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HOW ADVERTISING WORKS

(A Review of Multiple Measures of Advertising in the U. S.)

Jagdish Sheth

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I. INTRODUCTION

In 1967 the U.S. economy spent close to 18 billion dollars on advertising. This represents approximately the total buying power of markets as large as Belgium, Denmark, Norway, and Sweden combined together. Advertising expenditures have quadrupled in the last two decades from the 4.25 billion dollars in 1947. Bulk of the increase in annual advertising expenditures is closely related to proportional increases in Personal Disposable Incomes and Personal Consumption Expenditures. The latter two stood at 505.3 billion and 465.0 billion dollars respectively in 1966.

The post-war expansion of new markets with relentless introductions of innovations increased complexity of markets, created greater sophistication in marketing strategies, and put pressure on the advertising manager to more accurately account for increasing advertising and promotional expenditures. An impetus to measurement of advertising effectiveness came from the DAGMAR report which revealed that as late as five years ago there were no well-defined objectives in most of the top ad agencies which result in less efficient and at times inappropriate ways to understand how advertising works in specific cases. The DAGMAR report then gave the Awareness-Interest-Conviction-Action paradigm which has been used by the industry as a guideline for measurement of advertising effectiveness.

Unfortunately, the effects of advertising are complex and numerous. In some cases, advertising precipitates immediate sales, and in other cases, it only creates memory impressions. Complexity is compounded by the fact that there are time lags between the time a product is advertised and the time some favorable image toward the product or its sales are generated. Finally, a single advertisement creates multiple effects on the same consumer, and these multiple effects are subject to individual differences. The result is proliferation of advertising goals. General Motors, for example, has as many as 150 such goals among its divisions (Smith 1965). The enormous variety suggests that no single paradigm may accommodate all the types of effects. The multiple effects of advertising create a kaleidoscopic situation in which the best way to understand how advertising works is to look at the existing empirical research and from that inductively draw some inferences. In short, complexity is so great and the discipline so young that it is better to conduct and analyze empirical research.

Accordingly, the aim of this paper is to review existing empirical research on how advertising works. Furthermore, only those studies which contain research findings related to comparison of various effects of advertising are included. Thus, all studies which have used at least two separate measures of advertising effectiveness are included in this review.

II. A FRAMEWORK FOR REVIEW

Search for empirical research which has at least two independent measures of advertising effectiveness is like trying to follow someone in New York City during office hours. In the plethora of research on advertising in general, only a limited number of studies deal with multiple measures. Furthermore, whatever research could be gathered reflects individuality to such an extent that comparisons are either impossible or, at best, extremely difficult. It is unfortunate that not a single large scale research program has been yet undertaken which would standardize definitions of various measures and conclusively show interrelationships among these measures.

In order to bring the diverse empirical research together, however, a conceptual framework is presented in this section. The framework is anchored to the buyer's reactions, both mental and motor toward advertisements. It is a useful framework and promises to bring standardization in research methodology on advertising.

The consumer receives an advertising communication through the two senses of hearing and vision only. Each of these senses has receptors which open and close, and thereby regulate the intake of information. What we call paying attention (vigilance) and ignoring (perceptual defense) are manifestations of respectively, opening and closing of receptors. The two

variables which control the receptors and, therefore, intake of information are: (i) buyer's interest or predisposition toward the brand about which the advertisement communicates, and, (ii) the degree of ambiguity in the advertisement perceived by him. The influence of the first variable is easily observed in our tendency to skim over the commercial pages of newspapers and magazines or to engage in distracting activities when a commercial comes on television or radio. We, however, do pay attention to those advertisements which seem to be of interest and use. An extremely interesting physiological measure of selective attention is the extent of pupil dilation first discovered by Edward Hess. The greater the interest in the object, the greater is the involuntary dilation of pupil in an effort to take in more information.

The second variable - ambiguity perceived in communication - is more complex. It now appears that some degree of ambiguity (including zero level) is perceived in any communication. The perception is subjective and therefore, varies from one consumer to the other. If the level of perceived ambiguity is low, the consumer finds the communication as too simple, too familiar, and completely comprehensible with the result that he does not pay attention. In fact, familiarity may even create boredom or monotony. On the other hand, beyond a certain level of ambiguity, the communication becomes too difficult, less meaningful and incomprehensible with the result that the consumer

gives up receiving information. The effect is, once again, inattention. In between these extremes, there is a range of tolerable ambiguity in which he pays attention by opening his receptors and taking in information.

The first important effect of an advertisement as a process of communication is to create and sustain attention of the buyer. Only if he pays attention will the message be received intact and transformed into sensory signals. Secondly, Attention is a dynamic variable which may change from the inception of a commercial to its completion. Most of the change is by way of feedback of ambiguity that the consumer perceives as he watches or reads an advertising message. Finally, Attention is a necessary condition for any reaction on the part of the consumer when confronted with an advertisement.

Attention is extremely difficult to measure. The only exceptions are the numerous psychophysical measures which are adopted by advertising research firms in experimental testing of ads. These include heartbeat rate, perspiration, and pupil dilation. However, in realistic situations, Attention can be measured by direct observation at the time that the consumer is exposed to an advertisement or by consumers verbal description post facto. Both methods are subject to questions regarding validity and more importantly reliability. One of the common ways of measuring Attention is to obtain records from the consumer as to activities other than watching television program undertaken at various time intervals.

Once information is taken in and transformed into sensory signals, the next step is to attach meaning to that information. Attaching meaning essentially involves a congruity between the elements contained in information, contexts and the consumer's stored information based on prior experiences. Congruity is obtained by changing the quality of information by a variety of processes such as exaggerating or debunking the source, overlooking the context or avoiding some information while retaining some other. Collectively, this is called selective perception and retention. The outcome is some level of comprehension of the advertising communication.

Comprehension is then another effect that advertising creates. Comprehension is retention of meaningful bits of information obtained from a communication, which could be 'played back' at some later time. Comprehension, therefore, can range from retention of the simple fact that a particular advertisement was seen by the consumer to the complete description of that advertisement. Furthermore, since comprehension is the result of both quantitative and qualitative changes in objective information, it will contain emotional likes and dislikes besides meaning of bits of information.

Comprehension as defined here is a much broader effect of advertising. It could be measured by asking the consumer to, post facto, recall and describe a specific advertisement. It is

important to distinguish comprehension of a specific advertisement from that of the brand about which the advertisement communicates. The latter results from the former but also from numerous other sources. Numerous measures have been put forward to measure comprehension of a specific ad. Most of them fall into the category of 'readership' measurements. They include, among others, recognition of an ad (Starch and IPA), unaided and aided recall of brand or corporate name (National Analysts, Ben Gaffin), portfolio and editorial - interest (Politz) methods of recall as well as a variety of 'content probe' methods.

The third stage in the process of communication is the evaluation of the meaningful information. The consumer evaluates it in terms of his motives and the extent to which the brand for whom the advertisement appeared is felt as a perceived instrument of satisfying the motives. The process of evaluation results in attitude formation and change toward the brand. Attitude change is then still another effect of advertising. Attitude toward a brand contains evaluative cognitions of the brand and any emotional attachments toward it because of the function it performs as goal object.

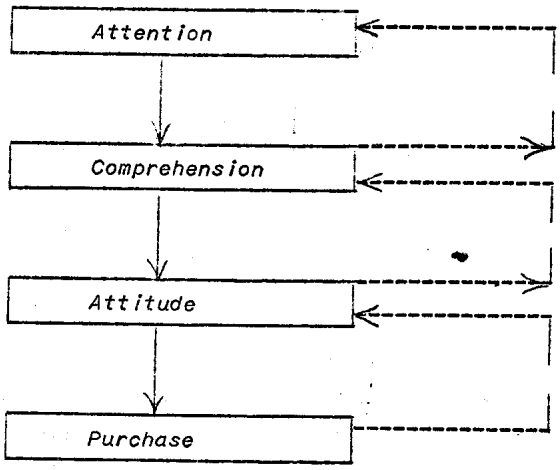
Measurement of Attitudes in general remains a diversive and controversial topic of research. Attitude as an effect of advertising, however, is researched only in a limited studies where only gross 'like-dislike' measures have been used. Attitude can be measured through some scales which are anchored to evaluative characteristics of the product.

The last step in the process of communication is to overtly react to the advertisement. The overt reaction appropriate from the marketing point of view is the buying of the brand. Purchase is then one more effect of advertisements. To attribute a purchase to a single advertisement is, however, analogous to attributing the success (or more appropriately, now the failure) of Yankees to Mickey Mantle's prowess as a baseball player. Mantle contributes to the success of Yankees but he is not the only factor. In instances where a single advertisement 'creates' sales (for example, newspaper advertisement by supermarkets of grocery items on sale), it is very likely that it acts as a triggering cue to the buyer's already-present predispositions and precipitates purchase behavior.

Measurement of Purchase is less difficult. Generally, the terminal act of physically exchanging goods for money is used as defining characteristic of buying. Measurement is either in units or dollar value. Occasionally, however, verbal reaction from the consumer related to his plan to buy in near future is substituted for actual purchase.

Each of the four effects of advertising is stochastically related. Prior stages in the hierarchy of effects thus become necessary conditions for subsequent stages. However, they are not sufficient conditions. Other external factors become sufficient conditions. Furthermore, subsequent stages often have feedback

effects on prior stages. For example, once a consumer buys a brand because he had favorable attitude, he is likely to reevaluate the brand (and therefore his attitude toward it) in light of satisfaction from usage. He is also likely to show greater interest in advertisements of the brand he just bought to reassure himself of the choice. Similarly, we already mentioned earlier that intake of information is influenced by interest in brand. Finally, comprehension of the advertisement will have feedback effects on Attention since it is a manifestation of level of perceived ambiguity. The stochastic nature of the hierarchy of effects and the interrelationships among these effects via feedback effects are shown below:



A number of conceptual frameworks similar to the above have been put forward (Palda 1966). Most of them have come under

criticism because the definitions of various hierarchies are vague and the feedback effects are lacking. More importantly, as we shall see later, only a few studies exist which can be considered as evidence to the complete hierarchy of effects.

The paradigm provided above, however, is useful since a recent survey of 50 top billing ad agencies revealed a consensus on the usefulness of multiple measures such as comprehension, recall, behavioral and attitude measures (Adler, Greenberg and Lucas, 1965). The same survey found that the ad men consider recognition and believability measures as having only minor importance. We will use the above framework to review empirical findings which contain at least two measures of advertising effectiveness. Two or more measures can be either at the same stage of the hierarchy or at different stages. The former is likely to be the case when the researcher is interested in validity and reliability of a measure. The latter is likely to occur when he believes that a single advertisement creates a variety of effects. Below we review separately multiple measures of advertising effectiveness at each stage, and then those for more than one stage.

III. INTRA-STAGE MEASURES OF ADVERTISING EFFECTS

Under the rubric of 'readership' measures bulk of the research findings deal with the comprehension stage of the hierarchy of effects. Only occasionally, there are studies which deal with other stages of Attention, Attitude, and Purchase.

Attention

Not a single study containing at least two measures of Attention exists in the literature. In view of the fact that so much creative effort is spent in getting consumer's attention and that Attention is a crucial first step in the process of communication, it is unfortunate that such scarcity of research should exist. A much greater scrutiny is desired as can be seen from the following facts. A recent Media/scope survey revealed that out of about 15,000 messages to which a housewife is exposed on television per day, she is not even aware that more than 75 percent appeared on television. Obviously, she does not pay attention when commercials come on the television. Similarly, Nuttall (1962) found that only 30 percent of the viewers are 'viewing only'; the rest, 70 percent, do some other activity while viewing a television program, and as many as 24 percent are not even in the viewing room. More men fall in the 'viewing only' category compared to women which could be because the latter continue to do household chores or cater to members of the family. 'Viewing only' increases with lateness of hour and with interest in the program. Finally, a reliability measure based on an interview next day practically gave the same results. Barclay, Doub, and McMurtrey (1965) also found that although 77 percent homes are tuned to network TV, only 49 percent are attentive, 34 percent claim exposure, and only 18 percent can prove recall.

Measures of Attention in both of the above studies are based on verbal reactions of the consumer. Furthermore, both studies define attention differently which makes comparison difficult. What we need is direct observation with or without electro-mechanical devices, of Attention at the time of exposure to advertisements.

Comprehension

A large number of research studies relate to measurement and accuracy of various readership techniques such as recognition, recall and content probe. We may classify empirical research in this area into the following four classes: (a) Research on correlations among various readership techniques, (b) Research to show either limitations of existing techniques or ways to improve existing techniques (c) Research detailing new techniques to gather readership in general or specific to a medium, and (d) Research on influence of external factors on readership measures.

(a) Correlations Among Readership Measures

A good comparative study on TV audience measures is provided by Ehrenberg (1964). Using the data collected by meter-controlled diary panels and aided recall surveys, he found that ratings on five separate measures were generally highly consistent. However, 24-hour aided recall was closer to coincidental survey (24 and 23 rating points) whereas 7-day recall was closer to

two daily panels (27 and 27 rating points). During the early evening time (5:30 to 7:30 P.M.), both the 24-hour and 7-day aided recalls underestimated ratings to a significant extent compared to other measures. Such underestimation is likely due to the fact that the household is unable to recall next day or next week because it simultaneously engages in distracting activities to a much greater extent than at the prime time. Some support for this argument also comes from Nuttall (1962) mentioned above. What is not understandable, however, is the vast difference between 24-hour aided recall and the two diary panels (24 vs. 27 points).

A second study on TV rating indices comes from Dudek (1964). He compared the share of audience measures of American Research Bureau, and various TVQ indices of Home Testing Institute such as percent familiarity, percent 'favorite' show and percent liking the show. He validated these measures by his own sample measures on the same 18 TV shows. He found that liking or preference of a show is fairly independent of familiarity with the show. The latter was closely related to share of audience measures, however, which suggests that liking of a show is not automatically guaranteed because of exposure and familiarity.

A comparable study on magazine readership can be found in Stock (1961). Rosenbluth (1963) and Dodge (1961) also find a high correlation between exposure, on the one hand, and aided recall and recognition respectively on the other hand. To see

whether comparable results could be obtained by telephone and personal interviewing, Cahalan (1960) used the 'yesterday' readership of newspapers. Based on two studies he found that in 95 percent of the cases there were no differences between the two research methods. Since telephone interviewing is cheaper, it would be more economical to use the telephone for readership data.

Ludeke and Inglis (1942) similarly compared the reported reading of magazines on seen, read some, and read all scale with a direct observation through one-way mirror, and they found that the two measures were highly correlated. Another study compared 'point - no point' (aided vs. unaided) ways of obtaining readership and found that on saw, read some, and read all scales, point or hint did not lead the respondent to overstate his readership (Ludeke 1945). Similarly, share of radio audience and a new 'most listened' measure were strongly correlated (Beville and Greene 1948). Finally, Ferber and Wales (1958-59) also obtained positive correlation between unaided and aided recall of pharmaceutical ads. However, the correlation was much stronger for journal ads (.32) than for mail ads (.06).

(b) Limitations of, and Improvements on, Existing Readership Methods

A number of research studies have attempted from time to time to point to some limitations with the usual recognition and recall methods of readership. One of the extremely important

studies on the limitation of 'seen' recognition scores obtained by IPA is from Belson (1965). He believed that 'seen' measures actually underestimated the normal readership because greater probing of the respondent was lacking in such measures which would otherwise bring back memory in the respondent. By establishing intensive interview procedure, Belson found that many more respondents were able to recollect that they had seen the ads under investigation. Similar results were obtained by Hubbard (1954) more than a decade before. Hubbard showed that not only were the National Analysts and the Ben Gaffin measures of aided recall different but also that both did not give enough clues to the respondents to elicit correct answers.

McGlathery (1967) hypothesized that direct answers on readings tend to bring biases in the readership data. He compared the claimed frequency with the editorial-interest method of recall and showed that readership was overstated in direct answers for monthly magazines but understated for weekly or bi-weekly magazines. This could be explained partly by the greater number of times a single issue of monthly is read than that of a weekly or bi-weekly magazine. Marder (1967), however, questions the objectivity of the editorial interest method. By comparing it with direct observation, he found that the former underestimated the audience size. This could be because occasional users of a magazine are lost by the technique due to forgetting. Implication is that editorial interest method is biased for those magazines which have a sizable number of occasional users.

Undoubtedly, a number of problems related to interview mechanics, size and composition of the sample, and validity of the technique exist in the measurement of readership of magazines and audiences by recognition and recall techniques. However, more serious is the fact that readership data are biased because of two types of confusion that the consumer experiences in verbalizing his reactions to the interview: (i) he may not acknowledge having seen or read an item which he actually did and (ii) he may acknowledge having seen or read an item which he actually did not. The latter type of confusion is more common, and a classic study by Bigelow (1948) is worth elaborating on this issue. The second type of confusion may arise because of genuine confusion in the mind of the consumer as to time, place, appearance and reasoning that if he has seen issue he must have seen the item under investigation. Bigelow took the last Sunday issue, a three-week-old Sunday issue and a prepublished Sunday issue of a newspaper, and found that 27.3 percent recalled as having seen the prepublished issue. Even when physically confronted with the issue, only 2.7 percent changed their mind.

It is possible to correct for part of the confusion described above by methods suggested by Lucas (1940) and Appel and Blum (1961). However, both the methods require introduction of prepublication copies which is hard to follow in obtaining readership of newspapers because the time of publication is very short. Davenport, Parker and Smith (1962) provide an

interesting alternative. Obtain two separate recognition measures, first by asking on a six-point scale the certainty with which the respondent feels he has seen the particular ad and secondly, by asking on an eight-point scale the extent of reading the ad. Then cross-classify the two sets of answers by creating a 6 x 8 matrix where the nonmatching diagonals represent the 'questionable' readership. Based on three separate studies, they conclude that readership is reduced by about 10 percent. Furthermore, respondents considered to be High Credible based on proportion of identifying correct ads out of total including some false ads, have much less confusion error as measured above.

Criticisms and questions about various memory methods of advertising measurement, including the recognition ratings, led the Advertising Research Foundation (ARF) to conduct a classic field experiment called PARM (Printed Advertising Rating Methods) study (Lucas 1960). Based on a probability sample of over 600 interviews it obtained readership of 125 advertisements half-page and larger in a single issue of Life and compared the obtained recognition ratings with Starch Advertisement Readership ratings. While there was a very high positive correlation, the average ARF score was 21.7 percent, which was significantly below the average Starch score of 26.4 percent. More importantly, when readership measures were staggered over time - up to two weeks after magazine issuance or last reading of it -

there were no significant differences on average noting scores. This is contrary to the theory underlying recognition which assumes some decay due to forgetting and memory variability. See also Wells (1964). Finally, there appeared to be some order bias in interviewing which resulted in higher scores for the first sixth-part as compared to last sixth-part of interview.

(c) Research on New Techniques of Readership

Agostini (1964) has proposed yet another method of readership which incorporates regularity of reading. A respondent is directly asked to describe his reading habit of a magazine as a regular, occasional or seldom reader. With repeated interviews, he obtains reliable and stable measures of regularity of reading which correlate very well with the editorial-interest method. Then a probability measure of reading an average issue is created for each of the three categories (regular has $p = .89$, occasional has $p = .24$ and seldom has $p = .02$) which is also validated by another independent measure. Agostini considers the regularity of readership measure superior to IPA recognition method and editorial-interest method. A similar method on a 10-point scale was proposed by Lester Frankel in Europe. Schaefer (1965) extended the method to readership of German magazines on a 13-point scale and found that the regularity scale provided very good estimates of readership of average number of issues. For a quantitative model of obtaining regularity of readership of a large number of issues, see Broadbent (1964).

Recently, regularity of reading measures based on direct questioning has come under attack. Schyberger (1966), for example, found that in general, there was a tendency of overclaiming readership in direct questioning. He classified respondents as never, seldom, every 4th issue, every 3rd issue, every 2nd issue, and every issue. Then he compared the actual proportions of respondents in each category with the 'expected' proportions. The latter were calculated as follows: If the consumer reads every fourth issue then his probability of reading an average issue is .25; if he reads every second issue, his probability is .50, etc. The comparison of actual vs. expected showed overclaiming tendency. Another finding is that there appeared to be greater overclaiming for magazines which were highly subscribed. Overclaiming differed from one magazine to another, and sometimes very sharply. Schyberger's findings would seem consistent with McGlathery's (1967) findings reviewed earlier. However, methodological issues remain unresolved. For example, underlying the 'expected' proportions there is an assumption that all readers have the same distribution of regularity of reading.

Landis (1965) suggests a Guttman-type scale in which a respondent is asked a set of behavioral questions regarding his regularity of reading. Based on the vector of answers, an exposure probability is created either for a person or a group having the same vector pattern. It is claimed that the technique is

equally suited for magazines and TV and that it is validated by standard external readership measures. It is unfortunate that Landis could not reveal the complete scale nor go in detail the procedures of calculating exposure probabilities.

An interesting and economical way of measuring TV audience ratings is proposed by Roslow and Roslow (1963). Rather than asking the respondent about only viewing of last night's programs, they say, it is better to ask them to reconstruct the last seven nights' programs. Thus we obtain viewing pattern for the whole week; the same sample provides data which are seven times more than the conventional methods. By showing a very high correlation (.94) between one night and seven nights measures they remove any doubts about effects of forgetting, confusion and any other distracting influences.

Ferber and Wales (1963) present a Simultaneous and Instantaneous Method for Measuring and Evaluating Readership (SIMMER). Betraying the lengthy name, the method is a simple and imaginative procedure in which 'readership forms' and 'stamped forms' to the magazine and specific articles or ads are respectively attached. The readership so obtained is then compared with same data obtained from personal interviews, in their case from a small sample of medical doctors in their well-known drug study. They found that personal interviews overstated the extent of readership which corroborates Schyberger (1966) and McGlathery (1967).

They also found that such overstatement varies among different doctors and different issues of the same medical journal.

Finally, a series of research findings have recently come up which give powerful insights into the meanings of various readership and other Comprehension measures. Ferber (1966), for example, examines the definition of interest in advertisements. In order for interest to be manifested in an ad, there are three conditions: The respondent must (i) notice it, (ii) read it, and (iii) believe it. Furthermore, presence of pictures and information value in an ad as well as respondent's familiarity with the product are the primary factors for generating interest in the ad.

Similarly, Wells (1964a) shows that the traditional ideas behind recognition and recall measures are probably not accurate. Recognition, for example, has little to do with memory as is commonly supposed. It is really a measure of respondent's subjective probability that he must have looked at that ad when going through a magazine issue. His redefinition of recognition is based on the facts that (i) scores do not decline considerably over time which they outht to if they were related to memory, and (ii) scores are more highly correlated with reader's interest measures (obtain from the PARM study) than with recall measures. Recall, on the other hand, is based on memory and reflects ad's ability to register the sponsor's name and deliver meaningful

message. It is, therefore, more closely associated with Seen-Associated measures than with Noted measures obtained by Starch. Finally, he considers recall to be more objective than recognition.

With regard to aided recall, Wells (1964b) feels that it measures much more than how many consumers and what they know about the ad: It also incorporates respondent's involvement, liking, etc. In other words, there is emotional appeal in the ad which is inherent in aided recall. Yet another dimension relates to meaningfulness, importance and believability of the ad. A scale was created to obtain these two dimensions which correlated strongly (.59) with Gallup Proved Name Registration (PNR) scores for 11 ads. Finally, Wells presents a Reaction Profile scale which brings out three dimensions of attractiveness, meaningfulness and vitality. Problems of administering this scale consisting of 26 items for more than four to five ads and indexing the orthogonal dimensions into a single number for comparative purposes, however, make his scale less practical.

After reviewing this section, two thoughts come in my mind. First, it is surprising to see that recognition and recall measures initially devised by pioneers like Starch and Politz still continue very much in existence and use despite admitted limitations; many attempts to reform or improve them have left no real mark. Second, time has now come for a major concerted research effort in this area which will squarely look at the

problem from outside rather than improve or modify existing measures. Such effort, I am sure will be difficult because it demands the same, if not more pioneering imagination that went in traditional measures, and because some resistance to change is inevitable.

(d) Influence of External Factors on Readership

One of the older studies by Branch (1945) compared the relative merits, in terms of readership measures, of direct mail and journal advertising for pharmaceutical goods. While there was greater probability of exposure for journal advertising, recognition was about the same. Furthermore, direct mail ads were more read but they are also more costly.

Greenberg and Garfinkle (1962) examine the decay effect in recall due to forgetting and other factors by obtaining unaided recall (UR), recognition, and correct identification of content (CIC) on both new (2 weeks) and old (4 weeks) issues of Life, Look, and Saturday Evening Post. They found that pattern of readership was about the same for the old and the new issues. However, greater the interest in an article, the greater the UR, recognition and CIC for both the old and the new issues. They draw the implication that for a more interesting feature less repetition is adequate and necessary. Generalizations from the study should be made cautiously, however, since the study related to only two most recent issues. It is very possible that decay in recall due to forgetting really begins with much older issues because the

respondent has a tendency to read the magazine again and again over a week or two-week time period depending on time interval between issues.

In the same study, Greenberg and Garfinkle (1963) found that visual magazines have consistently greater recognition, unaided recall as well as correct content identification. This can be explained by hypothesizing that pictorial representation as compared to linguistic representation is superior both in creating attention and comprehension. Finally, relating their two separate analyses, we may imply that visual content creates greater interest.

Frankel and Solov (1962) present an interesting experiment on ad position in a magazine. In two test groups, one group was shown a copy of Life where 4 ads were placed against ads on the opposite page, and another group was shown a copy of Life where two ads were placed opposite to two other ads and the other two ads were placed opposite to editorial content. No differences were obtained on two measures of Brand Probe and Content Probe. Also, sex was not related to the positioning of reading. Once again caution is required to generalize the negative findings of this study because the variation in ad position may not have been intense enough to register any impact. Otherwise one would be hard put to explain variation in readership of classified ads in Sunday newspapers.

A very interesting study on the influence of media context is given by Winick (1962). Medium's image is found to inject itself in the readership of ads with the result that a positive medium creates greater liking, believability and content recognition of the ad. Similarly, consumers inject positive or negative values in a factitious (though plausible) corporation depending upon their image of the medium in which the corporation is supposed to advertise regularly. Finally, there exists greater return of coupons if the medium has a positive image.

Yet another study measures the influence of blank space on recognition and recall (Bogart and Tolley, 1964). There is greater recall of bigger blank ads but the relation is not linear. Unaided recall is more pronounced for blank space than aided recall. Finally, the extent of recall also changes with change in the context, in this study other ads.

Recall of radio programs measured by coincidental and day-part methods is found to be influenced by the program's age, length and content, and by the time interval between exposure to program and measures of recall (Chappel 1942). The latter was obtained by measuring recall immediately after the program or one and half hours later. This would contradict Greenberg and Garfinkle (1962) if we assume that decay effect is common to both radio listenership and magazine readership.

An interesting comparison of spot, clutter and island TV commercials is provided by Barclay, Doub and McMurtrey (1965). A spot commercial is one which comes between programs or at half-hour intervals; a clutter is placed either near the beginning or the end of the program but is a part of the program; an island is placed near the middle of the program. Proved recall was found to be greater for in-program commercials than for spot commercials. There were, however, no major differences between spot and clutter which implies that length of the commercial is an important criterion. Finally, proved recall is, in general, greater for longer commercials, highly-rated nighttime (but not daytime) programs, and fully-sponsored programs.

Validity of Nielsen ratings of TV programs has been questioned by various quarters. However, there is only one systematic study (Cordell and Rahmel, 1962). Since Nielsen's HUT (Household-Using-Television) index is derived from a fixed panel of households, it is likely to be biased by inclusion of volunteers, by conditioning effects, and by response errors. Cordell and Rahmel compare HUT ratings with ratings obtained by coincidental surveys and find that the latter two effects (conditioning and response error) are not significant. However, there does exist the problem of noncooperation: The households which join the panel generally give overestimates of absolute ratings by 1 or 2 points which are significant.

Attitude and Purchase Behavior

While there are a number of studies which measure attitude formation and change toward a change either due to advertising stimulus or some other factor, there is not a single study which compares two or more attitude change measures due to advertising impact. Although attitude measures are considered important (Adler, Greenberg, and Lucas 1965), there still exist ambivalent feelings toward the role of attitude as a measure of consumer behavior. Controversy still prevails as to whether attitude is the cause of subsequent purchase behavior or vice versa as discussed earlier. It would be extremely interesting to devise an experimental design in which impact of advertising stimulus on attitude and purchase behavior is measured on a staggered basis and multiple measures of both attitude and purchase behavior are used.

IV. INTER-STAGE MEASURES OF ADVERTISING EFFECTIVENESS

Ultimately advertising must contribute to company's sales. With a strong belief in this philosophy, it becomes necessary to also look into ways by which advertising might generate sales. Various ways by which an advertising stimulus may contribute to company sales can be seen from the hierarchy of effects; each prior stage in the hierarchy becomes a necessary condition for subsequent stages - the process is stochastic. There exist, however, few studies, as of today, which provide measures for each of the four stages and put them in causal relationships (Palda 1966).

There are, however, a number of research studies which contain single measures of at least two stages. Such studies become the backbone for the discussion in this section. Also, a few studies give evidence for the feedback effects. It must, however, be pointed out that while a causal relation is assumed in our review, most studies only contain association measures between two or more stages.

Inter-stage measures of advertising effectiveness can be reviewed in the following combinatory classifications:

(i) Attention --> Comprehension

(ii) Attention --> Comprehension --> Attitude

(iii) Attention --> Comprehension --> Attitude --> Purchase Behavior

(iv) Comprehension --> Attitude

(v) Comprehension --> Attitude --> Purchase Behavior

(vi) Attitude --> Purchase Behavior

(vii) Feedback Effects

It is possible that a given study may not include measures of the intermediate stage and limit itself to the starting and terminating stages. For example, a study may contain measures of Comprehension and Purchase Behavior but not of the intermediate stage, namely, Attitude.

(i) Attention ----> Comprehension

Once again the problem is defining and measuring Attention. The only objective and accurate methods of measuring attention are the psychophysical scaling devices which are not extensively used in advertising research. The usage, however, is greater among practitioners but then published reports are not available.

To comprehend the content of an advertisement including the simple comprehension of the brand name, the necessary condition is that the consumer must pay attention to the ad. Any influence of distracting work activity while viewing or reading on consumer's attention may also influence his comprehension, and, therefore, recognition and recall later on. Nuttall (1962), for example, found that recognition of a TV program was greater among those who only viewed it than among those who also combined some work activity with viewing.

Wells (1964) cites a number of earlier studies (Strong 1911; Starch 1923) which show at least a strong correlation between attention value of an ad and its comprehension. Similarly, if we take exposure as a crude measure of Attention, several other studies (Rosenbluth, 1963; Dodge, 1961; Wallerstein, 1967) also provide a good positive correlation.

(ii) Attention ----> Comprehension ----> Attitude

There is again no definitive study. The only possible inclusion is Atkin's (1962) study on advertising pressure and store

patronage. He found that consumers who changed the grocery stores, advertising pressure produced greater attitude-change whereas it had no effect on the nonchangers.

(iii) Attention --> Comprehension --> Attitude --> Purchase

A very small number of studies give some empirical findings on interrelationship between Attention and Purchase. The most interesting is one by Jenssen (1966). Shoppers at a supermarket were invited to a mobile trailer to view different commercials including two versions of a commercial for the product in which the company was interested. The shoppers were then given coupons for several products which they could redeem. It was found that there were greater redemptions of coupons for the product about which the experiment was conducted. According to Wells (1964), Starch (1923) obtained correlations between sales and attention value headlines and text of advertisements based on 20 sets of ads (a total of 113 ads). The correlation between sales and attention value was .70. Unfortunately, attention value was measured after the exposure and with a rating scale, and not simultaneously with the exposure of the ads.

(iv) Comprehension ----> Attitude

Garfinkle (1963) provides some evidence which suggests that comprehension created by advertisement and attitude-change are positively correlated. Similarly, Haskins (1964), in an excellent review of advertising studies finds a strong correlation between

awareness and attitude-change. However, he also finds that it is not necessary to, at first, possess factual knowledge of the brand through advertisements to either form or change attitude toward the brand. See also Mindak (1956) and Lorimor and Dunn (1967) for further support. For evidence to the contrary, see Weinberger (1962).

(v) Comprehension ----> Attitude ----> Purchase

A number of studies are available which attempt to show, at least, a strong correlative relationship between some comprehension measure and purchase behavior. It should be remembered that we have defined comprehension in a broader sense, and it includes readership measures such as awareness, recognition and recall.

A good deal of controversy remains on the interrelationship of Comprehension and Purchase. The most controversial and widely known is Starch's Net-Ad-Produced-Purchases (Netapps) based on a cross-classification of readership and usage of a brand (Starch 1958a, 1958b, 1961a, 1961b, 1965). The Netapps method finds that there is greater usership of a brand among those consumers who recognize and recall advertisements of that brand than among those who do not. The difference between the two groups on the frequency of usership is then attributed to the brand's advertising. An identical method - the Ted Bates method of usage pull - is put forward by Reeves (1961). The latter has been applied to a variety of national media whereas Starch has limited itself to Life and Saturday Evening Post. Rotzoll (1964)

has critically evaluated the causality assumption in both the methods. He gives at least five arguments which negate this assumption. To this Palda (1966) has added two more arguments. Briefly, the arguments are that the flow of effect could easily be the reverse - you watch ads because you are a buyer of that brand, and that the correlation between readership and sales could be due to several external factors influencing both.

Numerous other studies show a very high correlation between some comprehension measure and sales or buying intentions. As early as the Twenties, Giellerup (1928) and Groesbeck (1930) have shown that ratings of an ad on a set of characteristics were strongly correlated with sales. Vindig (1964), however, finds that the high correlation between awareness and usage of a brand must be qualified by the fact that the consumer must believe in the themes of advertisements of various brands of toothpaste.

Smith, Parker and Davenport (1963), on the other hand, obtain very little correlation between ad readership and buying plans in an experimental study. Smith (1965) extended the earlier work and found that although prospects read an average advertisement 30 percent more than nonprospects the variance in ad readership could not be explained by prospect status. Nor could the variability be explained by the two independent external factors - ad size and products advertised. Also, the hypothesis that prospects are readers of smaller size ads was not borne out.

Smith thinks that it is the ad content which makes the difference in readership. An interesting study on the relationship between advertisements in a local free weekly and sales is presented by Andriessons (1966). He found that the readership was less systematic and conscious and often it did not get registered in the diary that the respondents were asked to keep. However, ads in free weekly were extremely important as triggering cues for precipitating sales after the consumer was predisposed to buy a product.

We have so far reviewed studies on readership-usership relation with respect to print media. Similar studies on radio listenership-usership goes back to the Thirties and early Forties (Lickert 1936; Smith and Suchman 1940; Stanton 1940). Recently Twedt (1965) used the listener-user relation on the wiener consumption. He found that consumption of wieners was 30 percent more in households who had listened to the sports games on radio in which only Oscar Mayer advertised. Interestingly, however, the effect of listening on buying began only after 15 exposures to Oscar Mayer advertising.

Starch readership-usership relation is extended on a continuous basis by M.R.C.A. through its HEP measures (Rogers 1960). Fisk (1959) finds that greater the propensity to communicate greater the probability of purchase of new products. See also Roens (1961). An interesting study in evaluating industrial advertising is given by Margolis (1947) who found a high correlation between advertising cost, number of inquiries, and sales. Landis and Coffin

(1956) present data on the impact of television advertising on retailers. In Fort Wayne, Indiana, when television was introduced for the first time, all the retail outlets were interviewed both before and after the introduction. Generally, there was greater ownership of TV among retailers, more awareness of advertising of grocery products, and greater sales were attributed to TV advertising.

A series of studies by National Broadcasting Company (NBC) on the relationship between television viewing and buying have repeatedly suggested that a positive correlation exists between the two, and that this correlation is greater for television viewing than for magazine readership (National Broadcasting Company 1950, 1953a, 1953b; Coffin 1963; Landis and Coffin 1956). Since a very succinct summary is already provided by Palda (1966), we will not review these in detail. It must be, however, pointed out both Semon (1964) and Palda (1966) present sufficient arguments to doubt the causality presumed in most of these studies. Except for the Davenport study (NBC 1953b), it is argued that the viewing-buying relationship presented is subject to questions.

(vi) Attitude -----> Behavior

While a considerable number of studies exist, in marketing and the behavioral sciences, on the relationship between attitude and behavior, only a few studies show the effect of advertising concurrently on attitude-change and purchase behavior-change. A large part of this limited empirical research comes from the

Schwerin data. Several researchers have used the Schwerin's Relative Competitive Preference (RCP) measure (obtained as difference in percentage of respondents between pre- and post-exposure who would like a brand in a lottery less the norm established by Schwerin for similar products) as an indicator of preference or attitude for predicting changes in market share (Kudish 1965; Buzzell, Kolin and Murphy 1965). Their work has come under some severe and fruitless criticism (Fothergill and Ehrenberg 1965a, 1965b) with rebuttals (Murphy and Buzzell 1965). Most of the problems in using Schwerin measures arise from their aggregate nature, however. For similar attempts at establishing relationships between attitude (preference) and sales, see Lipstein (1965) and Rohloff (1966). Finally, an older study (Lavbourn and Longstaff 1949) presents data which show that not only liking of a radio program affects liking of a commercial in that program but that it exerts considerable influence on sales of the brand advertised. For example, of those liking the program, 57 percent would definitely buy the brand wherwas only 14 percent would definitely buy it among those who did not like the program. See also Neadle (1964) for a good study on attitude-change and sales-change due to a promotional campaign.

(vii) Feedback Effects

In the paradigm several feedback effects were provided and discussed earlier. A major feedback is the tendency on the part of the buyer, who has recently and probably for the first time

bought a brand, to seek out reinforcing cognitions and thus expose himself to the advertisements of the brand. Most of the studies which attempt to establish causality between readership and sales could be also used as evidence for the feedback effect. Several other studies on measurement of cognitive dissonance also fall in this category.

Another feedback is from attitude or predisposition toward the brand on the readership of its advertisements (Appel and Blum 1961; Frankel and Solov 1962; Laybourn and Longstaff 1949).

The feedback effect from Comprehension to Attention is not explicitly tested in any study. However, Krugman (1964) show through pupil dilation, how Attention toward cards and silverware is affected by prior interest and preference.

V. SUMMARY AND CONCLUSIONS

Preceding pages reveal that despite extremely imaginative efforts, patient research and fairly sizable output, there remain at least two broad problems in our understanding of how advertising works.

First, problem of defining various measures of advertising effectiveness still plagues the discipline. The pioneering efforts in this direction were made in the late Twenties and early Thirties primarily by practitioners in advertising research. Their contribution still dominates the present research despite vociferous cries of inadequacy of such definitions. Why? The first and foremost reason is that majority of advertising research practitioners even today do not seriously take into consideration excellent theoretical foundations laid in psycholinguistics and communications research. Such foundations were lacking during the pioneering era but not today. The second reason is that although advertising research is probably the only branch of marketing which has consistently looked at research from the consumer's point of view, the emphasis is still not as complete. Finally, influx of new techniques primarily from the psychometric, psychophysical and sociometric disciplines have been absorbed without critically questioning the underlying theory or even relevance - unless the psychological underpinnings of various measures are properly grasped, there is not likely to emerge any standardization in our measures of advertising effectiveness. Some excellent efforts in this direction are made by Lucas and Britt (1963), Wells (1964a, 1964b), Mindak (1956), and Ferber (1966).

Second, most of the studies reviewed here turn out to be experiments. Imagination and painstaking efforts that have gone in these studies have, instead of creating some firm hypothesis or even tentative laws, resulted in a heap of isolated gems without a common thread to put them together, to interrelate them to create an ornament. Perhaps I am overly critical at this stage; perhaps it is the sign of level of maturity of our discipline. But it is we who make the discipline and we do control, to some extent at least, the rate with which it will mature. All that it demands, it seems to me, is commonality of goals among advertising researchers which are anchored to the development of the discipline.

Finally, the paradigm used in this paper to review empirical findings brings to the forefront the fact that research on how advertising works is lopsided. Heavy clustering exists primarily in the area of Comprehension (actually only with regard to recall measures), and in the relationship between Comprehension (again actually recall or recognition) and sales. There exists a real dearth of knowledge on almost all other combinations deduced from the paradigm. The particular area which needs the immediate input of effort is the effectiveness of advertising on consumer's Attention.

What seems to be immediately needed is a research program similar to the ARF's PARM study several years ago, which in the natural setting of real world situation would attempt to measure, in an integrative manner, the variety of effects that advertising

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