation to Normal statistical theory in the Analysis of Variance area and permits theoretical understanding of the processes causing readership.

2) This model, unlike the Beta model, is capable of natural theoretical extension to several publications in a way which preserves the essential character of the readerships.

In essence, the Threshold Bi-Normal model postulates that there are two effects operating on a person who might read the publication. There is a 'Long Term Attraction' to the publication and for each specific issue there is a 'Specific Issue Effect'. The Specific

Issue Effect summarises the person's attraction to that specific issue and the short-term facilitation/ interference suffered by the potential reader.

These two components can be taken as being Normally distributed and we postulate that when the sum of these two effects is large enough that it crosses an action threshold, then the person becomes an actual reader for a specific issue.

It should be noted that the 'Long Term Attraction' variable also has an element of facilitation/ interference in the sense that if a person is in a household where a particular publication is regularly purchased, then in the long term they would be more likely to read the publication than not to read it. In this case, and in the development of the argument below, it should be noted that the names given to the particular effects which are taken to operate should be treated as convenient labels rather than as exact descriptions of the actual factors they represent.

When we come to looking at what happens when we attempt to measure readership and casualness, we see immediately that we need to take into account a third factor which can be termed the 'Interview Response Effect'. As a first model then, we could imagine that there are three additive factors operating, viz:

Long Term Attraction

Specific Issue Effect

Interview Response Effect

Looked at as a simple model of this kind, assuming that the Interview Response Effect varies from interview

to interview, then the reinterview method would yield a higher casualness than the actual casualness.

However, this model is insufficiently general. First of all, we will expect that the Interview Response Effect will not be independent of the Specific Readership Effect and may not be independent of the Long Term Attraction, so that these effects would not in general be additive. We can make the model more general without undue complication by overlooking the correlation between the Interview Response Effect and the Long Term Attraction since there is not a great deal of reason to suppose that the constant aspect of a person's behaviour would lead to a random effect in the interview. That is, the Long Term Attraction can be taken as subsuming within it that part of the Interview Response Effect which is correlated with the Long Term Attraction.

However, we would expect the correlation between the Specific Issue Readership Effect and the Interview Response Effect to be important.

Therefore, our general model comprises four effects:

Long Term Attraction

Individual Issue Attraction Response

Residual Readership Interference/Facilitation

Residual Interview Response Effect

Actual readership of a specific issue comes about as a compound of the Long Term Attraction, the Individual Issue Attraction Response and the Residual Readership Interference/Facilitation. In very loose terms our model of the person's behaviour is that there is a constant attraction towards the publication which is modified by an attraction towards the specific issue and

this is further modified by the specific availability or lack of availability of the issue.

Our model for the interview situation is that the respondent's behaviour is the resultant of three components, the Long Term Attraction to the publication, modified by the Short Term Attraction Response and modified further by a Residual Interview Response.

This model is not simply preferred to the simple additive model (which adds the interview response onto the readership) just because it suits our case, but it is because it can be seen to be more general than that simple model. In fact, the simple model can be seen as a special case of this model if we assume the Residual Readership Interference/Facilitation is of no effect.

However, there is every likelihood that this factor could easily be of greater effect than the Residual Interview Response. What this implies is that random factors beyond the control of the respondent are likely to be as large or larger than the respondent's incorrect memory in the interview situation. In any case, provided the Residual Interference/Facilitation and the Residual Interview Response are of a similar magnitude, then the casualness will be well measured by a reinterview study.

When we look at single interviews of two specific publications, we have to consider that the Residual Interview Response would probably by correlated for the two publications. This will lead naturally to an understatement of the casualness in single interviews since the effective correlation between the responses is increased.

APPENDIX B

Simulation

The discussion in Appendix A above must appear to the lay reader, and even to some more technical readers, to be abstract at least and possibly somewhat artificial.

Perhaps the most convincing demonstration that the theory developed has a very realistic relationship to the data of the study and to Belson's observations about readership interview responses is through a simulation. Such a simulation will at least show that the theory developed accounts for the observed phenomena in a very plausible way. (Since no theory ever achieves any more than to account for the observed data in a 'sensible' way, this is as much as we can do.)

We consider a magazine which has a 50% readership and simulate the actual readership and readership responses of 1000 of the population.

(For simplicity we will use values in the model which will yield approximately the kinds of results we have observed. These values are:

a) Variance of Long Term Attraction = .6
b) Variance of Individual Issue Attraction Response = .2
c) Variance of Residual Readership Interference/ Facilitation = .2
d) Variance of Residual Interview Response Effect = .2

In the Single Interview situation we take the Residual Interview Response Effect as being the same for both issues and equal to that for the second issue in the Double Interview situation.)

To show the practical effect of the simulation, the first 25 simulated respondents are listed in table 1 below.

SIMULATION

First 25 Simulated Respondents

Respondent	Actual Readership		Single Interview Responses		Double Interview Responses	
	1st Issue	2nd Issue	1st Issue	2nd Issue	1st Issue	2nd Issue
1	No	No	No	No	No	No
2	No	Yes	No	Yes	No	Yes
3	Yes	No	No	No	No	No
4	No	No	No	No	No	No
5	Yes	Yes	Yes	Yes	Yes	Yes
6	No	No	No	No	No	No
7	No	No	No	No	No	No
8	No	No	No	No	No	No
9	Yes	No	No	No	Yes	No
10	Yes	Yes	Yes	Yes	Yes	Yes
11	No	No	No	No	No	No
12	Yes	No	Yes	No	No	No
13	Yes	Yes	Yes	No	Yes	No
14	Yes	No	Yes	No	Yes	No
15	No	No	No	No	No	No
16	No	No	No	No	No	No
17	Yes	No	Yes	Yes	No	Yes
18	No	No	Yes	Yes	No	Yes
19	No	No	Yes	Yes	Yes	Yes
20	No	No	No	No	No	No
21	No	Yes	Yes	Yes	Yes	Yes
22	Yes	No	No	No	Yes	No
23	No	No	No	No	No	No
24	No	No	No	Yes	No	Yes
25	Yes	Yes	Yes	Yes	No	Yes

It is worthwhile to make some simple observations about these simulated respondents.

1) Respondents 1, 4, 5, 6, 7, 8, 10, 11, 15, 16, 20 and 23 demonstrate Belson's observation that the very heavy and very light readers of the publication are unlikely to make a mistake about their readership.

2) In addition, respondents 2 and 14 have given correct responses in both the single and double interview situations.

3) Respondents 3, 13, 19, 21 and 24 show cases where both the single interview and double interview methods yielded the same results although these results were incorrect reflections of actual readership.

4) The remaining six respondents, numbers 9, 12, 17, 18, 22 and 25 contain two cases in which the single interview responses were correct and two cases in which the double interview responses were correct. Amongst this remainder it is notable that five of the single interview responses were 'YES YES' or 'NO NO' and that all six of the double interview responses were 'YES NO' or 'NO YES'.

However, it is difficult to draw conclusions from such a small number of respondents. The main value in listing them is to show practically how the simulation works.

The simulation was run out to 1000 respondents giving the following results:

		Readers	Read Both Issues
Actual	1st Issue	494	357
	2nd Issue	508	
Single Interview	1st Issue	496	404
	2nd Issue	501	
Double Interview	1st Issue	490	342
	2nd Issue	501	

From which we obtain the casualnesses

Actual Casualness:	.576
Single Interview Casualness:	.379
Double Interview Casualness:	.614

In addition, for the second issue we obtained a count from those who actually read the issue of those who said they read the issue. This count was 401 and it enables us to draw up a table of the type that Belsen exhibits (for example, Table 12, p31). The entries in the table are percentages.

		Actual Readership			Error
		NO	YES	ALL	%
Claimed Readership	No	39	11	50	22
	Yes	10	40	50	20
	All	49	51	100	

This table shows a comparable level of error with that shown by Belsen for the two U.K. women's publications 'Woman' and 'Women's Own'.

We conclude therefore that this model is very successful in explaining all of the observed phenomena. In a statistical sense, it is a 'simple' model which uses a minimum of components and it is a model which we feel is an extremely reasonable rationalisation of the observed phenomena of readership.

APPENDIX C

Note on Belsen's 'Studies in Readership'

We have throughout the document made considerable reference to Belsen's 'Studies in Readership' which was published by Business Publications Limited in 1962. Belsen was commissioned by the Institute of Practioners in Advertising to carry out a study which would assess the accuracy of readerships as measured by the I.P.A. and would also suggest ways in which the methodology of the I.P.A.'s national readership surveys could be improved.

Belsen's approach was to give a standard I.P.A. survey interview to selected respondents using normal I.P.A. interviewers and then to follow up as soon as practicable after that interview, an intensive interview covering only four of the 192 publications in the I.P.A. Report and using highly qualified interviewers. The intensive interview procedure was essentially one of establishing the circumstances of reading over the issue-period for the publication by asking respondents to trace back the way they spent their time during the period.

Therefore, Belsen's study represents a (perhaps the only) serious attempt to establish the true readership of publications in relation to a standard interview procedure. A similar study to establish 'true' casualnesses would very probably be impractical since it would require two intensive interviews with the same respondents and apart from being very costly, there would be serious possibilities of contamination of respondents between the first and the second interview particularly since such a survey would study a limited number of publications with each respondent.

We have treated Belsen's work as a background document to tell us the kinds of biases we might expect from respondents and in this way his work is relatively crucial to the assessment of the study results.

APPENDIX D

Bulletin No. 5

Cumulative Reach of Magazines

Accurate and comprehensive data of the readership of Australian publications is of vital importance to advertisers, agencies and media. Consequently, in an effort to create more meaningful measurements of the readership of publications, the Roy Morgan Research Centre in 1971 introduced the first truly National average issue readership survey covering both the Metropolitan and Country areas of each State of Australia.

Recognising the industry's needs to be able to measure the cumulative reach of multi-issue schedules, the Roy Morgan Research Centre have undertaken an exhaustive study covering the methods of measuring the cumulative reach pattern of magazines, in particular the relationship of the two-issue reach to the one-issue reach (i.e. the readership) of a given publication.

Whereas this study is in the final stages of processing, and will be incorporated in our full report for the period ended March 1972, soon to be released, results show clearly that people are not consistent in their answers to questions about their previous reading patterns, especially where this extends over more than a week. For example, those saying that they read any issue of a particular magazine eight to fourteen days ago are considerably less than those who claim to have read any issue of the same magazine in the last seven days; yet these statistics should be similar because they both purport to cover one week's average reading.

Completed results demonstrate a marked difference in the accumulation pattern between the single interview method in general use and the double interview method used in one of our special studies. In fact, the effect of these differences is quite dramatic. Taking as an example a magazine whose average issue readership is, say, 30%, a single interview method will typically show an estimated reach of 53% when extended to 13 issues, whereas a double interview method, i.e. calling back on the same people for a second interview approximately 4 weeks later, yields a reach of 68% when extended to 13 issues.

The following table sets out the relative differentials for magazines with an average issue reach of 30%, 40% and 50%.

Average Issue Reach	Reach of 13 Issues	
	Single Interview	Double Interview
%	%	%
30	53	68
40	65	79
50	75	87

Similarly, it can be seen from the table that the 13-issue extension of a magazine reaching 40% of its potential with an average issue, will be 65% if single interviews are used, and 79% if double interviews are used. A 50% magazine will be shown as reaching 75% after 13 issues when single interviews are used, whereas the double interview method yields a 13-issue reach of 87%.

We interpret these results as pointing to a glaring defect in the single interview method when used on its own to provide data for the extension of the reach of magazines and magazine combinations. We feel that when the methodology of our special examination is reported it will be seen to be more valid than the single interview method.

The Roy Morgan Research Centre acknowledges that there is no "perfect" method for print readership measurement, but a least the results that readership surveys show should be consistent with common sense, and should reflect a pattern of reading frequency which is realistic.

Technical Notes

Using the theory of "casualness" as developed by Christopher Fry, it is possible to estimate from the reach of one and two issues of a publication what the two-issue reach for another publication would be if that publication had the same "casualness".

Applying this theory to the results from the three single interview surveys, we obtained two-issue reach data for hypothetical publications having average issue readerships of 30%, 40% and 50%.

The surveys are from two leading practitioners of the single interview method. The results concern two primary magazines and are set out in the table below:-

	Reach of One Issue	Reach of Two Issues
Survey 1	%	%
Publication A	45.2	54.2
Publication B	28.6	36.0
Survey 2		
Publication A	41.3	49.7
Publication B	31.0	38.0
Survey 3		
Publication A	46.8	55.1
Publication B	32.3	39.2

Taking the foregoing three independent single interview survey results and applying the relativity of the two-issue reach to the one-issue reach to the three hypothetical publications with average issue reaches of 30%, 40% and 50%, the two-issue reach for each publication would be as follows:-

Cumulative Reach of Magazines ...4

	Estimated 2-Issue Reach (Single Interview Method)					
	One Issue	Two Issues	One Issue	Two Issues	One Issue	Two Issues
	%	%	%	%	%	%
Survey 1						
Publication A	30	37.63	40	48.72	50	59.08
Publication B	30	37.61	40	48.70	50	59.06
Survey 2						
Publication A	30	37.27	40	48.32	50	58.66
Publication B	30	36.87	40	47.85	50	58.18
Survey 3						
Publication A	30	37.00	40	48.00	50	58.33
Publication B	30	36.63	40	47.57	50	57.89
Average Two-Issue Reach of the 3 Surveys		37.17		48.19		58.53

It is interesting to note that the results from these three single interview surveys, each of which employed different questionnaire methods, are remarkably similar for both magazines. We have averaged the results from the three surveys and extended them to 13 issues using the usual Beta extension method.

Extension to 13 Issues

Hypothetical Readership	Estimated 2-Issue Reach	Estimated 13-Issue Reach
%	%	%
30	37.17	53.15
40	48.19	65.04
50	58.53	74.71

Special Study

The data from our special study is concerned with the readership of two specific issues each measured four weeks after they were released. In the complete report this data will be adjusted to make it compatible with the usual average issue definition of readership. However, for the purpose of reflecting the relationship between the one-issue and the two-issue reaches it is suitable as it stands.

As before, the results of two publications are used to assess the two-issue reach for 30%, 40% and 50% publications and the average is used for extension to 13 issues. These results being set out as follows:-

Double Interview (Calling back on the same respondents for a second interview)

	Reach of One Issue	Reach of Two Issues
	%	%
Morgan Survey		
Publication A	43.1	57.1
Publication B	32.9	44.5

Again applying Fry's theory for "casualness" to derive the two-issue reach for hypothetical 30%, 40% and 50% publications, the two-issue reach for each publication would be as follows:-

	Estimated 2-Issue Reach (Double Interview Method)					
	One Issue %	Two Issues %	One Issue %	Two Issues %	One Issue %	Two Issues %
Morgan Survey						
Publication A	30	41.99	40	53.70	50	64.27
Publication B	30	41.03	40	52.61	50	63.14
Average Two-Issue Reach		41.51		53.16		63.71

Extension to 13 Issues

Hypothetical Readership	Estimated 2-Issue Reach	Estimated 13-Issue Reach
%	%	%
30	41.51	68.16
40	53.16	79.39
50	63.71	87.17