Reconstruction Theory: Towards an Understanding of How Media Scheduling Influences Memory For Advertising

Hayden Noel, University of Illinois, USA
Kathy LaTour, UNLV, USA

It is well established in the advertising literature that memory for advertising is dependent on media scheduling. Two consistent themes have been present in that literature: first, repetition of advertising enhances memory, and second, distributing advertisements over time increases their longer-term retention. The verbal learning literature refers to such memory enhancement as the “spacing effect”. Two theories have recently received support in the marketing literature to account for these prevalent findings: study phase retrieval and reconstruction. The purpose of this investigation is to determine, through two experiments, the theory that best explains the spacing effect in a marketing setting. Our results support a two-factor theory of spacing effects and this finding has both theoretical and practical implications for marketers.

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EXTENDED ABSTRACT

In a recent USA Today (“Cingular Wireless” 2005), there was a full-page ad for Cingular phone service, and two pages later, a smaller, “teaser” ad. In contrast, during the 2005 Super Bowl, Cadillac had 5-second spots (“0-60 in 5 seconds”) touting their new model, which were later followed by longer, 30-second commercials. Both these examples demonstrate that media planners recognize that ad exposures can be complementary. With the increased cost of reaching consumers, it is not surprising that advertisers are looking for more creative ways to get more impact for their advertising dollars (Rothman 1989). Other than the design of advertising messages themselves, the issue of how to best schedule advertising delivery is perhaps one of the most important and practical issues facing advertisers (Longman 1997). Research has shown that the same ad campaign can lead to very different levels of consumer memory depending on how it is scheduled (Zielkes and Walter 1980). Unfortunately, the media model one adopts is often based on agency affiliation (e.g., Hellin and Haygood 1985) rather than being motivated by one theory versus another. Early research in marketing recognized the importance of both theory and practice in understanding advertising’s longer-term effects (Strong 1977). This current research investigation is more theory driven in order to develop insights for practice.

A stream of research exists in the psychology literature which could deepen our understanding of the processes that impact media scheduling. This research on the “spacing effect” examines the advantage in memory for repeated items that are separated by time or other material (i.e., spaced) compared to repeated items that are presented in succession (i.e., massed) (Janiszewski, Noel, and Sawyer 2003). This effect has been found in a variety of information settings, such as memory for nonsense syllables, words, sentences, pictures and faces (Dempster 1996), and most relevant here, it has been found for both television commercials (e.g., Singh et al. 1994) and print ads (e.g., Appleton-Knapp, Bjork, and Wickens 2005). This research on the spacing effect seems relevant for marketing researchers interested in advertising scheduling as it examines how repeated material interacts with different presentation schedules to impact memory. In a recent meta-analysis of the spacing effect Janiszewski, Noel and Sawyer (2003) found support for two main “spacing effect” theories: study phase retrieval and reconstruction. A third theory, encoding variability, received marginal support but has been very prevalent in marketing as an explanation of some repetition effects (Singh et al. 1994). An examination of these theories could enhance our understanding of the spacing effect and its underlying processes. This would have both practical and theoretical implications for marketers.

Encoding variability theory has been dominant in the marketing literature (e.g., Singh et al. 1994; Unnava and Burnkrant 1991), especially as it relates to memory for advertising. The theory states that objects possess different features—contextual, structural and descriptive features. The theory accords an advantage to spaced presentations since spacing gives people the opportunity to encode different features of an item at different points in time. This allows them to create multiple retrieval routes and leads to better recall. Memory for an ad can be enhanced if different executions are presented over time because more memory traces would lead to better ad recall. Practically, this would suggest advertisers have different formats of their ads (rather than repeating the same commercial).

Recently researchers have demonstrated that study phase retrieval is a better explanation than encoding variability for the spacing effect in an advertising setting (Appleton-Knapp, Bjork, and Wickens 2005). Study phase retrieval theory states that when a consumer sees a series of advertisements for a brand, that they use the second ad exposure to bring to mind the first ad they saw. The second ad, therefore, refreshes memory for the first ad. Reconstruction theory says at the time the consumer sees the second related ad, they engage in either a superficial or great amount of processing depending on the accessibility of the first occurrence. If ads are spaced, they will engage in a deeper level of processing. A greater amount of elaboration at the time of the second presentation would lead to better ad memory.

Using repeated brand-attribute word pairs for several fictitious brands (e.g., in the automobile category—Lancia: Heated seats; Lancia: Anti-lock brakes), Noel (2006) showed that reconstruction is a more appropriate explanation of spacing effects compared to encoding variability theory. However, he did not rule out study-phase retrieval as a potential explanation for his results. Additionally, prior research has not empirically tested reconstruction against study phase retrieval. We believe that when advertising is presented over a longer time period and ad memory is accessed even later, that reconstruction theory would provide a better model for advertising researchers and practitioners to consult when scheduling their ad exposures.

In two experiments, using a variety of paradigms and measures adapted from the verbal learning literature, we examine reconstruction theory to determine if it best explains the spacing effect in advertising. Our first experiment examines a factor that could help establish dissociations between study-phase retrieval and reconstruction theories. We focus on the length of retention interval. In our second experiment, we focus on the impact spacing has on memory for either the first or the second presentation of a repeated item. This would provide additional insight into the underlying mechanisms that govern the spacing effect. In both of our experiments, we found reconstruction theory to be the most robust explanation for the results. Our results by no means contradict the previous findings supporting study phase retrieval (Appleton-Knapp, Bjork, and Wickens 2005; Verkoeijen 2005). We simply establish conditions under which another theory might have greater explanatory power. These results point to the need for a multi-factor theory to explain the spacing effect. We end with a discussion of the implications of these findings for theory and practice.