

MULTI-MEDIA REACH AND FREQUENCY ANALYSIS

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Summary

In the construction of an advertising campaign important decisions have to be made concerning the budget allocated to each media type. There are many inputs to this decision such as the relative effectiveness of each media for the product in question and the relative costs.

More specifically, in the design of a mixed media schedule it is important to reflect its objectives in terms of the combined impact on each individual in the target universe. This requires a respondent level single source mixed media database and a mixed media reach and frequency analysis model.

This paper discusses the various objectives of mixed media reach and frequency analysis with worked examples of mixed TV and press schedule evaluations using the UK's BARB/TGI fusion database. This fusion is currently the closest we have to a "currency" compatible single source database.

Probability models are still required to generate reach estimates for the press component of the schedule. In this application the press model also has to interact with actual panel based TV schedule reach data.

The work we have done so far demonstrates that there is a potential to manipulate mixed media schedules to optimise cross-media duplication. The objective may be to maximise coverage; or to use both media in creative ways in order to increase individual effect - ie. to maximise duplication, taking into account creative harmony or dissonance. Either way, this approach provides a reasonable tool.

Introduction

If you go to any marketing conference these days you will hear the terms 'integrated marketing' and 'total communication package' many, many times.

Promoting one's product using only a single medium is no longer adequate to sell a brand or a service.

Any marketing director, marketing manager or brand manager today has to consider the full range of marketing weapons at his or her disposal. Advertising agencies are no longer in the business of just creating above the line advertising; they get involved in the full gamut of promotional tools available. But, has the research industry been able to keep up?

It could be argued that the research business has been unable to cope with this increased fragmentation particularly in the area of media research.

If you take any one medium there is an adequate vehicle (although that could be debated at length) for campaign evaluation. However, there are no media research vehicles that cross the great divide of inter media.

So whilst one can measure the media success of a T.V. campaign and make judgements about it, and one can measure the success of a press campaign and make judgements about it, if one appears in both media it is not possible to assess the overall media performance.

It is surprising that after fifty years of the NRS and nearly forty years of TAM, JICTAR or BARB there has never been an attempt to form any sort of joint media research vehicle. Simon Broadbent along with Beale and Hughes worked on sophisticated computer NRS/TAM modelling in 1965. Their model had very many inputs and was probably too ambitious. As a result it was never really used or developed. Guy Consterdine in the early 70's used TGI/JICTAR probability modelling but this did not use individual spot data. Others have used TGI as a single source.

Arguments have been put forward that you should not weigh up the appeal of T.V. and press on the same set of scales; that a press impact cannot in any way be equated with a T.V. impact because of creative differences. Discussion about apples and pears come to mind but I'm not sure in today's market place that they are very fruitful.

Admittedly creative differences have to be taken into account but because measuring something is difficult, it does not mean that you should not attempt to carry it out. We want to put forward an approach to measuring press and TV campaigns using two different media research vehicles. We hope that from this initial work we will be able to stimulate further activity on joint press and TV campaigns and to include other media and their research vehicles.

The two media research vehicles we are using are the TGI and BARB. TGI is our substitute for the NRS. Ideally we would like to use the NRS, but the level of investment required by either RSMB or Channel 4 to apply this vehicle is too great at this time. I am also unclear as to whether it is politically acceptable for the NRS to be used in such a way; perhaps we should discuss this later.

It would of course be more useful if the NRS was able to introduce the much talked about improvements to the quality of data collected in order to make such work more worthwhile. Let me quote from an article.

“The NRS interview includes the readership of some ninety publications. Here readership means roughly “see any part of an average issue”. There is no guarantee that a reader of a publication will see our advertisement; there is no measure of intensity or thoroughness of reading; nor is there any measure of regularity of reading: an individual who sees only half the issues of a publication will in theory have a probability of about one-half of being counted as a reader in the survey but we cannot distinguish him from a regular reader. We shall be able to use data on this point when it becomes available.”

That quote, believe it or not, was from the 1965 Broadbent paper. Let us hope that more data will be available in 1997 or 1998 following the latest IPA study. However, that is for the future.

Meanwhile the TGI is a very reasonable alternative to the NRS and so let us describe what we have done and the results we have got. We will then raise certain issues for discussion as a result of this work. In order to give our theoretical arguments a practical aspect we have taken two campaigns, Marmite and Citroen Xantia, both of which employed an integrated marketing approach including the use of press and television.

The Schedules

Both of the schedules ran during the first three months of 1997 had the following mixes of press insertions and TV spots.

Citroen Xantia

The Times	5 insertions
Daily Express	4 insertions
Daily Mail	4 insertions
Guardian	3 insertions
Daily Telegraph	2 insertions
Sunday Express	2 insertions
Sunday Telegraph	2 insertions
Sunday Times	2 insertions
Mail on Sunday	1 insertion
Observer	1 insertion
Sunday Times Magazine	1 insertion
Yachting Monthly	1 insertion
Independent on Sunday	1 insertion

Total Press	29 insertions
ITV	26 spots
Channel 4	37 spots

Marmite

The Guardian	8 insertions
Best	6 insertions
The Independent	6 insertions
She	4 insertions
Woman	4 insertions
BBC Good Food	3 insertions
Essentials	3 insertions
Good Housekeeping	3 insertions
BBC Vegetarian	3 insertions
Practical Parenting	2 insertions
Mother and Baby	1 insertion

Total Press	43 insertions
ITV	22 spots
Channel 4	19 spots

The demographic target audiences were Men ABC1 and Housewives with Children respectively. Their associated main categories are Men and Housewives.

Based upon the BARB TV panel and the TGI (12m/e September 1996), the schedules delivered the TVRs and AIRs shown in Table 2.1.

Table 2.1 Schedule Delivery

	Citroen		Marmite	
	Men	Men ABC1	Housewives	H/W + Ch.
Accumulated AIRs	201	268	188	253
ITV TVRs	147	119	210	204
CH4 TVRs	75	64	38	44
Total AIRs/TVRs	424	452	436	501

Before exploring the overall performance of the mixed media schedule, each component has been analysed separately.

Press Schedule Evaluation

This paper is not intended to be a full critique nor a major development of the mathematical models for generating extended reach and frequency analysis of press schedules with multiple publications and insertions. The theory has been previously documented to a certain extent and there are numerous bureaux who offer various proprietary (and therefore unpublished) important enhancements to the methodology. However, in order to demonstrate adequately the principles of our mixed media planning and evaluation work, some discussion and justification of the model used is necessary.

Inevitably all the models currently available in press planning systems have a basis in probability theory. These range from mainly non-parametric approaches using pair-wise duplications between successive issues of the same publication and between publications, to parametric models such as the Binomial or Beta-Binomial distribution functions. In fact a paper presented by Judy Thomas and Ron Carpenter at this symposium in New Orleans in 1981 explored the variations in results produced by different bureaux.

Given that in this application the model will be applied at an unprecedented level of detail (ie. within TV schedule frequency groups, see section 4) a robust and parsimonious model is required. Therefore we have opted for a parametric approach. The Binomial and Poisson distributions are one parameter models which describe the frequency distribution which is the numbers who read 0, 1, 2, 3, 4, of the publications/issues in the schedule. All that is required to determine the whole distribution is the average number of publications/issues per person, ie. the accumulated AIRs x number of insertions. In practice, the Binomial and Poisson are from the same family of probability distributions and under certain (not too strict) conditions give the same results. The Negative Binomial and the Beta-Binomial are two parameter models from the same family of distributions and are, under certain conditions, consistent with each other and the two one parameter distributions. Having two parameters, they can be over sensitive and often cannot be fitted to real data. In the following brief evaluation, we have concentrated on:

- Binomial distribution
- Poisson distribution
- Negative Binomial distribution

The Target Group Index survey (TGI) provides the following information for each publication (for each person):

- Read - almost always
- quite often
- only occasionally
- not in past year
- within latest publishing cycle (AIR)
- longer ago

In order to predict duplication and reach build over successive issues of a single publication, it is common practice to model from AIR's within each frequency group and then to aggregate the projected results. In particular, this can produce a set of two issue duplications to be used in conjunction with pairwise between publication duplications to project the full schedule reach and frequency. However, this does not take account of the fuller picture of overlaps between the publications in the schedule which the TGI dataset provides.

The start point for the parametric modelling we are using is the full AIR based frequency distribution on a base of one insertion per publication. For each individual we count the number of publications read within the latest publishing cycle and use this real data to construct the base frequency distributions for our two schedules, shown in Table 3.1.

Table 3.1 Average Issue Frequency Distribution

Number of Publications	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
0	56%	43%	69%	60%
1	19%	22%	20%	23%
2	16%	20%	8%	12%
3	6%	10%	2%	4%
4+	3%	5%	1%	1%

So, 56% of men didn't read any of the Citroen schedule publications in their latest publishing cycle, whilst 3% read four or more of them. The objective of the modelling exercise is to predict these frequency distributions when there are insertions in more than one issue of each publication.

Before moving on it must be noted that the survey does provide a bench-mark upper limit for the predicted reach based upon whether or not each person has ever (in the past year) read any publication in the schedule:

Table 3.2 Ever Read Frequency Distribution

Number of Publications	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
0	41%	27%	49%	35%
1+	59%	73%	51%	65%

For model fitting purposes it makes sense to use a key piece of information from the ever read frequency distribution, ie. the number of people who have ever read any of the publications in the schedule. Table 3.3 shows the single insertion average issue frequency distribution re-based on this sub-population:

Table 3.3 Re-Based Average Issue Frequency Distribution

	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
None in past year	41%	27%	49%	35%
At least one in past year	59%	73%	51%	65%
Re-based frequency	(100%)	(100%)	(100%)	(100%)
0	25%	21%	39%	38%
1	33%	31%	40%	35%
2	26%	27%	15%	19%
3	10%	13%	4%	6%
4+	6%	8%	2%	2%

Obviously we can't test the model's ability to predict accurately the full schedule frequency distribution because these are the very data we don't have! However, we can test the model's ability to describe the single insertion average issue frequency distribution in table 3.3 above, a classic goodness-of-fit test. Table 3.4 shows the results achieved by each model.

Table 3.4 Goodness-of-fit to Re-Based AI Frequency Distribution

Re-based frequency	Actual	Binomial	Poisson	NBD
<u>Citroen Men</u>	%	%	%	%
0	25	23	23	25
1	33	34	34	33
2	26	25	25	23
3	10	12	12	12
4+	6	6	6	7
<u>Citroen Men ABC1</u>				
0	21	20	20	21
1	31	32	32	32
2	27	26	26	25
3	13	14	14	13
4+	8	8	8	9
<u>Marmite Housewives</u>				
0	39	39	40	-
1	40	38	37	-
2	15	17	17	-
3	4	5	5	-
4+	2	1	1	-
<u>Marmite HW + Ch.</u>				
0	38	35	37	38
1	35	39	37	36
2	19	19	18	18
3	6	6	6	6
4+	2	1	2	2

As expected, with fairly low average numbers of publications per person and given that the models all come from the same family of probability distributions, there is little to choose between them. They all model the actual frequency distribution very closely. The only exception was that the NBD could not be applied to the Marmite Housewives data - the mathematical criteria for the NBD to be a possible model were violated. This leaves a straight choice between the Poisson and Binomial models. We have taken the latter because it is theoretically more correct as it recognises the upper limit on the number of publications it is possible to read.

Given the number of insertions and AIRs for all the publications in the schedule, we can calculate the average opportunities to see (OTS) and the probability of reading an average issue in the schedule. These are shown in table 3.5 below.

Table 3.5 Average OTS and Probability of Reading

	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
Average OTS				
All Individuals	2.01	2.68	1.88	2.53
“Ever Read” Individuals	3.43	3.72	3.67	3.90
Average Probability				
“Ever Read” Individuals	0.12	0.13	0.13	0.13

Based upon these probabilities and the Binomial model, we can predict the full frequency distribution for the whole schedule. These are shown in Table 3.6 below together with the bench-mark percentage who have never read any publication in the schedule. These have been converted back to the total population base.

Table 3.6 Full Schedule Frequency Distribution

Frequency	Average Issue	Schedule	Ever Read
Citroen Men	%	%	%
0	56	44	41
1	19	8	
2	16	11	
3	6	12	
4+	3	25	
Citroen Men ABC1			27
0	43	30	
1	22	7	
2	20	12	
3	10	14	
4+	5	37	
Marmite Housewives			49
0	69	50	
1	20	4	
2	8	9	
3	2	11	
4+	1	26	
Marmite HW + Ch.			35
0	60	36	
1	23	5	
2	12	10	
3	4	13	
4+	1	36	

As might be expected, the schedule reach builds close to saturation levels in every case. Without the “ever read” constraint used in the model fitting, the schedule reach figures would all be in excess of 85% and closer to 95% for the target groups, clearly far too high for such targeted campaigns.

We know that the National Readership Survey “currency” would deliver different results and that alternative/proprietary models may deliver different schedule predictions. However, this parsimonious model is producing credible and usable results.

The schedule summary statistics are shown in Table 3.7.

Table 3.7 Press Schedule Summary Statistics

	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
Total AIRs	201	268	188	253
1+ Cover	56%	70%	50%	64%
4+ Cover	25%	37%	26%	36%
Average OTS	3.6	3.8	3.8	4.0

Clearly the schedules have been well targeted. There is an efficient conversion to the target audience in both cases, particularly in terms of 1+ cover (schedule reach).

TV Schedule Evaluation

TV schedule reach and frequency analysis is a much more straight-forward proposition because the BARB panel provides a continuous measurement of each individual. Probability modelling is not required. The schedule summary statistics are shown in Table 4.1.

Table 4.1 TV Schedule Summary Statistics

	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
ITV				
Total TVRs	147	119	210	204
1+ Cover	60%	55%	73%	71%
4+ Cover	13%	9%	21%	21%
Average OTS	2.5	2.2	2.9	2.9
Channel 4				
Total TVRs	75	64	38	44
1+ Cover	41%	38%	28%	30%
4+ Cover	4%	3%	1%	1%
Average OTS	1.8	1.7	1.4	1.5
ITV + Channel 4				
Total TVRs	223	183	248	248
1+ Cover	70%	67%	77%	75%
4+ Cover	23%	18%	28%	27%
Average OTS	3.2	2.7	3.2	3.3

Overall, the TV schedules have about the same weight as the press schedules. Channel 4 has a better conversion to the target audiences than does ITV, but as expected the overall conversion for TV is less than for the press.

Combined TV and Press Schedule Evaluation

In an ideal world we would use a single source survey to measure the reach and frequency of the combined TV and press schedule. And ideally this single source survey should contain both the detailed readership data available from the TGI and the continuous minute by minute viewing records available from the BARB TV panel. This single source survey does not exist but has been simulated using the data fusion technique. In fact RSMB have been conducting this data fusion on behalf of BMRB since 1992. The data fusion update used for this particular project was based upon the TGI surveys for the year ending September 1996.

The data fusion process is designed to simulate a single source survey by using the TGI to predict the product and media usage classifications for each BARB TV panel member. The media usage classifications include the detailed TGI readership data. The link between the TGI and the BARB panel that facilitates this prediction is the set of mainly demographic characteristics which are common to both surveys. In fact this set includes total TV weight of viewing quintiles. The basic principle is that the TGI respondent who is the most similar to a particular BARB panel member in terms of the common characteristics, will be the most likely to have the same product and media usage classifications as that BARB panel member. In the data fusion terminology, the particular TGI respondent is called the "donor" because his/her product and media usage record is assigned to the particular BARB panel member who is called the "recipient". In this way, a product and media usage record is generated for every BARB panel member.

It is recognised that in practice the fusion cannot work at an individual level. The key is that the high level of demographic control implicit in the technique is sufficient to predict accurately the aggregate viewing of all individuals within a particular product classification.

The BARB/TGI fusion has been independently assessed by Ken Baker Associates on behalf of BARB and subsequently approved. For the continuation of this paper, for all practical purposes it is assumed that the fusion delivers an acceptable simulation of single source data.

In order to generate the mixed media reach and frequency analysis, we need to combine the actual BARB TV reach and frequency analysis with the modelled press reach and frequency analysis. Using the TV viewing records from the fusion database, the sample is split into sub-groups according to how many TV spots they have seen. Within each of these sub-groups, the basic (single insertion) frequency distribution is calculated. Following the methodology described in section 3 above and using the Binomial expansion model, the full press schedule frequency distribution is calculated for each sub-group. This provides a complete cross-tabulation which tells us what percentage of the target audience have seen "x" TV spots and "y" press insertions.

The reach and frequency schedule summary statistics for the whole mixed media schedules are shown in Table 5.1.

Table 5.1 Mixed Media Schedule Summary Statistics

	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
Total TVRs/AIRs	424	452	436	501
1+ Cover	88%	90%	88%	91%
4+ Cover	54%	59%	54%	63%
Average OTS	4.8	5.0	5.0	5.5

The TV and press schedules have combined to lift coverage from around 70% to around 90%. More importantly perhaps, the 4+ cover within the target audiences is about 60% in both cases.

The analysis is now extended in Table 5.2 to look at the contribution of each of ITV, Channel 4 and the press to the schedule.

Table 5.2 Mixed Media Schedule Evaluation

	Citroen		Marmite	
	Men	Men ABC1	Housewives	HW + Ch.
Total TVRs/AIRs				
Press	201	268	188	253
ITV	147	119	210	204
Channel 4	75	64	38	44
ITV + CH4	223	183	248	248
Total	424	452	436	501
1+ Cover				
Press	57	71	50	64
ITV	59	55	73	71
Channel 4	41	38	28	30
ITV + CH4	70	67	77	75
Total	88	90	88	91
4+ Cover				
Press	27	38	26	36
ITV	13	9	21	21
Channel 4	4	3	1	1
ITV + CH4	23	18	28	27
Total	54	59	54	63
Average OTS				
Press	3.5	3.8	3.8	4.0
ITV	2.5	2.2	2.9	2.9
Channel 4	1.8	1.7	1.4	1.5
ITV + CH4	3.2	2.7	3.2	3.3
Total	4.8	5.0	5.0	5.5
Unique Cover				
Press	18	24	12	16
ITV	13	9	24	16
Channel 4	4	3	2	1
ITV + CH4	31	20	38	27
Total	88	90	88	91

In terms of the relative weight of each schedule, there is a fairly even split between the press and TV in each case, although as expected the press delivers a better conversion to the target audience whilst TV is better at building reach. As mixed media schedules they perform well in terms of 1+ cover, 4+ cover and average opportunities to see. The unique contributions to cover of the press and TV are each reasonably high.

The low unique contribution to cover of each of ITV and Channel 4, reflects the overlap between the two channels and their lower individual advertising weights, particularly in the case of Channel 4.

Are Some Spots/Publications More Useful Than Others?

In order to start to answer this question we need to consider what we mean by more useful. In this respect we have considered two alternative requirements of a mixed media schedule:

- (i) To build high coverage (1+ cover) irrespective of whether this is through TV or the press. The objective would be to minimise the duplication between TV spots and publications, therefore increasing the unique contribution to cover of each medium.
- (ii) To reach the same people through TV and the press in order to deliver complimentary advertising messages. The objective would be to maximise the duplication between TV spots and publications, therefore reducing the unique contribution to cover of each medium.

There is no guarantee that such an approach will work because there may not be a strong enough relationship between particular TV programmes and particular publications. And there is no guarantee that the data fusion technique will provide a good enough simulation of single source data in order to find evidence of such relationships. However, this particular fusion has been subject to an extensive independent validation and is currently the best data source we have.

To evaluate the duplication between a particular publication and a particular TV spot, we need to compare the spot rating amongst readers of the publication with the spot rating amongst all individuals. For example, consider viewing to the first TV spot in the Citroen schedule and readership of The Times newspaper for Men ABC1.

The Times	A.I.R.	=	7.7
ITV 22:16	TVR	=	11.5

Amongst the 7.7% of the Men ABC1 who read The Times, the TV spot rating is 9.4, giving the following:

	<u>Men ABC1</u>	<u>Times Readers</u>	<u>Index</u>
ITV 22:16	11.5	9.4	81

This shows that readers of The Times are less likely to view ITV at 22:16 than are all Men ABC1; there is a low duplication. Therefore this pairing is desirable if the objective is to build coverage. By contrast, we find the following for another ITV spot in the schedule:

	<u>Men ABC1 TVR</u>	<u>Times Readers TVR</u>	<u>Index</u>
ITV 19:57	8.3	10.5	127

This pairing is desirable if the objective is to build duplication between TV and press. If, instead of "Times Readers", we consider each TV spot rating amongst individuals who have read any publication in the schedule, then the index on the All Men ABC1 rating indicates the ability of that spot to increase cover or duplication. If we call this index the duplication index, then a low duplication index is good for cover build whilst a high duplication index is good for increased duplication between press and TV.

The greater the range in the duplication index, then in theory the greater the flexibility to manipulate the mixed media schedule. Table 6.1 below shows a distribution of the ITV and Channel 4 TVRs of each schedule according to the value of the duplication index. This analysis is based upon the target sub-category of each schedule.

Table 6.1 % of TVRs by Duplication Index

Duplication Index	Citroen Men ABC1		Marmite HW + Ch.	
	ITV	C4	ITV	C4
Total	100%	100%	100%	100%
80 or less	1%	10%	4%	20%
81-90	13%	6%	22%	38%
91-100	16%	37%	41%	7%
101-110	68%	19%	23%	9%
110-120	1%	10%	5%	22%
121 or more	2%	18%	4%	4%
100 or less	29%	53%	67%	65%
101 or more	71%	47%	33%	35%
Average Duplication	102	102	98	95
Standard Deviation	±9	±18	±10	±26

The average duplications of all spots in each schedule are not really different to 100. However, there is a significant dispersion in each case, suggesting that an appropriate selection of TV spots could be made to deliver higher overall coverage or higher duplication between the press and TV schedules. This dispersion in the duplication indexes is summarised by the standard deviation (i.e. the root mean square deviation from the mean). For Citroen and ITV, this roughly means that an average spot will be ±9 points from the average duplication index.

It is interesting to note that for both schedules, the duplications for Channel 4 have a much greater dispersion than those for ITV. This will partly reflect both the lower ratings associated with Channel 4 spots as well as the consequent higher sampling errors in the duplications themselves. However, the difference is large enough to suggest that Channel 4 does provide a more flexible tool than ITV for mixed media scheduling with the press. This is not surprising and fits in with Channel 4's programme scheduling to smaller but more varied target audiences.

In a similar way, it is possible to evaluate the relative performance of each publication in the schedule. Table 6.2 below shows the duplication index between readers of each individual publication in the schedule and viewers of an average TV spot in the schedule.

Table 6.2 Press Average Duplication Indexes

Citroen Men ABC1			Marmite HW + Ch.		
Publication	AIR	Dup.	Publication	AIR	Dup.
The Times	7.7	99	Guardian	3.3	88
Daily Express	8.1	122	Best	11.2	111
Daily Mail	16.6	111	Independent	2.5	81
Guardian	5.5	80	She	3.8	95
Daily Telegraph	12.7	101	Woman	14.5	118
Sunday Express	9.5	116	BBC Good Food	4.9	100
Sunday Telegraph	8.2	97	Essentials	7.1	101
Sunday Times	12.5	98	Good Housekeeping	9.9	79
Mail on Sunday	17.0	103	BBC Vegetarian	1.3	75
Observer	5.6	86	Practical Parenting	4.6	100
Sunday Times Mag.	10.7	101	Mother and Baby	4.3	134
Yachting Monthly	0.8	60			
Independent on Sunday	3.3	72			
Average Duplication		102	Average Duplication		103
Standard Deviation		±11	Standard Deviation		±16

Again there is a significant dispersion in the duplication indexes, suggesting an opportunity for schedule manipulation.

In reality, there are also many complex interactions amongst a set of TV spots and publications which influence the final mixed media reach and frequency results. Ideally, one would try all possible permutations of all TV spots and all publications and pick the best. We do not have such an optimiser. Therefore we have used the marginal information above to split each schedule's TV

spots into a high and a low duplication set and separately to split each schedule's publications into a high and a low duplication set. Tables 6.3 and 6.4 show the AIRs/TVRs and the 1+ cover for the various permutations of high and low duplication sets.

Table 6.3 Citroen, Men ABC1 - Split Schedule Summary

High/Low Duplication		Press		TV		Total	
Press	TV	AIRs	1+Cov.	TVRs	1+Cov.	AIRs/TVRs	1+Cov.
All	All	268	71	183	67	452	90
All	High	268	71	91	51	359	85
All	Low	268	71	93	50	361	86
High	All	139	46	183	67	313	82
Low	All	130	48	183	67	322	83
High	High	139	46	91	51	220	73
Low	Low	130	48	93	50	232	75

Table 6.4 Marmite, HW + Ch. - Split Schedule Summary

High/Low Duplication		Press		TV		Total	
Press	TV	AIRs	1+Cov.	TVRs	1+Cov.	AIRs/TVRs	1+Cov.
1. All	All	253	64	248	75	501	81
2. All	High	253	64	121	59	374	84
3. All	Low	253	64	127	62	380	86
4. High	All	123	41	248	75	371	85
5. Low	All	130	44	248	75	378	86
6. High	High	123	41	121	59	244	74
7. Low	Low	130	44	127	62	257	79

In each case the split of TV spots and publications was designed to equalise the division of TVRs or AIRs so that the evaluation of changes in 1+ cover are not confounded by variations in the weights of the sub schedules.

In every case, the variations in 1+ cover are in the direction expected - high duplication TV spots or publications give lower 1+ cover than low duplication spots or publications. But these variations are not dramatic by any means - the largest is for Marmite there the low duplication press/low duplication TV schedule has 1+ cover which is 5 points higher than the high/high schedule. The corresponding difference for the Citroen schedule is 2 points.

However, perhaps these findings should be considered to be encouraging when the following are taken into account:

- We have limited ourselves to an internal examination of the TV spots and publications already in the bought schedules. We have not looked outside for programmes or publications with high or low duplications.
- Many of the TV spots and publications in the high and low sets in fact had duplication indexes not far from 100. Selecting from a wider range of programmes and publications, it would be possible to always use only those with more extreme duplications.
- A better optimiser would deliver better results. For example, it would not be too difficult to examine each TV spot and publication in terms of its unique contribution to the cover of the whole mixed media schedule and then iteratively remove and add TV spots and publications.
- A press specific fusion may improve the quality of the simulated single source database. At present the BARB/TGI fusion is driven by the requirement to simulate a general purpose TV and product usage single source database.
- Finally the value of the mixed media schedule evaluation would be significantly increased if both components of the fusion were the respective media trading currencies; i.e. fuse the BARB TV panel with the National Readership Survey.

Conclusions

There is now in the UK a need for mixed media evaluation tools using the independent currencies developed for each of the individual media. Although we have used TGI as a surrogate, and ideally we would have preferred to use the NRS, we have demonstrated that, by applying a proven fusion technique, a good evaluation of joint press and TV campaigns can take place. The important aspect of this approach is the manipulation of individual TV spots, especially on a channel such as Channel 4 that has varied target audiences within any daypart.

As a result, given the stability of the press readership data (due, in part, to the limitation of press readership techniques) campaigns can be amended using the more dynamic TV spot buying process. The objective may be to maximise coverage; or to use both media in different creative ways in order to increase individual effect - ie. to maximise duplication, taking into account creative harmony or dissonance. Either way, this approach provides a reasonable tool.

It is interesting to point out, from the results of the campaigns, when broken down by media that the best combination achieved was a mix of press, ITV and Channel 4. Given the greater flexibility that Channel 4 offers in terms of duplication with the press, and using the method adopted in this paper, perhaps better results could have been achieved with more Channel 4 and less ITV. When press alone is used the results are limited due, we assume, to a restriction on the number of publications in the schedules.

We hope that this is only the beginning of mixed media research in the UK and that not only will there be a consideration of more work in the TV or press field but also efforts to incorporate the industry research vehicles for other/media - for example, RAJAR, for radio.

As media becomes more fragmented, we need to know how better to build mixed media schedules.

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