MEMORY DYNAMICS AND MARKETING

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Abstract

Basic research on human long-term memory constitutes a potentially valuable guide to the marketer. Towards the end of enhancing the long-term recall or recognition of an advertising message, a variety of reliable empirical effects that characterize human memory may have potent applications. We illustrate the potential applications of three such effects.

Memory Dynamics

Today's consumer makes product choices within an information-laden context. To understand consumer's choices as well as influence those choices, it is fruitful to draw upon a number of principles and phenomena from research on human information processing. In particular, we focus on the implications of three factors shown to be important in experimental studies of human memory: (a) the temporal spacing of repetitions of a message, (b) the positive consequences of retrieving an item from memory, and (c) the role of environmental context reinstatement in determining what can or cannot be recalled or recognized. These phenomena are described herein and potential -- or actual -- applications within the realm of advertising are illustrated.

The Spacing Effect

One of the most reliable phenomena in the field of memory is that an event that occurs twice is more likely to be remembered than if it occurs once. More interesting is the fact that, given a number of repetitions, their scheduling of presentation will have a profound effect on memory. The "spacing effect" refers to the well-established finding that repetition is more effective for long term retention if the repeated presentations are spaced apart than if they are massed closely together (e.g., Melton, 1970). There are but two constraints on this generalization. First, if the retrieval test is very close in time to the last presentation, then massed presentations produce somewhat better performance than spaced presentations (see for example, Peterson, Hillner, & Saltzman, 1962). Second, the spacing effect is largely limited to long term recall; the effect is attenuated when memory is tested by recogition. The general disadvantage of massed presentations for long term recall can, however, be offset at least somewhat. By changing the context or setting of the second occurrence, the spacing effect can be simulated even after very short intervals (for a discussion, see Glenberg, 1977).

Retrieval as a Memory Modifier

Retrieving information from memory is a potent device to increase subsequent accessibility of the information. In fact, retrieving an item from memory may be more effective for an upcoming retrieval than an additional presentation of the item (for an illustration in the case of memory for names, see Landauer & Bjork, 1979). The difficulty of an initial test is a factor influencing its later benefit. The more demanding an initial successful retrieval, the more accessible the information becomes for a later retrieval attempt (for possible interpretations of this result, see Bjork, 1975).

There is yet another implication of retrieval as a memory modifier. Bjork and Geiselman (1978) found that retrieval of some members of a set of items has two effects. The retrieved items become more retrievable in the future and the items not retrieved initially become less retrievable later. The untested items thus become less accessible, due to the retrieval of only a subset of the items.

Context Reinstatement

The environment in which learning occurs influences memory for information acquired in those surroundings. A wide variety of studies have demonstrated recall to be better when testing takes plce in the original learning environment, as opposed to alternate surroundings. For example, Godden and Baddeley (1975) demonstrated the effect under extreme environmental differences (study-test on land versus underwater), Smith, Glenberg and Bjork (1978) found the effect under more moderate environmental differences (rooms were varied), while Eich (1980) showed that a study-recall match of internal, pharmacological state produced better performance than a mis-match. Thus, subjects who learned information underwater recalled more when tested underwater than when on dry land, and subjects in a particular pharmacological state (drugged or sober) at learning recalled more when back in the corresponding state at test than when in the alternate state.

It is not always possible to retrieve information in the same environment in which it was learned. Under these circumstances, the deleterious effects of context change can be reduced by a number of manipulations. Smith (1979) demonstrated that context effects can be brought under cognitive control by having people imaginally reinstate the learning environment at the time of test. In addition, given that information is repeated during learning, varying the contexts in which the repetitions occur produces better recall than when all repetitions occur within the same context (Smith, Glenberg & Bjork, 1978).

Applications to Advertising

Each of the foregoing principles is suggestive of a number of applications to advertising. In what follows we outline some of the ways each principle might be, or has been (usually inadvertently), used to enhance the effectiveness of advertising messages.

The Spacing Effect and Advertising

Repetition in advertising is an important area to marketers because it is related to a number of concerns. For example, scheduling of advertisements, the number of different ads to produce, and the amount of

corrective advertising necessary to remove the effects of prior deception all depend on an understanding of repetition. Optimal repetition, or a simulation of its effects, is particularly important where later recall is required, as in the choice of services (e.g., banks or restaurants); that is, where the consumers's behavior is not likely to be influenced by in-store recognition.

To illustrate the power of repetition, consider the following phrases: Good to the last drop; Reach out and touch someone; You deserve a break today; It's the real thing; We are driven -- the list could go on and on. It is surprising how many advertising slogans we know and for how many years we remember them. They are probably so well retained because they are given multiple spaced repetitions in a variety of contexts, across many advertising campaigns. Many TV advertisers seem to think that massed presentations of a given commercial are optimal, judging from the number of instances in which the same ad is shown several times during a particular program. To truly optimize repetition effects for a given commercial message, the advertisement should be presented at different times of day, varying days of the week, and across different types of shows. However, a problem for advertisers is their lack of control over audience exposure to any repetition; hence, any manipulation that simulates the spacing effect is important to incorporate at the intramessage level. Recall that by changing the context of a repetition, the spacing effect can be simulated even within a massed presentation. Thus, perhaps presenting multiple scenarios within an ad, each different in context yet each promoting the same message, might simulate the spacing effect within a single presentation of the ad.

Retrieval Practice and Advertising

In general, anything retrieved from memory will be better remembered than if the same information were presented. Thus, a worthwhile goal for advertisers is to have the observer recall or generate some target fact or impression about the product in question -- or to retrieve information presented in a prior ad. American Express has an ingenious campaign that challenges the viewer to identify the famous person who is swearing by the service. Not only do the ads capture our attention but they force us to actively participate. Several years ago an ad for a bank took prime advantage of the retrieval practice effect. The bank's name was repeated several times in the course of a jingle. Once the audience was familiar with the jingle, the announcer started the jingle one last time, but stopped just before singing the name of the bank. The listeners were forced to generate the name of the bank from memory. One final example is the Lite beer series involving athletes. The ads are neither funny nor interesting unless the viewer recalls certain earlier ads in the campaign.

Since results show that retrieving a subset of items leads to lessened accessibility of the untested items (Bjork & Geiselman, 1978), incorporating retrieval into an ad has additional advantages. It is possible that by making a particular brand the prototypical, highly recalled exemplar of a class, recall of competing brands is inhibited. Jello brand gelatin and Kleenex tissues are among the brands that have succeeded in just such a feat, with their brand names having become synonyms of the products themselves.

Contextual Reinstatement and Advertising

To take advantage of the context reinstatement principle, one would like the situational context of the point of purchase or use of the product to overlap the situational context portrayed in the advertisement. Certain advertisers have used such a campaign. For example, the Alka Seltzer campaign that showed people suffering from indigestion ("I can't believe I ate the whole thing[") or the American Express traveler's cheques advertisements that portray situations in which checks have been lost or stolen, both take advantage of situational overlap. The makers of A-1 steak sauce want consumers to use their product in restaurants so they portray consumers in restaurants requesting the condiment.

Varying the contexts in which repetition of an ad occurs is also a way to take advantage of this principle. A pool of advertisements, each emphasizing the point of the campaign in a different way, is more effective than the same ad repeated numerous times. McDonald's, for example, has a series of ads, each depicting the restaurant as a place of refuge. Variation of input context is a formidable facilitator of later recall, and even if a pool cannot be created, context can still be varied. An ad can be shown in the context of different types of shows, or perhaps better yet, across different types of media. The point to consider is that contextual enrichment at input helps later recall, and advertisers who use the same ad and advertise solely during particular types of programming, could be making a mistake.

Conclusion

Today's advertiser is working with an information-saturated consumer. To present a message in such a fashion that it captures a consumer's attention, is encoded and understood, and is later recalled or recognized, is a formidable task. Given the limits on the human's capacity to processing information, and the highly fallible character of human long term memory, advertisers must carefully consider how they construct their messages. Basic research on human information processing, carried out by cognitive psychologists, can have potentially quite important application to marketing and advertisers. This paper has put forward three such principles as examples of the kinds of recent findings that might have fruitful application in the real -- and unreal -- world of advertising.

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