

## 7.3

### THE MEASUREMENT OF MAGAZINE PAGE EXPOSURES

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Those of us who handle Average Issue Readership (audience) estimates for magazines are so accustomed to them that we tend to forget that they are, strictly speaking, in no way direct measures of actual advertising exposure. If, however, we stand back from them and apply common sense, we immediately see two 'blinding glimpses of the obvious'.

The first is that the reader of a magazine issue may not happen to open a given page: specifically, a page on which an ad appears. In this case there is no advertising exposure, and there can be no advertising effect.

In one sense therefore, average issue audience estimates - as supplied by the NRS in Britain or MRI in the US - are over-estimates. For example, MRI reports an audience number for *Newsweek* of almost exactly 20 million adults. This is the number of readers of the average issue, counting all who read or look into it, however many or how few pages they actually open. The page audience would by contrast be a count of those who actually open the average page: this must be lower - 15 million, perhaps. The second glimpse of the obvious is that the magazine reader may open the given page more than once. A magazine issue may be read on several different days, and a page on which an ad appears may also be opened on several different days.

In another sense therefore, average issue audience estimates may well be underestimates. In the case of *Newsweek*, if we counted people by the number of different days on which they opened the average page, the audience count - possibly - could be 25 million. This is a count of page exposures, the actual number of different occasions (days) on which an advertising page will on average be opened by readers.

### THE VALUE OF REPEAT EXPOSURES

There is exceptionally strong evidence from the US that multiple page exposures have multiple value. In 1960, the Alfred Politz firm carried out a repeat exposure study for the old (weekly) *Saturday Evening Post*. Similar studies were carried out in 1962 for *McCall's*, and in 1966 for *Reader's Digest*. All three studies produced essentially the same results.

The 1960 study was known as the Rochester Study because it was carried out in the city of that name in New York State. The study used an ingenious experimental design. Subscribers to the *Saturday Evening Post* were sampled. Instead of receiving their copies by mail in the ordinary way, an interviewer delivered them in person at a first visit. The interviewer asked the respondent to read the issue as she would do normally and then put it in an envelope and seal it. A couple of days later, she returned and asked some questions about the editorial content of the issue. She then said: "After a second reading, people's impressions may change. Would you please read this issue again, put it in this envelope and seal it, and I will come back again in a further couple of days".

At the third visit, the interviewer repeated the editorial interest questions, and then asked a number of brand rating questions relating to brands advertised in that issue of the *Post*.

Respondents were completely unaware that they were the subject of an experiment. However, 12 test ads were involved. These were, or were not, 'tipped in' to specific copies, and copies were unobtrusively switched at the second visit, to contrive the following situation: for each ad:

One-third of the respondents were not exposed to it at all;

One-third were exposed to it on one day;

One-third were exposed to it on two days.

A 'Latin Square' design was used to maximise the efficiency of the experiment. Exposure of each ad was verified by checking that tiny glue seals between the advertising spreads had been broken after reading.

Table 1 shows the results for all three of the Politz studies in the aggregate. In total, 36 different ads were the subject of these tests. The rating levels in the 'zero exposure' condition (ie where respondents did not see copies of the magazine which contained the ad at all) are indexed at 100.

**TABLE 1**  
Averages based on 36 ads in three Politz studies

Index of:	No ex- posures	One ex- posure	Two ex- posures
Brand familiarity	100	119	134
Claim familiarity	100	119	136
Belief in claims	100	115	132
Interest in buying	100	122	141

Take, for example, brand familiarity (unaided awareness). One exposure produced a 19% lift in this, on average: two exposures a 34% lift. It is obvious from this table that two exposures have almost, if not quite, *double* the value of one exposure. These remarkable results force one to conclude that the number of page exposures is the most direct estimate of the value of a magazine as an advertising medium.

**MEASURING PAGE EXPOSURES**

In the US, there have been two previous attempts to measure page exposures. The first was again by the Politz firm, which pioneered the concept of APX, or 'Advertising Page Exposures', by studies in the years 1958-66. These were first for *Saturday Evening Post* alone; then for the *Post* and for *Reader's Digest*, with *Life* and *Look* also being included; and then in the syndicated audience studies conducted by Politz, which measured a total of 12 titles in Politz' last year in 1966.

The method used was a page traffic technique for magazine issues read yesterday. Respondents were taken through these issues and asked which pages they recognised as having been opened yesterday. This procedure was validated by comparing the recognition levels with glue-seal breakages.

On the average, the APX level for 12 magazines studied in 1966 was 1.8, ie the average reader was estimated to have opened the average page 1.8 times during the 'life' of the average issue. Of course, these APX numbers were obtained by first estimating total page exposures, ie pages opened per day times number of days of issue life, and then dividing by the total audience estimate for the magazine. There was a wide variation in APX levels: ranging from a little over 1.0 for the weekly *Life*, to over 2.0 for some monthlies.

While the APX concept had a good reputation, nothing could be done with it when the Politz studies had obviously become out of date. In 1982, the Magazine Publishers Association (MPA) resuscitated the concept. Their purpose was to promote magazines by reminding people of the fact that magazine advertisers received from the medium 'repeat exposures without repeat payment'. A study was designed with the purpose of estimating an average page exposure level for a number of

major consumer titles (for political reasons the MPA could hardly have mounted a study which would provide results for individual titles).

The study was called 'MPX', for Magazine Page Exposures, since it studied *all* magazine pages not just advertising pages. (The earliest Politz research had shown that there was not much difference between the two.) A sample of about 1,500 respondents was interviewed by telephone. They were asked which of about 30 magazines they had read yesterday. For issues read yesterday, they were asked (a) whether that issue had been read for the first time yesterday, (b) what percent of the pages had been opened in that issue yesterday.

This research design has all the 'pieces' from which an MPX average can be calculated. Overall average reading days per issue (ie total reading days divided by first-time reading days) turned out to be 3.2; pages opened yesterday had a mean of 52%; multiplying the two together we get an MPX average of 1.7 - much like the Politz average of 1.8.

This is, of course, a very different approach from Politz. Respondents' estimates of percents of pages opened are bound, to some degree, to be subjective. However, as early Politz observational studies had shown, page openings per day tend to follow a U-shaped distribution, with more than half of all readers on a given day opening either very *few* pages (10% or less) or very *many* pages (90% or more). Respondents' approximations should yield a mean not too far from the 'truth'.

#### THE MRI PROCEDURE

Could the MPA technique be adapted so that MPX levels could be known for individual titles? This was the question facing MRI a couple of years ago. Interest in having APX-type data had been re-stimulated. The old Politz

technique would now be quite unaffordably expensive and impractical for the large number of consumer magazines now available, in many cases with low incidences among the population. The MPX approach suggested an acceptable short-cut technique worth investigating. The especially interesting question was whether respondents could meaningfully be asked about the pages they opened not just in magazine issues read *yesterday*, but on the *last* day they read them (providing this was within the publication interval).

The 'pieces' which were used to put together MRI estimates of MPX were four. Of these, the first two had always been in the survey, and the last two were added for the purpose of estimating MPX (replacing, in fact, an older *net* page openings question which had proved to be somewhat insensitive and not particularly useful).

(1) Whether the magazine had been read in the most recent publication interval, ie seven days for a weekly, 30 days for a monthly, etc. This is the standard 'Recent Reading' estimator of average issue audience.

(2) On how many different days any issue(s) of the magazine had been read in the last seven days, 30 days, etc (the publication interval). This has since MRI began been the basis for estimates of 'reading days' for each magazine.

(3) How many different issues were read on the last day read. This information is needed to adjust (2), if necessary, so as to get estimates of total *issue* reading days, taking into account that sometimes (in fact, on about 10% of days) more than one issue is read on an average day.

(4) In the last issue read on the last day read, what percent of pages were opened just on that day. This is similar to the MPA page openings question. Note that for simplicity, if more than one issue had been read on

the last reading day, only the last issue read on that day was asked about. Errors introduced by assuming that this last issue read was typical of all issues read on that day could make very little difference to the overall results.

Multiplying (2) by (3) by (4), ie:

reading days x issues read  
x pages opened,

yields the MPX score. This is calculated respondent by respondent for each magazine, and scores are added together to get the total page exposure estimates.

To go back to our *Newsweek* example, the sum of the scores for adult readers of *Newsweek* is indeed about 25 million; so with an audience of 20 million, the MPX average is 1.25, ie the average reader opens the average page 1.25 times.

**ARE MRI'S MPX LEVELS REASONABLE?**

Are the MPX estimates which have now been published by MRI for two consecutive years reasonable? They do appear to be. The overall average for 180 publications is 1.8, exactly the Politz level. The same differences that Politz found between weeklies and monthlies emerge (an obvious exception to the rule that weeklies have lower levels of MPX being *TV Guide*, which has one of the highest).

With the MPA's recent MPX study, it is possible to make more detailed comparisons, and to 'unbundle' the measurement so that reading days and page openings per average day can be looked at separately as well as the overall score.

Table 2 shows the comparison of MRI's and MPA's average page exposure data. The agreement is gratifying, since MPA, as we have noted, asked about magazine issues read yesterday while MRI went back to the last reading day.

**TABLE 2**  
Comparisons between MPA and MRI data (30 titles)

	MPA	MRI
Reading days	3.2	3.1
Pages opened per average day	52%	54%
MPX score	1.7	1.7

MRI includes a large number of qualitative questions about magazine reading which could be cross-tabulated with MPX. The results indicate face validity, and are themselves of considerable interest. They are shown in the following tables, which relate to aggregates of all magazines measured:

**TABLE 3**  
Primary/secondary readers

	MPX
Primary readers	2.2
Secondary readers	1.2

Table 3 shows the average MPX for primary versus secondary readers. 'Primary' readers are those who read a copy which they - or another member of their household - actually purchased or subscribed to themselves; 'secondary' readers are the balance of the audience. As one might have expected, primary readers have greater page exposure levels than secondary readers, with a ratio of some two to one. Since magazines with relatively high readers per copy have relatively low proportions of primary readers, this implies - as is reasonable - that there is a negative relationship between readers per copy and MPX.

However, interestingly, this is not true universally. To take one example, *Hot Rod* and *Popular Hot Rodding* both have high readers per copy, but they also have high MPX. The reason is that the secondary audience in this case is largely 'passalong' (ie the book is passed on from home to home by enthusiasts), and these readers of these books have as high MPX as do the primary.

**TABLE 4**  
Places of reading

	MPX
In-home	2.2
Out-of-home	1.1
Other home	1.1
At work	1.3
Public place	1.0
Doctor's/dentist's	0.9
Beauty/barber	0.8
Library etc	1.5
Business reception	1.3
On a plane	0.8
Travel to/from work	1.2
Other travel	1.3
News-stand/store	0.8

Table 4 shows the average MPX: first, for in-home versus out-of-home readers (which does exhibit a 2:1 ratio); and then for three sub-categories of out-of-home readers; and then for sub-categories of the readers in public places.

Readers at work open more pages than people in other out-of-home situations. As to readers in public places - which on average have the lowest MPX scores - these vary by type of place. Readers in libraries, business reception rooms, and while travelling (other than on planes) have MPX scores above 1.0. However, readers in doctor's offices, beauty parlours, on planes, and at news-stands and stores have MPX scores below 1.0.

**TABLE 5**  
Time spent reading

	MPX
15 minutes or less	0.9
16-30 minutes	1.3
30 minutes - 1 hour	1.8
1-2 hours	2.2
2-3 hours	2.9
3-4 hours	3.1
4 hours or more	6.5

As Table 5 shows, MPX is highly correlated with time spent reading. Those spending four hours or more with a magazine issue - always a small minority of the audience - have an average score of 6.5; literally, they read and re-read the book. (The magazine with the highest proportion reading for four hours or more is *True Story*.)

Interestingly, the score for those reading for 15 minutes or less is as high as 0.9, indicating rather complete 'paging through' the book even for this group, in almost all cases of course on one day only. This would be characterised by *People* magazine, say, being read by respondents in the supermarket line who take it out of the rack and go right through it but do not necessarily purchase it - a common phenomenon, as anyone in the USA can observe.

**TABLE 6**  
Frequency of reading

Issues read out of average four	MPX
None	0.7
One	0.9
Two	1.4
Three	1.8
Four	2.4

MPX is highly correlated (see Table 6) with frequency of reading the magazine - defined as the respondents' estimates of numbers of issues read out of the average four (a few, even of the recent readers, say "none out of the average four"). Some USA agencies stress the importance of the 'core' audience or 'loyal' audience to all media, broadcast as well as print, in terms of advertising attention levels. This is borne out by these data.

#### STABILITY OF THE DATA

An important question for many in evaluating MRI's MPX estimates was whether the data would prove to be reliable, ie reasonably stable over time. Now that two years' data are available to us, a considerable quantity of analysis has been carried out on this particular point.

One matter to stress is that page exposure estimates have inherently larger sampling errors than audience estimates, and so more variability over time must be expected. The reason is that in addition to the variation in the audience itself, this is compounded with the variation in the page exposure scores, which vary between 0.1 and 9.9 or more (higher values than 9.9 are 'trimmed' by being replaced by their mean).

As an approximate rule of thumb, it has been found that relative sampling tolerances for page exposure estimates are approximately *double* what they are for audience estimates. For example, a sampling tolerance for an audience estimate might be plus or minus 10%, this being the 'two-sigma' tolerance, so that there is a 19-in-20 chance with an estimate of (say) 5 million readers, that the actual population number is in the range 4.5 million to 5.5 million. In this case, the tolerance for page exposures would be plus or minus about 20%, so if the page exposure estimate is 10 million, the actual range indicated is 8 million to 12 million.

It has been found that the year-to-year variations in page exposures relative to the variations in audiences are in line with these relative sampling errors. Specifically, the percent changes for page exposures from the first year to the second were on average about *double* the corresponding percent changes for audiences. The page exposure measurement is, therefore, as reliable as one would expect given the relative sampling tolerances involved. These tolerances can get quite large for small magazines and/or small sub-groups of the population: for this reason, MRI has produced a two-year report and database with 40,000 respondents by aggregating two successive years of field work, and this is the strongly recommended source for page exposure data.

#### DOES MPX MAKE A DIFFERENCE?

Finally, does the use of MPX data make a difference to the evaluation of magazines? The answer is that it certainly does.

First, Table 7 shows the distribution of magazines by average MPX score. The numbers in the table show, for men, 89 men's and dual audience books; and for women, 86 women's and dual audience books.

TABLE 7  
Numbers of magazines by average MPX score

Average MPX score	Men (89 titles)	Women (86 titles)
3 or more	-	3
2.50 - 2.99	2	5
2.00 - 2.49	18	17
1.50 - 1.99	33	31
1.00 - 1.49	32	23
Under 1.0	4	7

*It will be seen that the average page exposure scores range from under 1.0 to over 3.0.*

Rankings of magazine change, of course, if one ranks in terms of total page exposures rather than in terms of total audiences. Further, rankings by costs per thousand change too, sometimes dramatically. So the candidate lists of magazines for a schedule may change.

What about evaluations of schedules in terms of reach and frequency? When Politz APX data existed, Jerry Greene and the late Steve Stock of Marketmath Inc developed a model for getting reach and frequency estimates for them. This model employed the Poisson distribution, and has again emerged as the generally accepted method for handling MRI's MPX data.

It is incidentally interesting that a *single insertion in a magazine*, viewed in terms of page exposure reach and frequency, is a *schedule*. Table 8 shows the exposure distribution (as 1-plus, 2-plus, etc) calculated for three titles based on the average MPX score, using the Poisson model.

**TABLE 8**  
A single insertion is a 'schedule'  
(percent of audience)

Page exposures	Fortune %	Golf Digest %	TV Guide %
0	29.2	13.0	6.9
1+	70.8	87.0	93.1
2+	34.8	60.5	74.7
3+	12.5	33.4	50.1
4+	2.6	15.0	28.2
5+	0.8	5.6	13.4
6+	-	1.8	5.5

When schedules involving multiple insertions in multiple vehicles are evaluated on the basis of page exposure rather than audiences, two things happen:

(1) Net reach declines - at least slightly. If one thinks about it, this is obvious. One can be a member of the net audience to a number of magazine *issues* without having actually opened *any* of the pages in those issues on which the ad appears, even once.

(2) Frequency increases - generally by a factor approaching 2.

Advertising agencies using MRI have made many comparisons of schedule evaluations based on page exposures with those based on audiences. The results can be different. Schedule A may have the edge over schedule B in terms of both reach and frequency if evaluated in terms of issue audiences; however, if page exposures are the basis of the evaluation, B may possibly emerge as having an edge in terms of frequency. Accordingly, different media decisions may be made.

#### CONCLUSION

The count of the number of times that there are 'open eyes in front of the open page' is perhaps the most direct estimate of the value of the magazine as an advertising medium, since this is a count of *actual* advertising exposures rather than advertising *opportunities*. MRI's page exposure measurement is an important factor in present-day magazine research. There seems little doubt that it will, in time, change the ways and improve the efficiency with which the magazine medium is used.