QUALITY COMPARISON IN A MULTIMEDIA TIME USE STUDY

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Summary

Most campaigns comprise several types of media: television, print and sometimes several more. Until now, very little data is available for the comparison of their audiences and very few studies give insight into the quality of their contacts. Therefore methods have been discussed to integrate their research methods. We give a short overview of some of the possibilities: expanding print or television research to include more media types, or fusion of print and television data. Both have their advantages, but also serious drawbacks. Essential for the qualitative and quantitative comparison of the consumption of print and television is that their base should be the same. This means that print audience measurement has to take a giant leap and has to be measured with a time use study.

In this chapter an experiment is described in which respondents report their time use during several days of the week. Both primary and secondary activities are reported. Respondents register these activities on a PC at home by specifying the category of the activity and the time it stops and they started doing something else. Also the quality of media contacts is measured for a number of media types: papers and magazines, direct mail, television and radio. Target groups differ very much in their media consumption: the number of media activities, the average duration of the activities, the moments in time and the attention given to the activities. The results also show large differences in titles, channels, programme types and in primary and secondary media activities. Print receives much more attention than television, but the amount of time spent reading is shorter. Most attention is given to reading private mail, least attention is given to reading unpersonalised mail.

This qualitative data on media makes it possible to do qualitative planning and evaluation. A print media plan can be created by looking not only at reach and frequency, but at the total time spent, the average attention given to it, the number of pages read and the average duration of contacts. The same can be done with plans for other types of media. For planning a campaign with several media types the data contains a wealth of single source information, which makes it possible to calculate both reach and contact quality.

For the large scale implementation of time use studies two hurdles have to be taken. The first is the acceptation by the print media planners of a new kind of data. After so many years of reach and frequency research for the print media this will not be easy. The second is the need for electronic equipment in the homes of many respondents. But interactive teletext is widespread and set top boxes will soon be on top of a large part of television sets in the homes of Dutch consumers. Although the technique is there and is ready to be used, the acceptance of it depends on the availability of new tools and on media planners. It could very well be that the driving force of the new techniques will come from the advertisers, because large scale panels and detailed and quick measurements give many possibilities for effect studies and thus a larger accountability. The most important conclusion from this experiment is that single source multi media research is possible.

Introduction

Multimedia research and quality of contacts

What is lacking in audience research is integration of media, which makes it possible to perform planning on several media at the same time. What is lacking as well is information on the quality of contacts that is comparable for each medium type. Most campaigns nowadays comprise several media types, but there is no source that gives information on the media in one database that is comparable.

There are several ways to collect multimedia and qualitative data about media consumption. The first method is expanding existing readership research or television audience research. The second is fusion of both research types. In this paper a third method is used. It is the transformation of audience research into time use research, so that all media types can be measured in the same way: the time spent on media and how and when this takes place. This means that the print media contacts are measured in the same way as television ratings. In this way print, television, radio and other types of media can be compared.

Limitations of print and television audience research

Print media research

The definition of readership is, compared to the definition of viewership of television, relatively crude. There are too many titles, pages and advertisements to measure in any detail. In the Netherlands, data are collected on a continuous base (100 respondents a day) and reach is calculated on a half year or yearly base. Audience research is very static compared to television research. We do not know anything about differences in readership of specific issues or even about differences in seasons. The time dimension lacks almost completely. We also do not know anything about the quality of individual print contacts. But fortunately we do know very much about the differences in readership of a great variety of titles.

Although some efforts have been made to measure viewership in print media research, the results have only limited value for television planners. Television ratings differ every day and almost every minute of the day, so the about 100 respondents per day that report their viewing behaviour do not give more than indications about what the ratings are in different dayparts. Therefore print media research is not an appropriate tool for multi media research.

Television research

The Dutch television research is based on people meters in about 1000 homes. In contrast to readership research, reach is measured very precisely, that is advertising reach in an panel. Television planners know exactly how many people have seen a commercial, how often they have been confronted and who they are. But although reach is measured very precise, television research fails in some other important respects. The most important shortcoming is the small sample, which results in large statistical margins. We must add that the effective sample size of television research is even much smaller, because of clustering. The clustering is caused by the fact that people in one household tend to look at the same programmes. Other effects (panel effect and weighting the data) also add to the sample size problem (Den Boon, 1994). The last aspect is the lack of segmentation variables. The sample is too small for segmentation on product usage or other characteristics. Television research is rich on reach, but not very stable and is poor on segmentation. What results is the conclusion that television research cannot be used for print research. The sample is far too small for multi media research.

Fusion of print and television data

Fusion is the answer to the above mentioned problem, some say. But when we look at how this should be done, some serious problems arise. Television ratings can be transported to readership research if there are some common variables. Often these variables consist of socio-demographic data, sometimes also of data on media-imperatives. In the next figure the relationship between print and television data is shown to pass via the common variables (after Pioche, 1992).

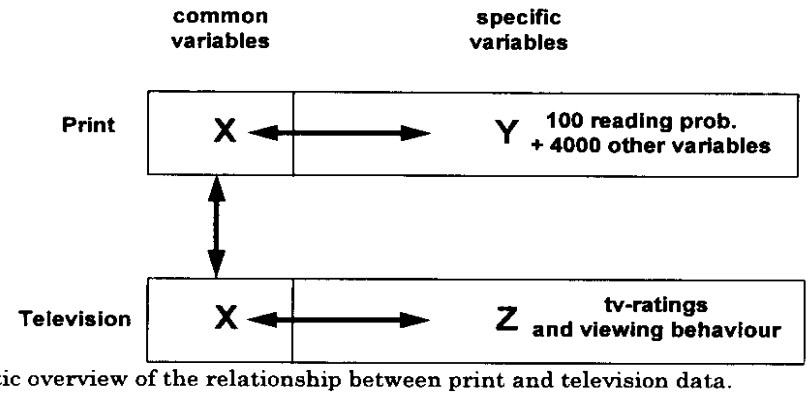


Figure 1. Schematic overview of the relationship between print and television data.

It can be shown that if and only if there is a very high correlation between X and Z and also between X and Y, the calculated correlation's between Z and Y are within acceptable statistical margins (Pioche, 1992). But, as we all know, media consumption, whether it is viewing behaviour or reading behaviour, is never correlated very high with socio-demographic variables of even with media-imperative data. Only very general media consumption variables can be predicted in such a way, not the reading of specific titles or even reading probabilities.

One important issue in fusion is often forgotten. Fusing television ratings into readership research is importing small sample results into a large sample. As a consequence, the ratings remain as unstable as they were in the television research, so not much is gained. Segmentation and multi media planning remain impossible. Fusion is only interesting if both samples are about the same size and are both very large. It provides general knowledge about multimedia consumption of target groups.

Another problem with the fusion of existing audience research is that it lacks data about the quality of the media contacts. Quality of contacts is becoming more and more important, because it gives information on how well the communication can get across to the consumer. Planners seem to be less interested in very accurate reach data, but more in accountability and data on communication effects. Therefore the interest for the quality of contacts is also increasing.

The last, but probably most important, problem is that print and television data are so different, that fusing them into one study does not solve the real problem. The real problem is that the definitions of reach are unequal, because television takes time into account, whereas print research does not. That problem should be solved first.

Time use studies

Time use studies and the significance for media research

Time use studies can measure the time spent on activities, whether they consist of reading newspapers, watching television or any other media consumption. Although people meters do measure viewing behaviour more exact, measurement of television viewing in a time use study increases the inter media comparability and gives information about the dynamics of media consumption. It also gives information about the situation in which media are used and the attention given to them. Finally, time use studies allow for effect studies, because confrontations with specific titles, issues and television and radio programmes are registered.

Method

The multi media time use study was initiated by Twinfo (a computer service bureau) and STP (a market research company). STP has a panel of about 2000 households, each equipped with a PC and modem. Each week some or all members of these households fill in a questionnaire. The central computer sends the questionnaire to the household and gets back the answers by telephone and modem. For this study, an electronic diary was created, especially suited for measuring media activities. Other activities are measured only superficially, to decrease respondent burden. Respondents are given the opportunity to report activities during other activities. These main or primary activities can contain many secondary activities. For more information about this electronic diary, we refer the reader to Kalfs (1993) and Den Boon and Kalfs (1995).

As the respondents are members of a panel, many background characteristics are already known. The enormous number of questions in media research can be divided over many interview sessions, so the respondents do not feel this as a problem and their motivation to participate can be kept high.

Some results of the multi media time use study

Some 3300 diaries have been collected of 1900 respondents. Each diary consists of activities with a time stamp marking the start and a time stamp marking the end of the activity. About 65000 primary activities are reported and 31000 secondary activities. This is about 30 activities per respondent per day. There are 11500 primary media activities (18%) and 10500 secondary media activities (33%). In total 1133000 media minutes have been reported, which is 350 minutes per diary or almost 6 hours of media per day. Every media activity, like reading a newspaper, has a total duration, an average duration and can be reported a number of times per day.

In the next table, the duration and number of media activities is given in four dayparts for the average consumer, from 0-6 o'clock, 6-12 o'clock, 12-18 o'clock and from 18-24 o'clock.

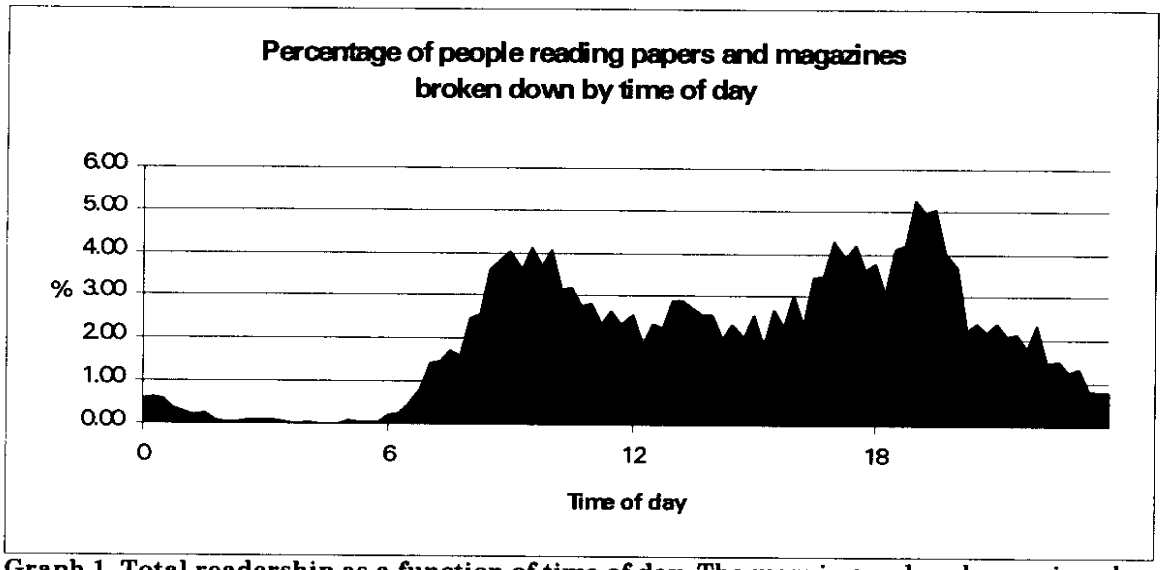
Table 1. Duration and number of media activities

	Primary			Secondary			Total		
Day part	Duration min.	Average duration min.	Number of activities	Duration min.	Average duration min.	Number of activities	Duration min.	Average duration min.	Number of activities
00-06 h	5	57	0	3	75	0	8	63	0
06-12 h	22	47	0	49	40	1	71	42	2
12-18 h	42	58	1	63	55	1	105	56	2
18-24 h	121	56	2	36	45	1	156	53	3
Total	191	55	3	150	47	3	341	51	7

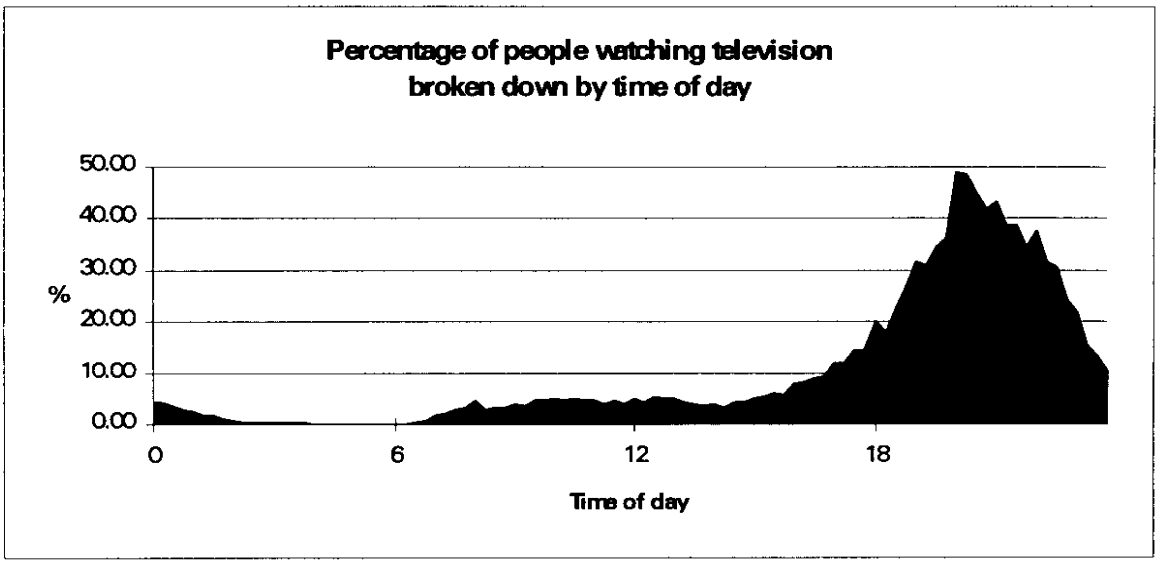
This table shows us that the average number of media activities per respondent per day is small. In the evening the number of minutes spent on media activities is largest. There are large differences between primary and secondary activities. The average duration of activities varies over the four dayparts.

Of course, the time spent on media activities can be broken down in more detail, i.e. in quarter hours. In the next graph (graph 1) the degree of participation is given of reading papers and magazines. This is the percentage of people that report reading during a given quarter of an hour. As can be seen from the next graph, the number of people that are reading during day time varies from 2% to 5%.

In the same way, the degree of participation in watching television can be calculated. Television planners call this total viewership. It varies enormously, from 5% during the day to 50% at 8 o'clock in the evening, as can be seen from graph 2.



Graph 1. Total readership as a function of time of day. The morning and early evening show the largest percentage of total readership.



Graph 2. Total viewership. The total number of people viewing television at the same time varies enormously during the time of day.

Media consumption in minutes

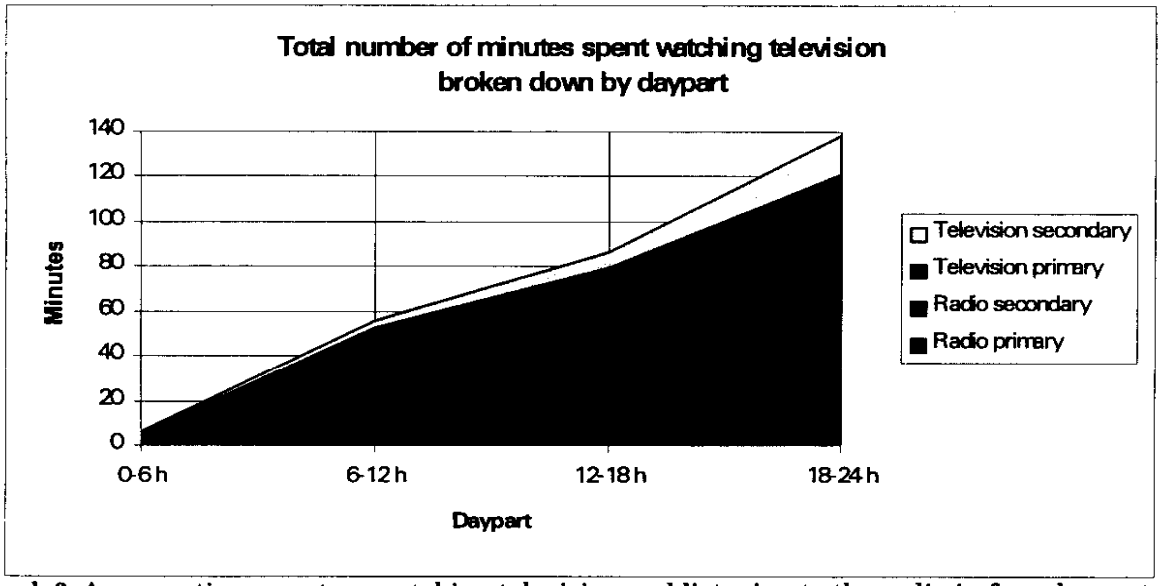
Both the average duration of media activities and the number of times people are involved in these activities vary substantially. These variations are partly caused by time constraints and differences in daily rhythms, partly because media types differ. In the next table the average duration of single media activities is given.

Table 2. Average duration of print media activities (both primary and secondary) in minutes

Moment	0-6 h	6-12 h	12-18 h	18-24 h
National daily	50	34	38	39
Regional daily	34	28	34	39
Weekly/Monthly	31	26	36	31
RTV-Guide	8	11	18	10
Free magazines	13	33	21	23
Brochures	8	13	20	20
Book	52	45	69	57
Other print	111	28	27	43

Media activities are for about 50% secondary activities. This means that respondents report they take place during other activities. This sometimes means they occur at exactly the same time, like listening to the radio while reading a newspaper. Sometimes the activities 'follow' each other, like reading a newspaper and watching television. Many secondary media activities are reported during meals, drinking and social activities. Also a lot of media activities are reported during other media activities. Listening to the radio is most cases a secondary activity. But when listening to the radio is a primary activity, there very often is also a secondary activity. In 23% of the cases, media are consumed while consuming other (or the same) media.

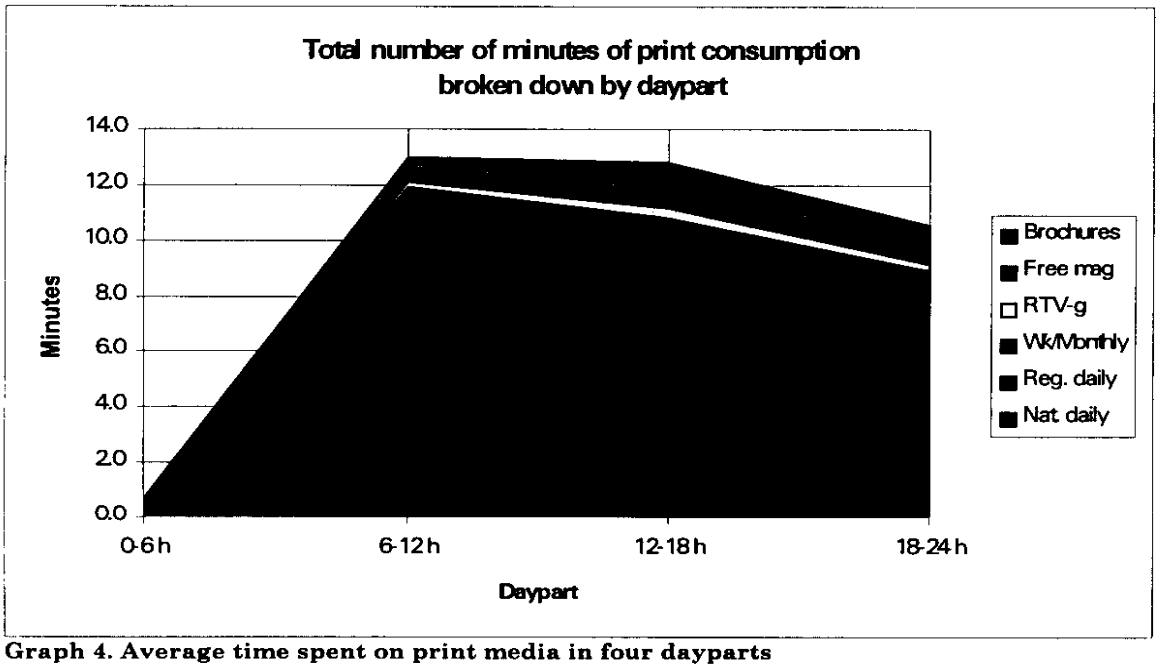
In each day part, watching television is the most time consuming media activity. Only in the morning, from 6-12 o'clock, listening to the radio and reading papers are also very common. In the evening, television is about the only primary media activity. But secondary activities are very important too. In the next graph (graph 3), the time spent on watching television and listening to the radio is given.



Graph 3. Average time spent on watching television and listening to the radio in four dayparts

From this graph it can be seen that when we look at the time spent on media activities, radio is very important. We can also see that it is almost completely a secondary activity, whereas television is mainly a primary activity. Radio is a daytime medium, television is consumed in the evening.

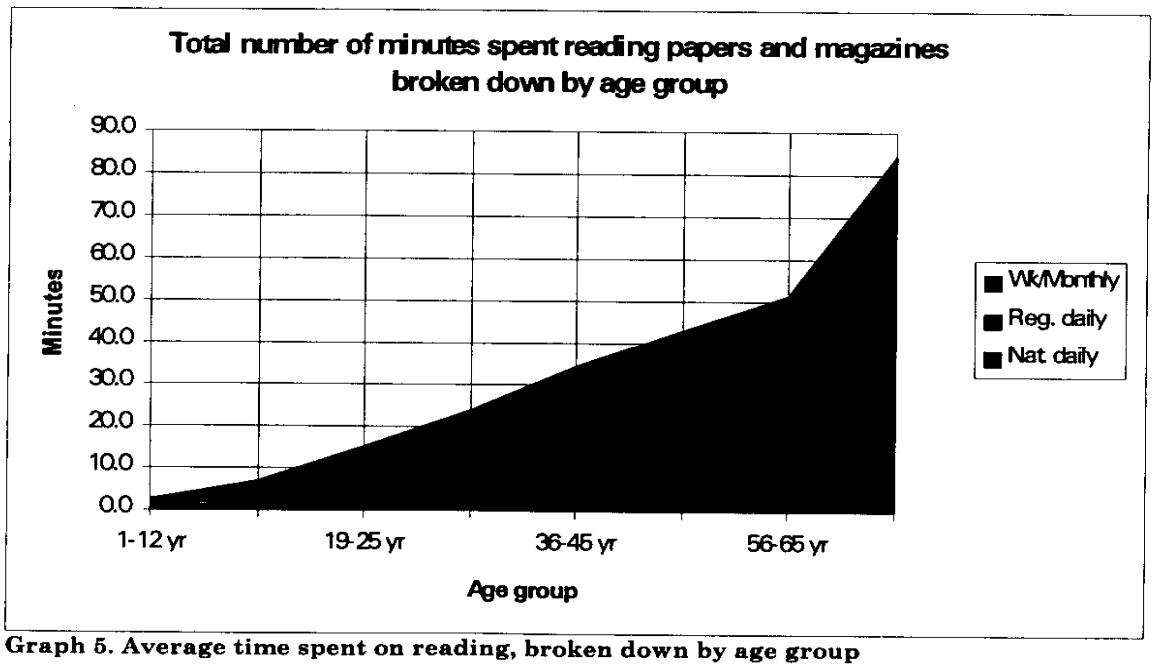
For the print media, a completely different picture emerges. In the next graph, various print media activities are given, each with the average number of minutes spent per respondent per day part. Both national dailies and regional dailies take upthe larer part of the consumers media time. Weeklies and monthlies are consumed in the afternoon and in the evening, other print media take up less time.



Graph 4. Average time spent on print media in four dayparts

With the time use study it is possible to conclude which print media are read before shopping or after, and whether there are differences between target groups, such as housewives.

In the next graph, the average time spent on reading papers and magazines is given for various age groups. It is very clear that reading takes up more and more time when people get older. Although we know from standard reach and frequency research that the readers of dailies can be found among all age groups, from this graph it becoes clear that older people spend much more time reading their papers. This is in contrast with magazines, that do not take more time to read as consumers get older.



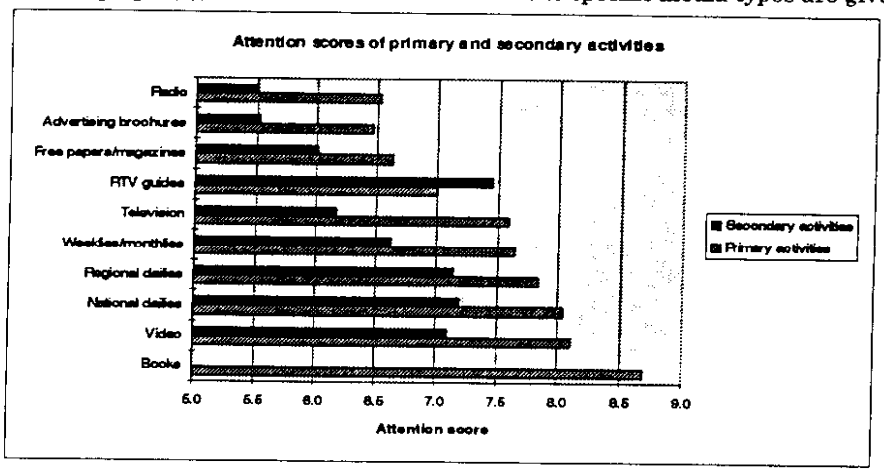
Graph 5. Average time spent on reading, broken down by age group

Quality comparison of media contacts

The time dimension in the multi media time use study tells us something about the duration and sequence of media conumption and in which specific situation people are reading, watching or listening. We now know much more about what precedes media confrontations, what follows and what happens simultaneously. But this does not give us all we would like to know about the quality of the contact, like impact, attention and amount read. A person could watch television all night and watch all spots, but see fewer advertisements than can be seen in a paper or magazine in 15 minutes.

In the time use study the respondents have been asked to give an attention score on a ten point scale for every media activity, varying from almost no attention to very much attention. In addition, the print media activities received a score on how much of the magazine or paper was read on a four point scale, varying from almost nothing to all pages. For advertising brochures it was asked whether they were personalised or non-personalised and how many from each were received and read.

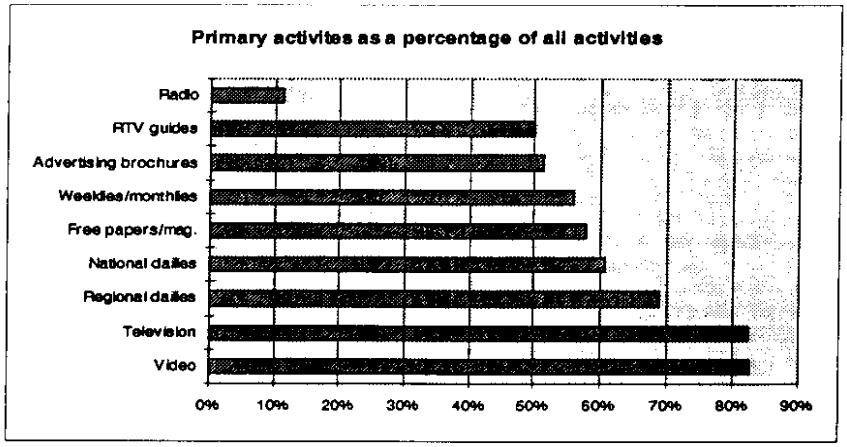
In the next graph (6), the attention scores for various specific media types are given.



Graph 6. Average attention score for various media activities. No secondary activities while reading books could be given.

Primary activities generally get higher scores than secondary activities, the exception is RTV guides. Low scores are given to radio and advertising brochures. After books and watching video, national dailies get the highest attention scores.Low scores are given to radio and advertising brochures. National dailies receive the highest attention scores.

Another indicator for the quality of media contact is whether the activity was primary or secondary. In the next graph (7) the percentage of primary activities compared to both primary and secondary activities is given. From this graph, we can learn that television gets the highest percentage. Radio gets the lowest percentage.



Graph 7. The average attention score for various specific media activities.

How to use time use data

How can media planners and media strategists use this kind of data? In several ways. For the first time all media types are measured in the same way by framing the media in the time perspective. This makes multi media comparisons possible. Besides, the comparison of media is easier now that we know much more about the quality and situations of contacts. It is possible to carry out a qualitative planning of media, because every media activity has an attention score. Qualitative planning is choosing the media that have the longest contact duration and / or have the highest attention scores. Qualitative evaluation means that a normal media plan is evaluated in terms of duration and attention. It allows media owners to analyse how much attention and time their media get, at what moments they are used, what consumers do simultaneously and what precedes and follows their media activities. For the first time it is possible to compare print, radio and television contacts in this way, or compare them with advertising brochures.

A word of caution should be given about the data though. The amount of data and the many possibilities of combining the variables are overwhelming. To make an effective use of the data it is necessary to develop computer applications that hide the raw data and the hierarchical levels from the end user, but give flexible access to standardised types of analysis.

A second warning is that one should not conclude that the amount of time spent on media is the same as impact. The time a target group has watched television is in itself not very interesting, if we do not know how many commercials they have been confronted with. The same holds for print, radio and other media. In this respect we will have to use media related correction factors to be able to compare different media. The duration of media activities can also be transformed into media imperatives.

Time use studies are very flexible and can be designed to measure four different aspects of media consumption. The first is multi media comparison, the second is quality of contacts, the third is moment of media consumption and the fourth is the dynamics of print consumption. The last aspect is the measurement of differences in reach and consumption of specific issues of print media. This can be measured in a panel study on a weekly basis, but has not been included in this study.

New data collection instruments for time use studies

Essential for a multi media time use study is a large scale, that is to say a large panel, of 5000 to 10000 respondents. This assures the stable measurement of small print media and the possibility of segmentation on products. For this type of research the HAPPI concept of John Samuels (1995) should be considered, that is large scale panels and data collection without interviewers and with trained respondents. To realise this, Twinfo in the Netherlands has created a system to make this technically feasible. The system is called TVQuest and is an interactive teletext application. Respondents call a toll free number and get their questionnaire projected on the teletext screen of a local television channel. By pressing numbers on their telephone they answer the questions. The answers are restricted to numerical answers. The answers are collected in a database and immediately after the completion of the questionnaire the central database can be analysed. This system reaches about 65% of all people in the Netherlands, which is, compared to Internet and systems based on set top boxes, very high. It can easily process the sessions of 10000 people per week with questionnaires of 20 minutes each. When respondents fill in their questionnaires every week, the capacity of the system is so large, that finally single source research becomes possible. The possibilities are numerous and the system is cheaper then telephone surveys. Several pilot studies using TVQuest are carried out to test what kinds of research profit most from the system.

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