



CHICAGO JOURNALS

Journal of Consumer Research, Inc.

The Effects of Advertisement Encoding on the Failure to Discount Information: Implications for the Sleeper Effect

Author(s): David Mazursky and Yaacov Schul

Source: *Journal of Consumer Research*, Vol. 15, No. 1 (Jun., 1988), pp. 24-36

Published by: [The University of Chicago Press](#)

Stable URL: <http://www.jstor.org/stable/2489169>

Accessed: 20/10/2013 15:06

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



The University of Chicago Press and *Journal of Consumer Research, Inc.* are collaborating with JSTOR to digitize, preserve and extend access to *Journal of Consumer Research*.

<http://www.jstor.org>

The Effects of Advertisement Encoding on the Failure to Discount Information: Implications for the Sleeper Effect

DAVID MAZURSKY
YAACOV SCHUL*

The study examines the impact of encoding of product information on temporal changes in product attitudes following exposure to discounting appeals. The sleeper effect, which is manifested by increased message effectiveness over time, was observed in two replications when participants were induced to encode the message elaboratively. Under this condition, consumers were guided to imagine themselves consuming the advertised products while viewing the ads. The sleeper effect was not observed, however, when consumers were not induced to elaborate on and integrate message information (Experiment 1) or when the request to imagine themselves using the products was delivered after the discounting cue was conveyed (Experiment 2). These findings support a model that postulates that the magnitude of the sleeper effect is influenced by the relative availability of the product information and the discounting cue appeal. Additional mediating mechanisms are explored and discussed.

Persuasive messages are often paired with discounting cues that suppress immediate attitude change. This phenomenon is prevalent in a variety of marketing related situations such as remedial advertising (e.g., Dyer and Kuehl 1978; Jacoby, Nelson, and Hoyer 1982; Mazis and Adkinson 1976; Wilkie, McNeill, and Mazis 1984) and situations involving low credibility of message communicator (e.g., Harmon and Coney 1982; Sternthal, Dholakia, and Leavitt 1978). It has been suggested that over time, the message and the discounting cue become dissociated from one another. Consequently, the impact of message-related knowledge increases, and attitude change, which has been initially suppressed, is facilitated. This process has been termed the *sleeper effect* (Hovland, Lumsdaine, and Sheffield 1949).

Despite several early demonstrations of the phenomenon (e.g., Hovland et al. 1949; Weiss 1953; Kelman and Hovland 1953), the sleeper effect became a target of criticism questioning its validity and replicability (Gillig and Greenwald 1974). Gillig and Greenwald's

conclusion, "to lay the sleeper effect to rest," stimulated research that focused primarily on refining its definitional properties (Cook et al. 1979; Gruder et al. 1978) as well as on reassessing the operationalization of its underlying constructs. Rather than questioning the authenticity of the sleeper effect, recent research has attempted to identify the conditions under which it does or does not occur.

Another outcome of this criticism involved an attempt to uncover the process underlying the sleeper effect (Hannah and Sternthal 1984). Unlike the original formulation that attributed the sleeper effect to the discounting cue from the message (e.g., Cook and Flay 1978), Hannah and Sternthal used the notion of the availability of knowledge (Tversky and Kahneman 1973) as a theoretical guideline to accommodate previous findings. Aside from this recent contribution however, scant attention has been devoted to unraveling the mechanism that promotes the sleeper effect.

Yet another point of criticism stated that despite the large volume of empirical evidence, the robustness of the sleeper effect in terms of its ecological validity is questionable. In most cases, the effect was demonstrated in laboratory settings using student samples. Gruder et al. concluded that "any statements about the ecological validity of the sleeper effect, which we have repeatedly demonstrated in the laboratory, must rest on speculation" (1978, p. 1074).

*David Mazursky is Lecturer, School of Business Administration, The Hebrew University, Jerusalem. Yaacov Schul is Senior Lecturer, Department of Psychology, The Hebrew University, Jerusalem. This research was supported by grants from the Recanati Foundation, The Mutual Research Fund, and The Sheinbron Foundation. The authors wish to thank Beth Hirschman and Jack Jacoby for commenting on an earlier version of this article and Iris Mohr for suggestions and collecting the data for Experiment 2.

The purpose of the present article is twofold. First, it provides additional theorizing to account for the process giving rise to the sleeper effect so as to improve predictions concerning the conditions under which we ought to expect its occurrence. Second, given the importance of understanding temporal consistency or change in immediate versus delayed judgments in the context of marketing decisions, it reports on two experiments conducted outside the lab, using a non-student sample and presenting ads of professional quality as stimuli. Both experiments were carried out with roughly ten-day intervals between immediate and delayed judgments.

The Effects of Elaborative Encoding on the Magnitude of the Sleeper Effect

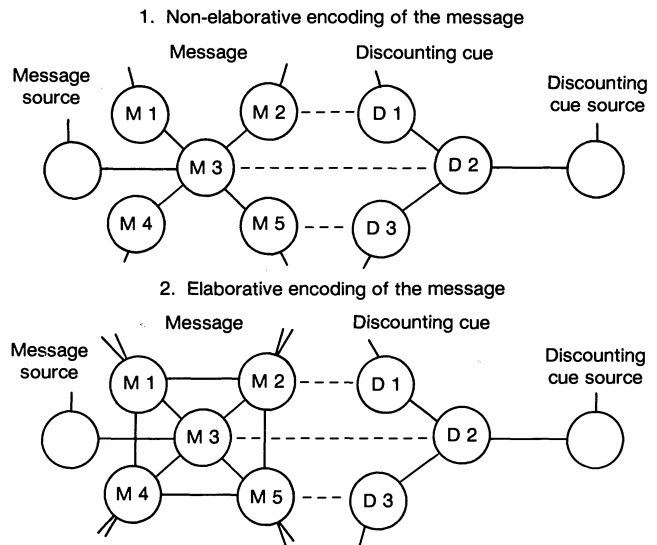
The phenomenon investigated in this study involves a context in which a message (e.g., "Car X performs well because it is fully automated and controlled by a central computer") is paired with a discounting cue (e.g., "In contrast to the claim made by the company, the computer in car X is unreliable").¹ In such a case, a post-discounting judgment is posited to depend on two related factors. First, during the encoding of the message and the discounting cue two networks of associations are formed. One network is composed of associations between the message and other related knowledge. Similarly, the other network consists of associations between the discounting cue and existing knowledge (see Anderson 1985 for a general review of associative network models). These networks are illustrated in section 1 of Figure A by the nodes originating from message and discounting cue components and directed outwards (components, in this context, are items of information such as verbal arguments and pictures).

Second, the outcome judgments depend on the associations that are generated between the two networks, that is, the networks representing message and discounting cue. Such associations are formed because both the discounting cue and the message bear on the same phenomenon and both are in a close temporal proximity in their presentation (Weber 1972). These associations are represented in section 1 of Figure A by the broken line linking discounting cue arguments with message components (and perhaps most likely, with the challenged argument).

The dissociative cue hypothesis (Kelman and Hovland 1953), which served as the conceptual basis in most of the early sleeper effect studies (e.g., Falk 1970; Johnson and Watkins 1971; Weiss 1953), attributes the sleeper effect primarily to the second set of associative links—namely, the links between the message and the discounting cue. The hypothesis states that with the in-

¹See a detailed discussion about various operational definitions of discounting cues in the General Discussion section.

FIGURE A
THE REPRESENTATION OF DISCOUNTING CUE AND MESSAGE INFORMATION UNDER ELABORATIVE AND NON-ELABORATIVE MESSAGE ENCODING



NOTE: M 1 denotes an item of information related to the message. D 1 denotes an item of information related to the discounting cue. — denotes associations within message and discounting cue information. ---- denotes associations between message and discounting cue information.

roduction of a discounting cue, an immediate attitude change is suppressed. However, with the passage of time the message and the discounting cue become dissociated from one another, permitting an increased message influence. Consequently, the sleeper effect is observed. Thus, according to the dissociative cue hypothesis, the mechanism that promotes message influence stems primarily from the fact that the associations between the message and the discounting cue become looser with the passage of time. This process makes the discounting cue potentially irrelevant for the avocation and evaluation of the message in delayed judgments.

This rationale has been recently complemented by an explanation that focuses on the balance in the availability of the message and discounting cue at the time the judgment is made. Hannah and Sternthal (1984) introduced the availability-valence hypothesis in accounting for the increased message influence that occurs over time. According to this mechanism, the outcome judgment reflects the balance of information considered at the time the judgment is made. The balance in information availability is conceptualized in relative rather than absolute terms. This is because memory capacity is limited and, according to the hypothesis, attitude change occurs when currently held information is supplanted by upcoming information. If over time, associations linked to the discounting cue become relatively less available than associations linked to message information, then the residual impact of the message

is expected to enhance persuasion. Consequently, a sleeper effect is observed.

In view of the associative networks that are generated within and between the message and discounting cue as just illustrated, the two explanations appear to focus on the same cognitive mechanism from different angles. While the dissociative cue hypothesis focuses on the function of the message in retrieving the discounting cue (i.e., the “between network” associations), the availability-valence hypothesis dwells more on the capacity and memory structure of each of the two associative networks (i.e., the “within network” associations) that influence the relative availability of the schemata in judgment formation. Accordingly, the magnitude of the sleeper effect can only be satisfactorily conceptualized if these two types of associations are considered.

The relative availability of message and discounting cue knowledge largely depends on the processing that each of the two information cues undergoes during encoding. Consider, for example, a situation in which an ad advocating the purchase of a car is presented and the reader is induced to imagine herself driving that car. Under such a condition, the “self” structure (see Markus 1987 for a recent review) is likely to function as a focal reference for elaborating and integrating the message. Specifically, a large number of associations is formed between the representation of the self and that of message components as well as among message components themselves (e.g., Kuiper and Rogers 1979; Markus 1977; Markus and Sentis 1980). To distinguish this type of encoding from that which results following a simple reading of the message with no further processing, it will be referred to as *elaborative encoding*.

Elaborative encoding may affect judgments in two ways. First, if message information is elaborated upon during encoding, its representation becomes highly available in later processing (Anderson, Lepper, and Ross 1980; Burnstein and Schul 1983; Paivio 1971; Petty, Cacioppo, and Schumann 1983). Second, an extensive elaborative encoding may induce integration of the message representation, making it meaningful as a single unit while inhibiting the availability of the components individually (Fiske and Dyer 1985; Hayes-Roth 1977; Sentis and Burnstein 1979). This associative network is schematically depicted in section 2 of Figure A.

Conversely, if message information had not been extensively elaborated upon during encoding (*non-elaborative encoding* condition, hereafter), message components may be encoded within multiple knowledge structures with fewer associations among them. While message components under non-elaborative encoding conditions might be linked to each other to some extent, as they all bear on the same product, the outcome network of associations is likely to be far less elaborated than that obtained following encoding under the “self” schema. This is because the self serves as a much richer

encoding context (e.g., Rogers 1977; Rogers, Kuiper, and Kirker 1977). Thus, the difference between elaborative and non-elaborative encoding conditions is reflected by the number of associations generated during information encoding both among message components and between them and other related knowledge.

Consider the impact of a discounting cue when it follows elaborative encoding of the message relative to when it follows non-elaborative encoding. In the case of elaborative encoding (section 2 of Figure A), a discounting cue is more likely to appeal to the interpretation of the holistic representation of the message than to its components (Fiske and Dyer 1985). The likely outcome of this scenario is two distinguishable structures—one representing message-related knowledge and the other representing discounting cue knowledge. On the other hand, in the case of non-elaborative encoding, the representations of the message and discounting cue may not be as dichotomized as they are in the elaborative encoding condition because the message has not been integrated and unitized. Therefore, each of its components may be available separately (section 1 of Figure A).

This difference in encoding of the message and the discounting cue information may not be reflected in immediate judgments in face of highly available discounting cue knowledge. Associations to the discounting cue in immediate judgments are highly available by virtue of their recency of processing (Hannah and Sternthal 1984). Consequently, the discounting cue information is likely to suppress the impact of message knowledge (Wyer and Unverzagt 1985) under both conditions.

In delayed attitude judgments, however, discounting cue information is no longer recent in making judgments, and the differences in memory following elaborative and non-elaborative encoding conditions become more pronounced. Following elaborative encoding, message knowledge is highly available while discounting cue information becomes relatively less available or even tends to be forgotten (Festinger 1957; Goethals and Reckman 1973; Ross and Conway 1986). The enhanced availability of valenced knowledge ought to promote persuasion, and a sleeper effect should be observed. Such a process is less likely to occur in the non-elaborative condition where message knowledge had not been unitized or associated with the self in the first place. Under this condition, message information is less available, and the sleeper effect may not be observed (Gillig and Greenwald 1974). In statistical terms, the above patterns imply an interaction between the type of encoding (elaborative vs. non-elaborative) and the time of measurement (immediate vs. delayed).²

²Note that the above prediction does not assume that the two types of encoding lead to the same immediate judgments. In fact, in some

Covariates of the Sleeper Effect

Further understanding of the sleeper effect can be gained by studying the relative explanatory power of the factors that mediate this process. Although it may be implicit in sleeper effect studies that product evaluation (e.g., attitude) is influenced by product beliefs (e.g., Dickson and Miniard 1978), attitude change also may be mediated by attributing higher credibility to the message provider or by derogating the credibility of the discounting cue communicator over time. In the face of a discounting cue, consumers may draw two types of inferences, the first type including product-related beliefs and the second type including inferences about the sources providing that information (e.g., Eagly, Wood, and Chaiken 1978; Hovland and Weiss 1951). The latter type of inference may lead consumers, for example, to discount any information provided by a "dishonest" manufacturer whether or not it is relevant to the discounting cue information. Such differences in the inferences consumers draw following a discounting cue may vary between immediate and delayed judgment.

Changes in source-related judgments that take place over time may facilitate the sleeper effect either in conjunction with or as an alternative to product-related beliefs. Unfortunately, the studies reported to date have neglected the relative impact of product-related beliefs and source credibility on changes in product evaluation that occur over time. The present study measures changes in product beliefs and in the credibility of message versus discounting cue communicators and tests the extent to which they covary with the sleeper effect.

Although message information is typically provided by companies interested in promoting their sales, discounting cues are communicated by neutral sources that seek to protect the consumer's best interests (e.g., the FTC). Accordingly, the credibility of message communicators may be more vulnerable to changes than is that of the discounting cue communicators. The lack of expected variation in the credibility of the discounting cue provider makes it less likely that this measure will mediate the sleeper effect. Consequently, it was hypothesized that the credibility of message provider is

studies, elaborative encoding has been shown to impede the impact of a discounting appeal (e.g., Anderson et al. 1980; Ross et al. 1977; Schul and Burnstein 1985). In another study (Schul and Mazursky 1985) an a priori prediction has been conceptualized and tested showing that if the discounting cue instructs subjects to ignore a message argument because it had not been proven to be true (and, thus, leaving the truth value of the challenged argument ambiguous), elaborative encoding is likely to inhibit discounting. However, if the discounting cue provides information that is directly opposed to the challenged argument, elaborative encoding may facilitate discounting. As will be demonstrated in the study, the latter type of cue has been applied and tested in this study. Note that both types of discounting cues are relevant in marketing practice (see Wilkie et al. 1984 for examples).

more likely than that of the discounting cue communicator to covary with temporal changes in product judgments.

EXPERIMENT 1

Experiment 1 examines the effects of elaborative (vs. non-elaborative) encoding on the magnitude of change that occurs in attitudinal judgments between immediate and delayed measurements. We hypothesized that the sleeper effect will be more pronounced in the elaborative encoding condition. Operationally, a test was carried out by contrasting an attitudinal measure of two groups of respondents whose message encoding conditions differed. One group received the message and was induced to elaborate on it, and the other was not induced to elaborate on message information during encoding.

The experiment involved exposing consumers to an ad for a new car. The elaborative encoding manipulation was carried out by asking respondents to imagine themselves driving that car. To further induce elaborative encoding, participants were asked to write down their thoughts on the ways in which a new computer installed in the car eases the driving task. (Information about the computer had been the theme of the ad and was later the target of the discounting cue.) The focal dependent variable in the analysis was an attitudinal measure. Product belief and source credibility measures were also assessed as possible mediators of the sleeper effect. Finally, recall protocols were analyzed to test the validity of the posited paradigm with respect to the availability of pro-message versus pro-discounting cue information in making judgments.

Method

Subjects. Ninety-six adults participated in Experiment 1. All were residents of two neighborhoods in a city with a population of approximately 300,000 people. They were approached in their homes and were paid for their participation. Due to the nature of the study, which entailed a 10-day interval between visits, an attempt was made to minimize the opportunity for word-of-mouth communication among participants. To this end, only one person in a household was interviewed. Furthermore, in no case were two neighbors residing in adjacent apartments interviewed. The instruction given to the interviewers was to call every fourth apartment (or house) in that neighborhood. About 82 percent of the participants reported that they drive cars on a regular basis. About the same number of males and females participated.

Design. Experiment 1 consisted of four between-subjects conditions. The conditions were created by crossing an encoding manipulation (elaborative vs. non-elaborative encoding) with the time of attitude measurement (immediate vs. delayed measurement).

Procedure

The study was presented as a "consumer response survey" to an ad for a new (in fact, fictitious) car. All respondents were first exposed to an ad advocating the purchase of the car. Next, the elaborative encoding manipulation was delivered to respondents in the elaborative encoding conditions. Immediately afterwards, a page containing a discounting cue in the form of a written message attributed to a well-known car-testing agency was shown to the participants. A set of four filler questions (e.g., "How often do you drive?" "When did you receive your driver's license?") was then delivered.

The respondents in the *delayed* measurement conditions completed their first session upon filling out the set of filler questions. These respondents were not forewarned about a possible revisit in the future. Respondents in the *immediate* measurement condition were handed at this point the experimental questionnaire consisting of a series of dependent measures (to be discussed in the next sections). Finally, they were asked to recall the information presented in the original ad. Upon completing the questionnaire, they were debriefed.

About 10 days later,³ the interviewers revisited the respondents assigned to the delayed measurement conditions. They administered a questionnaire to the respondents that contained the same question and recall measurement used in the immediate measurement conditions.

The Ad and Discounting Cue. The ad consisted of five color pictures, all pertaining to details of the car's interior (e.g., back seats, front seats) and a verbal message. The message advocated the purchase of the car by listing its advantages on five key attributes. The first claim presented the car as being fully controlled by a newly introduced computer. This computer was said to control all the mechanical systems, including gasoline consumption and automatic door-locking systems, and to operate as an information center forewarning about any possible failure. The second and third claims pertained to low gas consumption and convenient payment terms. Fourth, it was claimed that the car was very spa-

acious, seating five adults comfortably. Fifth, the seats were said to be adjustable by an electronic switch. The message was headed by the car's (fictitious) name and the logo, "The Car that Thinks with You." The ad, which was of professional quality, was prepared by an advertising agency.

The claim about the superiority of the car's computerized systems was then discredited by the discounting cue. It was attributed to an official car testing agency that was said to have reacted in response to the published message. It stated that the computer of the new (imported) car has never been tested by any independent agency. If it malfunctions, according to the statement, it may cause a complete failure in all the car's systems. Furthermore, the message contended that since the car "was introduced just recently," expert service and computer parts are scarce.

Dependent Measures. The questionnaire assessed four measures. The first measure consisted of the averaged value of attitude toward the car (with a scale ranging from "very good" to "not good at all") and attitude toward purchasing the car ("If you were able to afford it, would you be willing to purchase the car?" ranging from "certainly yes" to "certainly not").⁴ The second measure inquired about respondents' beliefs regarding the new computer along two dimensions ("Does the computer contribute to the car's value?" and "To what extent can the computer contribute to the car's performance?"). The third measure consisted of a question pertaining to the credibility of the message source. The fourth and final measure pertained to the credibility of the discounting cue communicator. All questions were rated on nine-point scales.

Results

A two-way ANOVA with type of encoding (elaborative vs. non-elaborative) and time of measurement (immediate vs. delayed) as between-subjects factors was performed on the attitude measure. The means of this contrast are displayed in Table 1 and section 1 of Figure B. We hypothesized that the sleeper effect would be more pronounced in the elaborative encoding condition. This hypothesis was tested statistically by the interaction effect. This effect is, in fact, significant ($F(1,92) = 4.0, p < 0.05$). Simple effects analysis revealed that following elaborative encoding, delayed attitudes were significantly more positive than immediate attitudes (mean index increased by 1.10, $F(1,92) = 3.9, p < 0.05$). However, there was only a weak and nonsignificant dif-

³Delay intervals ranged between seven and 11 days. About 80 percent of the respondents were revisited after 10 days. In previous studies, the timing of delayed posttests ranged between one and seven weeks (see, for example, a review by Cook et al. 1979). A close look at these studies reveals no clear relationship between length of measurement interval and the rate of dissociation. Since in Experiment 2 we used a vacation trip as a stimulus, it was imperative that the weather conditions throughout the process of data collection would be reasonably stable. Only then could a spontaneous change in attitudes between immediate and delayed posttests have been interpreted as the sleeper effect. A 10-day interval was therefore selected to minimize the chance of major changes in weather conditions that could affect judgments.

⁴The two attitudinal items showed very similar patterns of change when analyzed separately and were therefore merged to generate an attitudinal index. They were also highly correlated ($r = 0.59, p < 0.001$).

TABLE 1
EXPERIMENT 1

Dependent measures	Time of measurement	Elaborative encoding condition	(s.d.)	Non-elaborative encoding condition	(s.d.)
a. Mean values of product judgments					
(n =)	Immediate judgment	25		27	
	Delayed judgment	23		21	
Attitude	Immediate judgment	4.80	(1.89)	5.67	(1.91)
	Delayed judgment	5.90	(1.80)	5.12	(2.31)
Belief about computer	Immediate judgment	7.28	(1.88)	7.69	(1.43)
	Delayed judgment	7.31	(1.46)	7.35	(1.41)
Credibility of message communicator	Immediate judgment	3.96	(1.90)	4.46	(1.63)
	Delayed judgment	4.73	(1.65)	4.00	(2.15)
Credibility of discounting cue provider	Immediate judgment	8.00	(1.22)	7.82	(1.64)
	Delayed judgment	7.81	(1.96)	7.85	(1.26)
b. Recall of computer and discounting cue arguments when respondents were asked to recall original verbal message					
Recall of computer arguments	Immediate judgment	1.96		1.43	
	Delayed judgment	1.41		1.04	
Recall of discounting cue arguments	Immediate judgment	.44		.41	
	Delayed judgment	.04		.38	
RAR	Immediate judgment	.76		.55	
	Delayed judgment	.87		.38	

ference between immediate and delayed attitude judgments following non-elaborative encoding (mean index decreased by 0.55, $F(1,92) < 1$). According to the simple effects analysis, the interaction effect reflects an increase in attitude between immediate and delayed measurements in the elaborative encoding condition but no significant change in the attitude in the non-elaborative conditions. A simple effect analysis within the immediate judgments and within the delayed judgments revealed no significant differences between the two encoding conditions ($F(1,92) = 2.49$, n.s. within the immediate judgment comparison and $F(1,92) = 1.61$, n.s. within the delayed judgment comparison).

Covariates of the Sleeper Effect. As outlined earlier, three factors potentially mediate the sleeper effect. They include: (1) changes in the belief that was the target of the discounting appeal, (2) an increase in the credibility of message source, and (3) a derogation in credibility of the discounting cue communicator. The belief about the car's computer was correlated with the attitudinal measure ($r(93) = 0.31$, $p < 0.01$), suggesting that it may mediate the attitudinal judgment. In addition, the measures of the credibility of the two sources (message versus discounting cue) were also tested with respect to their correlation with the attitudinal measure. While the credibility of the message source was significantly correlated with attitude ($r(93) = 0.23$, $p < 0.01$), that of the discounting cue communicator was virtually independent from it ($r(93) = -0.04$, $p > 0.3$).

To further test the covariation process, a two-way analysis of covariance was conducted twice—once with the belief about the car's computer as a covariate, and once with the measure of the credibility of the message source as a covariate. The mean values of the two covariates are shown in section a of Table 1.

Although both covariates seem to follow a pattern in judgments similar to the attitudinal measure, they differ in the extent to which they covary with the sleeper effect. When we controlled for the computer belief, none of the effects obtained in the original analysis was removed. Particularly, the interaction effect remained significant ($F(1,93) = 4.14$, $p < 0.05$). On the other hand, when we controlled for the credibility of the message communicator, both the interaction effect ($F(1,90) = 1.92$, $p > 0.15$) and the sleeper effect measured within the elaborative encoding condition ($F(1,90) = 1.89$, $p > 0.15$) disappeared. It appears, therefore, that in this experiment the sleeper effect was associated with the improvement in the credibility of message communicator that occurred between the immediate and delayed measurements.

Recall. Respondents were asked to recall the original message after completing the questionnaire. Two types of data were of interest. First, the recall of the computer-related claims could serve as a manipulation check for the elaborative encoding manipulation. We expected that extensive elaboration of message information would increase the availability of message information.

Such increased availability should be manifested in better recall of computer information in the elaborative than in the non-elaborative condition.

To test this hypothesis, we scored the recall of the four items that were relevant to the car's computer (i.e., controlled mechanical systems, gas consumption, handling the car's doors, and information center) according to a gist criterion. Section b of Table 1 displays the mean number of recalled items. A two-way ANOVA was performed on these data (with similar design as above). The results indicate that elaborative encoding produced better recall for computer-related information than did non-elaborative encoding ($F(1,92) = 6.52, p < 0.05$). In addition, individuals in the immediate judgment condition had a better recall than those in the delayed measurement condition $F(1,92) = 5.78, p < 0.05$. The interaction effect was not significant ($F(1,92) < 1$).

Second, and perhaps more interesting in terms of assessing the knowledge availability paradigm, was the test of the contention that elaborative encoding increases the availability of message information relative to that of the discounting cue over time. We expected that in delayed judgments, the recall of message information, relative to that of the discounting cue, would be larger in the elaborative than in the non-elaborative encoding condition. In immediate judgments, on the other hand, these differences were not expected to be as pronounced because the discounting cue information is posited to be equally available in both conditions.

To address this hypothesis we constructed an index that directly contrasted the availability of the message and that of the discounting cue. To introduce this measure, let us denote the proportion of recalled computer items (from the message) as R_m and the proportion of intruded recall (that is, the "recall" of discounting cue information when respondents were actually asked to recall message information) as R_d . The measure of the relative availability ratio (RAR) was accordingly defined as:

$$RAR = (R_m - R_d) / (R_m + R_d)$$

The mean values of this measure are shown in section b of Table 1. As expected, a comparison of the measure's values between the two encoding conditions in the immediate judgments was not significant ($F(1,92) = 2.00, p > 0.15$). A similar comparison within the delayed judgments revealed a higher relative recall of message information in elaborative encoding than in non-elaborative encoding ($F(1,92) = 9.7, p < 0.01$). This finding supports the contention that elaborative encoding increases the availability of message information and induces its dissociation from discounting cue information with the passage of time.⁵

⁵The recall indices were based on computer-related claims rather than on recall of all message claims. This was done because the elab-

A FOLLOW-UP EXPERIMENT

Although the difference obtained between the two encoding conditions in "immediate" judgments was not significant, it may be argued that the sleeper effect obtained in the elaborative encoding condition was facilitated because the discounting cue was effective under the elaborative encoding condition but not under the non-elaborative encoding condition. If so, under the non-elaborative encoding condition there may have been no initial suppression that could be decayed over time. Such a possibility precludes our earlier interpretation about the interaction between type of encoding and the time of measurement. The first purpose of the follow-up experiment was to show that there is a significant difference between the non-elaborative group and a group of subjects exposed to the message without elaboration and with no discounting cue (i.e., a "message only" group) within immediate judgment conditions. Such a difference would suggest that the discounting cue was effective in the non-elaborative encoding conditions.

The follow-up experiment had an additional purpose. According to Cook et al. (1979), two theoretical conditions are necessary for the sleeper effect. First, the message and discounting cue must become dissociated before delayed measurement. According to this condition, the sleeper effect had been observed in Experiment 1 in the elaborative encoding groups. Second, delayed judgments in "message only" groups (i.e., a condition in which a discounting cue was omitted) "must show more change than is obtained in the discounting cue group immediately after the message" (Cook et al. 1979, p. 670). The latter condition is necessary because the difference between immediate non-elaborative and delayed "message only" judgments sets the maximum size of the effect that can be obtained. If, for example, delayed judgments of a message-only group were equal to those obtained in immediate judgments of the non-elaborative group, there would have been no potential to show a sleeper effect. Thus, the smaller the decay in the message-only condition over time, the greater the potential for the sleeper effect to be observed. Therefore, the follow-up experiment sought to show that there was a sufficient difference between the immediate non-elaborative condition and the delayed message-only condition, making it possible for a sleeper effect to occur under the non-elaborative conditions. (Note that Experiment 1 suggests that the sleeper effect was not observed under this condition.)

To this end, three additional groups of participants

oration was relevant mainly to the computer (i.e., "Write down your thoughts regarding the ways in which the computer eases the driving task."). As such, a strong test of the effect of elaborative encoding involved computer-related claims. Although elaborative encoding might have also influenced peripheral claims (e.g., convenient payment terms), this effect was assumed to be small.

(drawn from the same population as in Experiment 1) were examined. One group was assigned to the immediate non-elaborative condition of Experiment 1. These participants provided an estimate for the similarity between the original and the follow-up experiment subjects and served as a baseline for the other conditions. The other two groups were assigned to non-elaborative message-only conditions whereby they were exposed to the message but not to a discounting cue. These participants were assigned to immediate and delayed conditions with the same delay interval as in Experiment 1.

The mean obtained for the attitudinal measure in the immediate non-elaborative encoding group ($M = 5.56$) compared well with that obtained for the similar measure in Experiment 1 ($M = 5.67$). Concerning the comparison within the immediate measures, the obtained mean in the message-only condition was higher ($M = 7.23$, $t(48) = 3.05$, $p < 0.01$) than that obtained for the non-elaborative group. This finding seems to rule out a rival explanation according to which the immediate discounting effect obtained in Experiment 1 was only operative under the elaborative encoding condition. Indeed, it shows that under both conditions initial attitudes were sufficiently suppressed to facilitate a potential attitude change over time.

With respect to the comparison pertaining to the second condition as just outlined, the mean of the delayed no-message condition ($M = 6.60$) was higher than that of the immediate non-elaborative condition ($M = 5.56$, $t(36) = 2.36$, $p < 0.03$). This finding suggests that there was a potential for the sleeper effect in the non-elaborative conditions. This effect was significant also when the denominator for estimating the appropriate t value was the standard error for testing the sleeper effect, as suggested by Cook et al.'s (1979) Sleeper Effect Ratio.

DISCUSSION

The sleeper effect was observed when respondents were induced to encode message information in an elaborative manner, but not when encoding was not elaborative. This finding is not easily comparable with previous findings in the sleeper effect domain. Previous studies varied the messages, their conclusions, or the discounting cue (e.g., Gruder et al. 1978) without contrasting different types of encoding. Experiment 1 demonstrated that varying the level of processing and encoding of message information is sufficient to influence the magnitude of the sleeper effect. Results of Experiment 1 also shed light on the factors associated with the sleeper effect. Three factors have been mentioned as candidates in bolstering the effect. They include changing the beliefs about the target claim, increasing the credibility of the message source (i.e., manufacturer), and downgrading the credibility of the discounting cue communicator. Of these three factors, the in-

crease in judged credibility of the manufacturer that occurred over time has been found to be associated with the sleeper effect.

Undermining the Cause of the Sleeper Effect

Experiment 1 postulated that the sleeper effect phenomenon occurs primarily because the discounting cue information is highly available in immediate judgments but gradually becomes unavailable in delayed judgments. Accordingly (and consistent with the traditional measurement approach), the availability of the discounting cue information was postulated to be mediated by time manipulation.

Experiment 2, which is discussed next, manipulated the availability of the discounting cue differently. Under one condition, subjects were induced to elaborate on message information before they received the discounting cue (i.e., the elaborative encoding condition in Experiment 1). Under another condition, subjects were induced to elaborate on message information after they received the discounting cue. We will term the former *pre-discounting elaboration* and the latter, *post-discounting elaboration*. We hypothesized that the effect of the discounting cue on judgments will be stronger when elaboration precedes rather than follows the delivery of the discounting cue. This was expected to occur because under the post-discounting elaborative encoding condition, the favorable information related to the message is likely to immediately supplant the unfavorable information associated with the discounting cue. This was hypothesized to lead to a pronounced discrepancy between the two encoding conditions in immediate judgments. Furthermore, the difference between the two encoding conditions ought to be attenuated over time as the availability of the discounting cue decays only under the pre-discounting condition. Under the post-discounting condition, the availability of the discounting cue information relative to that of message information was not expected to change significantly.

EXPERIMENT 2

Method

Subjects. One hundred and twenty adults participated in Experiment 2. All were residents of the same city as in Experiment 1. None of the respondents in Experiment 1 participated in Experiment 2. Similar to the first experiment, all respondents were approached in their homes. The same precautions against possible word-of-mouth communication taken in Experiment 1 were taken here.

Design and Procedure

The design of Experiment 2 involved crossing the timing of elaborative encoding (pre-discounting vs.

post-discounting) with the time of attitude measurements (immediate vs. delayed measurement).⁶

The procedure of Experiment 2 was similar to that of Experiment 1 with one exception: the product, which was used as a stimulus, involved a vacation trip to an island. Although virtually all respondents indicated that the name of the island sounded familiar, less than one percent of the sampled population had actually gone there for a vacation. Furthermore, less than 20 percent of the respondents could indicate its precise location.

The Ad and Discounting Cue. The ad consisted of a color picture, showing a couple walking along the shore on a sunny day, and a verbal message. The message, attributed to a (fictitious) vacation club, listed eight claims, all of which centered on the stability of the climate that prevails in the islands' region (e.g., "travel to the islands where the summer never ends," "the temperature is steady throughout the day and night," "you can have breakfast, lunch, or dinner on one of the three outdoor restaurants which are placed on the beach").

The discounting cue that immediately followed the message was attributed to a (fictitious) travel agency. It stated that the policy of the travel agency is to maintain high standards and satisfaction among its customers. The travel agency stated that the information provided by the club was inaccurate. Namely, the islands are not sunny year-round according to travelers who complained about the thunderstorms and heavy rain that fell during their vacation.

Dependent Measures. Similar to Experiment 1, the questionnaire was designed to obtain four key measures. First, the attitudinal measure consisted of two items ($r = 0.59, p < 0.001$) pertaining to the expected enjoyment from a vacation in the islands ("To what extent do you think that a vacation in the islands is enjoyable?") and the cash value of such a vacation (i.e., respondents were informed that an eight-day vacation in England cost about \$600 and were subsequently asked to express the worth of an eight-day vacation in the islands according to this referent). Second, a measure of the belief about the islands being sunny throughout the year was assessed ("To what extent do you believe that the sun is shining in the islands throughout the year?" and "To what extent do you believe that there are no rainy days in the islands?"). Finally, two questions were included pertaining to the credibility of each of the two information sources.

⁶In Experiment 2, about half of the respondents in the immediate judgment condition were revisited about 10 days after the first visit. An ANOVA design with repeated measures (i.e., manipulating encoding conditions for immediate and delayed posttests) revealed results that are similar to those obtained and reported in the text. These results are not presented in the text due to space limitations and are available upon request from the authors.

Results

The contrast of interest involved the time of elaboration on the message (pre-discounting vs. post-discounting) \times time of measurement (immediate vs. delayed). Both factors were manipulated between respondents. A two-way between-subjects ANOVA was performed on the attitudinal measure. Means of the dependent measures for the four groups are depicted in section 2 of Figure B and Table 2.

The hypothesis stated earlier is confirmed if two conditions are met. First, the initial attitude level under the pre-discounting elaborative encoding condition should be lower than under the post-discounting condition. Second, attitude change that takes place over time should be more pronounced under the pre-discounting condition than under the post-discounting condition.

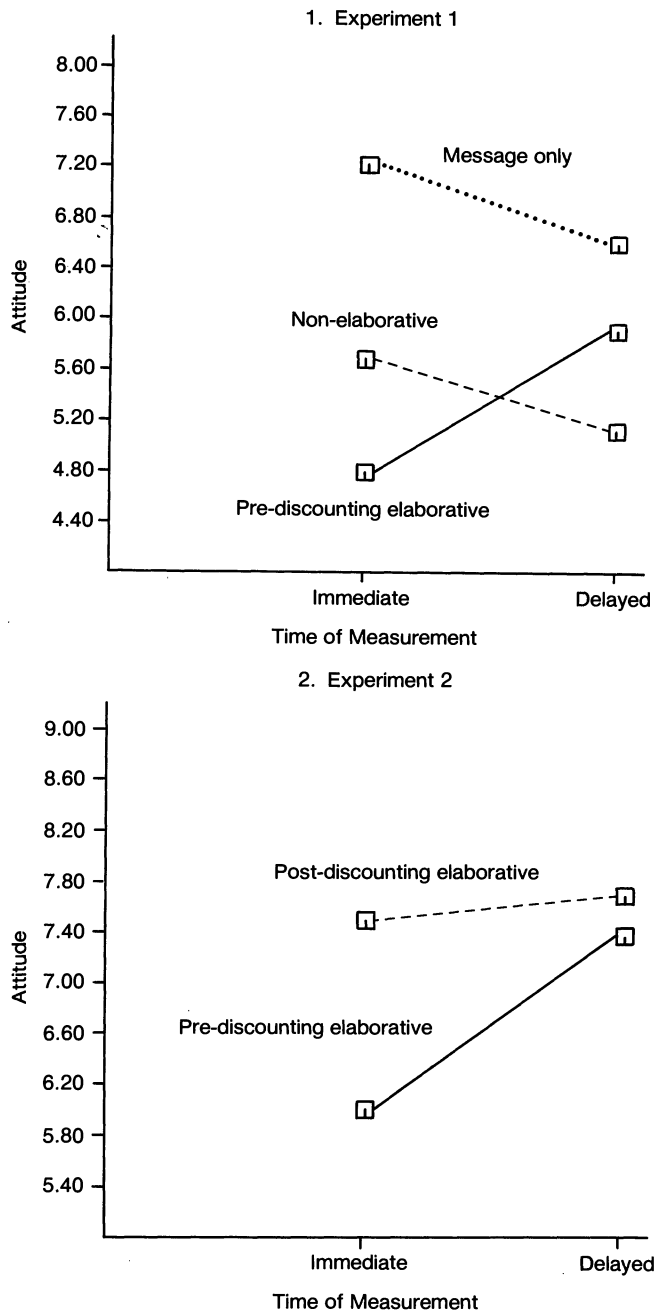
To test the first condition, a simple effects analysis was performed within the immediate judgments. It revealed significant differences between the two encoding conditions ($F(1,116) = 11.6, p < 0.01$). A similar comparison conducted within the delayed posttests showed no differences ($F(1,116) < 1$). Concerning the second condition, the two-way interaction effect tended to be significant ($F(1,116) = 3.59, p < 0.06$). Furthermore, the analysis of the simple effects revealed that the sleeper effect was observed only in the pre-discounting elaborative encoding condition ($F(1,116) = 9.6, p < 0.01$) but not in its post-discounting counterpart ($F(1,116) < 1$).

We subsequently tested the proposition raised in Experiment 1 regarding the covariation of changes in product belief and the credibility of the source with changes in attitudinal judgments. The correlational analysis revealed a pattern of correlations similar to that of Experiment 1 between the attitudinal measure and the three relevant factors (i.e., the belief about the target claim, the credibility of the message source, and the credibility of the discounting cue communicator). Specifically, the attitude measure was significantly correlated with the belief measure and with the credibility of the message source measure ($r(120) = 0.28, p < 0.01$ and $r(120) = 0.21, p < 0.01$ for the two correlations, respectively) but failed to reach significance when correlated with the measure of the discounting cue source credibility ($r(120) = 0.08, p > 0.15$).

The analysis of covariance that we subsequently conducted with the belief measure as a covariate did not remove either the main effect due to time of measurement (i.e., the sleeper effect, $F(1,115) = 4.38, p < 0.05$), or the interaction effect, $F(1,115) = 4.25, p < 0.05$). In addition, controlling for the change in the credibility of the message source hardly weakened the main effect due to the sleeper effect ($F(1,115) = 3.59, p < 0.06$) or the significance of the interaction effect ($F(1,115) = 3.44, p < 0.07$). These results fail to reinforce the

FIGURE B

THE PERSISTENCE OF ATTITUDES: A COMPARISON BETWEEN IMMEDIATE AND DELAYED JUDGMENTS FOR DIFFERENT TYPES OF ENCODING



findings of Experiment 1 in which the credibility of message communicator covaried with effects of discounting cues.

GENERAL DISCUSSION

This study was designed to test the impact of information encoding on temporal changes in product at-

titudes. The sleeper effect, which is manifested by increased message effectiveness over time, was observed in two replications when participants were induced to encode the message elaboratively. Under this condition, consumers were guided to imagine themselves consuming the advertised products while viewing the ads. The sleeper effect was not observed, however, either when consumers were not induced to elaborate on and integrate message information or when the request to imagine themselves using the products was delivered after the discounting cue was conveyed.

According to the paradigm described earlier, the sleeper effect is enhanced if two related conditions are met. First, both message and discounting cue are available in immediate judgments. Second, the message becomes more available relative to the discounting cue in delayed judgments. Under pre-discounting elaborative encoding these conditions are met and the sleeper effect was observed in both Experiments. The sleeper effect was not observed either when there was an initial imbalance in the availability of the message and the discounting cue (Experiment 2), or when the message information was not sufficiently elaborated upon to enable an increase in its availability over time relative to the discounting cue (Experiment 1).

The application of the discounting paradigm in the context of a marketing-oriented context is characterized by the fact that the discounting cue is attributed to an external source (e.g., the FTC) and not to an unknown source (e.g., "a note to the reader" in Gruder et al. 1978). A study of a marketing-related issue entails in most cases an experimental procedure that accommodates the requirement that the discounting cue and the challenged argument be conveyed by two distinct sources. Thus, it may be argued that the simulation of such reality, as operationalized in the present setting, involved the contrast between two conflicting messages that differed only in the order of presentation. Whether or not the studies ought to be interpreted as merely contrasting two conflicting messages or representing a message-discounting cue relationship needs to be analyzed in view of the definition of a discounting cue. According to Gruder et al., discounting "refers to the suppression of (the) initial attitude change, and it occurs when the message conclusion is paired with information that causes subjects not to accept the message conclusion to the extent they would if they received the message alone" (1978, p. 1062).⁷

⁷Note that the definition pertains to respondents' acceptance of message conclusion and not to the focus of the discounting cue's attack. Previous studies differ in the scope of message information being attacked by the discounting cue. For example, Gruder et al. (1978) presented a note following the message that restated and labeled the entire message conclusion as false (see also in Jannoff-Bulman, Timco, and Corli 1985). However, in Schul and Burnstein 1985 and Wyer and Unverzagt 1985, the discounting cue pertained only to a

TABLE 2
MEAN VALUES OF PRODUCT JUDGMENTS: EXPERIMENT 2

Dependent measures	Time of measurement	Pre-discounting encoding condition	(s.d.)	Post-discounting encoding condition	(s.d.)
(n =)	Immediate judgment	31		30	
	Delayed judgment	30		29	
Attitude	Immediate judgment	6.01	(1.78)	7.50	(1.80)
	Delayed judgment	7.37	(1.66)	7.70	(1.52)
Belief about "Sunny all year"	Immediate judgment	4.37	(2.19)	3.81	(1.85)
	Delayed judgment	4.87	(2.60)	4.90	(2.10)
Credibility of message communicator	Immediate judgment	4.58	(2.04)	4.63	(2.25)
	Delayed judgment	5.62	(2.04)	5.46	(2.01)
Credibility of discounting cue provider	Immediate judgment	5.71	(2.13)	4.80	(2.13)
	Delayed judgment	5.62	(1.87)	5.27	(2.00)

Several issues suggest that the current operationalization ought to be interpreted and studied within the discounting paradigm. First, the cue was effective in both cases (in immediate judgments, of course). Second, although the original message was bearing solely on the product, the discounting cue provided a direct reference to the message communicator as well as to the product. In that respect the sphere of the discounting cue's meaning included both product information and information bearing on the credibility of the message provider (e.g., "the information provided by the club was inaccurate," in Experiment 2). In contrast to the dual function of the discounting cue, the original message pertained only to the product.

Third, note that discounting instructions may vary in their strength and explicitness. Let us illustrate this with an example. A jury may be instructed to ignore a previous testimony because it is inadmissible (yet, perhaps true). Alternatively, they may be instructed to discount the testimony because the source is unreliable (thereby discrediting the validity of the testimony; see Hannah and Sternthal 1984 for a low credibility source as a discounting cue). Finally, a discounting cue may be intended to detract from the worth of the testimony (e.g., because the information or the conclusion that is inferred from this information is inaccurate and false; see Gruder et al. 1978). Notwithstanding, in all three cases the original testimony is to be discounted, and all three cases comply with the definition of discounting. In the present study, we utilized the strong version of a discounting appeal, namely, one that detracts from the worth of the persuasive message.

Caution is necessary in producing messages that induce elaborative encoding. As noted by Kisielius and Sternthal (1984), advertisers may gain by adopting the

use of cognitive elaboration as a strategy so long as the elaboration of message information is favorable to the message advocacy. Adopting the use of elaborative encoding as a strategy may not be worthwhile if the advertisement fails to evoke a process of generating associative links among message components and between message components and information stored in memory. It is also likely to lose effectiveness if the information retrieved from memory is not favorable to the object of advocacy.

The existence of the sleeper effect has important implications for marketing decisions. Its detection stresses the need for considering timing of attitude measurement as a relevant factor in predicting purchase and choice decisions. Specifically, predictions of purchase behavior may be obscured because of temporal changes in consumer judgments and not as a result of intervention of external factors. In other words, because spontaneous change in judgments may occur over time, correlations between attitudes and overt behavior may vary solely as a function of the timing of attitude measurement. According to the sleeper effect paradigm, attitudinal judgments that are obtained immediately after the delivery of a discounting cue are likely to yield poor predictions of purchase decisions if product judgments do not persist over time.

In this study, a test of the covariation of the message credibility judgment with that of attitude was significant in Experiment 1 but not in Experiment 2. One explanation that may account for this inconsistency relates to the differences in the source information available at the time the elaboration task was delivered. In Experiment 1 the only source available during the administration of the elaboration task was that of the message communicator and, thus, it might have served as an encoding context for the elaboration and as a covariate of attitude change. In contrast, in Experiment 2, the encoding context included both the message and the discounting cue sources (in one condition) and the

subset of the message. The present operationalization of the discounting cue was similar in this respect to the latter studies.

message communicator information alone (in the second condition), making it less likely that the covariation process would be attributable to a single identifiable source.

Finally, an important issue concerning the test of mediation deserves mention here. The analysis of covariance procedure only suggests the possibility of mediation but it does not completely eliminate alternative causal paths. It seems, therefore, that more research is needed to pursue the mediation of the judgment process so as to improve the understanding of the sleeper effect. Further research also is needed to test the existence of the sleeper effect in the context of multiple exposure to message and discounting cues (see, for example, Johnson and Watkins 1971). Such extension could serve as an improved simulation of real-world phenomena involving the impact of cues that challenge consumers' attitudes. It also may shed light on changes in the relative availability of message and discounting cue information as a function of length of delayed intervals and the number of cue exposures.

[Received September 1985. Revised April 1987.]

REFERENCES

- Anderson, Craig A., Mark R. Lepper, and Lee Ross (1980), "Perseverance of Social Theories: The Role of Explanation in the Persistence of Discredited Information," *The Journal of Personality and Social Psychology*, 39 (6), 1037-1049.
- Anderson, John R. (1981), "Concepts, Propositions and Schemata: What are the Cognitive Units?" in *Nebraska Symposium on Motivation*, ed. J.H. Flowers, Lincoln, NE: University of Nebraska Press, 121-162.
- (1985), *Cognitive Psychology and its Implications*, New York: Freeman.
- Burnstein, Eugene and Yaacov Schul (1983), "The Informational Basis of Social Judgments: Memory for Integrated and Non-integrated Trait Descriptions," *Journal of Experimental Social Psychology*, 19 (1), 49-57.
- Cook, Thomas D. and Brian R. Flay (1978), "The Temporal Persistence of Experimentally Induced Attitude Change: An Evaluative Review," in *Advances in Experimental Social Psychology*, Vol. 11, ed. Leonard Berkowitz, New York: Academic Press.
- , Charles L. Gruder, Karen M. Hennigan, and Brian R. Flay (1979), "History of the Sleeper Effect: Some Logical Pitfalls in Accepting the Null Hypothesis," *Psychological Bulletin*, 86 (4), 662-679.
- Dickson, Peter R. and Paul W. Miniard (1978), "A Further Examination of Two Laboratory Tests of the Extended Fishbein Attitude Model," *Journal of Consumer Research*, 4 (March), 261-266.
- Dyer, Robert F. and Philip G. Kuehl (1978), "The Corrective Advertising Remedy of the FTC: An Experimental Evaluation," *Journal of Marketing*, 38 (1), 48-54.
- Eagly, Alice H., Wendy Wood, and Shelly Chaiken (1978), "Causal Inferences about Communicators and Their Effect on Opinion Change," *Journal of Personality and Social Psychology*, 36 (4), 424-435.
- Falk, D.I. (1970), "The Effects of Attitude Change on Manipulating Antecedents of Kelman's International Process," unpublished Master's thesis, Northwestern University, Chicago, IL 60611.
- Festinger, Leon (1957), *A Theory of Cognitive Dissonance*, Evanston, IL: Row, Peterson.
- Fiske, Susan and Linda Dyer (1985), "Structure and Development of Social Schemata: Evidence from Positive and Negative Transfer Effects," *Journal of Personality and Social Psychology*, 48 (April), 839-852.
- Gillig, Paulette M. and Anthony G. Greenwald (1974), "Is It Time to Lay the Sleeper Effect to Rest?" *Journal of Personality and Social Psychology*, 29 (1), 132-139.
- Goethals, G. R. and R.F. Reckman (1973), "The Perception of Consistency in Attitudes," *Journal of Experimental Social Psychology*, 9, 491-501.
- Gruder, Charles L., Thomas D. Cook, Karen M. Hennigan, Brian R. Flay, Cynthia Alessis and Jerome Halamaj (1978), "Empirical Tests of the Absolute Sleeper Effect Predicted from the Discounting Cue Hypothesis," *Journal of Personality and Social Psychology*, 36 (10), 1061-1074.
- Hannah, Darlene and Brian Sternthal (1984), "Detecting and Explaining the Sleeper Effect," *Journal of Consumer Research*, 11 (September), 632-642.
- Harmon, Robert and Kenneth Coney (1982), "The Persuasive Effects of Source Credibility in Buy and Lease Situations," *Journal of Marketing Research*, 19 (May), 255-260.
- Hayes-Roth, Barbara (1977), "Evolution of Cognitive Structures and Processes," *Psychological Review*, 84 (3), 260-278.
- Hovland, Carl I., Irvine L. Janis, and H.H. Kelley (1953), *Communication and Persuasion*, New Haven, CT: Yale University Press.
- , Arthur A. Lumsdaine, and Fred D. Sheffield (1949), *Experiments in Mass Communication*, Princeton, NJ: Princeton University Press.
- and Walter Weiss (1951), "The Influence of Source Credibility On Communication Effectiveness," *Public Opinion Quarterly*, 15, 635-650.
- Jacoby, Jacob, Margaret C. Nelson, and Wayne Hoyer (1982), "Corrective Advertising and Affirmative Disclosure Statements: Their Potential for Confusing and Misleading the Consumer," *Journal of Marketing*, 46 (Winter), 61-72.
- Jannoff-Bulman Ronnie, Christine Timko, and L.L. Corli (1985), "Cognitive Biases in Blaming the Victim," *Journal of Experimental Social Psychology*, 21 (2), 161-167.
- Johnson, Homer H. and Thomas A. Watkins (1971), "The Effects of Message Repetition on Immediate and Delayed Attitude Change," *Psychonomic Science*, 22 (2), 101-103.
- Kelman, Herbert C. and Carl I. Hovland (1953), "Reinstatement of the Communicator in Delayed Measurement of Opinion Change," *Journal of Abnormal and Social Psychology*, 48 (3), 327-335.
- Kisielius, Jolita and Brian Sternthal (1984), "Detecting and Explaining Vividness Effects in Attitudinal Judgments," *Journal of Marketing Research*, 21 (February), 54-64.

- Kuiper, N.A. and T.B. Rogers (1979), "Encoding of Personal Information: Self—Other Differences," *Journal of Personality and Social Psychology*, 37 (4), 499–514.
- Markus, Hazel (1977), "Self-Schemata and Processing Information About the Self," *Journal of Personality and Social Psychology*, 35 (2), 63–78.
- (1988), "Possible Selves," *American Psychologist*, in press.
- and Keith Sentis (1980), "The Self in Social Information Processing," in *Social Psychological Perspectives on the Self*, ed. J. Suls, Hillsdale, NJ: Erlbaum.
- Mazis, M.B. and J.E. Adkinson (1976), "An Experimental Evaluation of a Proposed Corrective Advertising Remedy," *Journal of Marketing Research*, 13 (May), 178–183.
- Paivio, Allen (1971), *Imagery and Verbal Processes*, New York: Wiley.
- Petty, Richard E., John T. Cacioppo, and David Schumann (1983), "Central and Peripheral Routes to Advertising Effectiveness: The Moderating Role of Involvement," *Journal of Consumer Research*, 10 (September), 135–146.
- Rogers, T. B. (1977), "Self Reference in Memory: Cognitions of Personality Traits," *Journal of Research in Personality*, 11, 295–305.
- N.A. Kuiper, and W.S. Kirker (1977), "Self Reference and the Encoding of Personal Information," *Journal of Personality and Social Psychology*, 35 (9), 677–688.
- Ross, Lee, Mark R. Lepper, Fritz Strack, and Julia Steinmetz (1977), "Social Explanation and Social Expectation: Effects of Real and Hypothetical Explanations on Subjective Likelihood," *Journal of Personality and Social Psychology*, 35 (11), 817–829.
- Ross, Michael and Michael Conway (1986), "Remembering One's Own Past: The Reconstruction of Personal Histories," in *Handbook of Motivation and Cognition*, eds. R. Sorrentino and E.T. Higgins, New York: Guilford Press, 122–144.
- Schul, Yaacov and Eugene Burnstein (1985), "When Discounting Fails: Conditions under which Individuals use Discredited Information in Making a Judgment," *Journal of Personality and Social Psychology*, 49 (4), 894–903.
- and David Mazursky (1985), "The Polarizing Effect of Integrative Encoding on Judgments Following Strong and Weak Discounting Appeals," working paper, The Hebrew University of Jerusalem, Mount Scopus, Jerusalem 91905.
- Sentis, Keith and Eugene Burnstein (1979), "Remembering Schema-Consistent Information: Effects of a Balance Schema on Recognition Memory," *Journal of Personality and Social Psychology*, 37 (12), 2200–2211.
- Sternthal Brian, Ruby Dholakia, and Clark Leavitt (1978), "The Persuasive Effects of Source Credibility: Tests of Cognitive Responses," *Journal of Consumer Research*, 4 (March), 252–260.
- Tversky, Amos and Daniel Kahneman (1973), "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology*, 5 (2), 207–232.
- Weiss, Walter (1953), "A 'Sleeper' Effect in Opinion Change," *Journal of Abnormal and Social Psychology*, 48 (2), 173–180.
- Wilkie, William, Dennis McNeill, and Michael Mazis (1984), "Marketing 'Scarlet Letter': The Theory and Practice of Corrective Advertising," *Journal of Marketing*, 48 (Spring), 11–31.
- Weber, S. J. (1972), "Opinion Change as Function of the Associative Learning of Content and Source Factors," unpublished doctoral dissertation, Northwestern University, Chicago, IL 60611.
- Wyer, Robert S. and William Unverzagt (1985), "Effects of Instructions to Disregard Information on Its Subsequent Recall and Use on Making Judgments," *Journal of Personality and Social Psychology*, 48 (3), 533–549.

ERRATUM

Due to an error by the typesetter, a passage was jumbled in Itamar Simonson et al.'s March 1988 article in *JCR*, "The Relationship Between Prior Brand Knowledge and Information Acquisition Order."

The error occurs on p. 567 immediately under the "Prior Evaluation" subhead. The first two sentences should read: "There has been substantial evidence that pieces of information have greater weight if they are unfavorable (e.g., below average) than if they are favorable (see Kanouse 1984; Wright 1974)." *JCR* regrets the error.