

## Integrating Ad Information: A Text-Processing Perspective

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This article utilizes psycholinguistic models to examine text processing in advertising. In particular, the article theorizes that forming an accurate mental representation of the text content of ads is essential for comprehension and can influence evaluations. Two conditions must be met in order to form a mental representation: referential continuity and coherence. A text possesses referential continuity if each of its parts refers, implicitly or explicitly, to an entity introduced in the previous part. A text is coherent if individuals can readily integrate its parts. Four empirical studies suggest that the repetition of certain verbal and pictorial cues can help provide referential continuity and that an ad's structure, or presentation format, can facilitate coherence but only when referential continuity is established.

Most print ads utilize text to communicate with consumers. Research has begun to examine how the processing of this text is influenced by its structure (e.g., whether it is in narrative format or presented as a list of attributes; Adaval & Wyer, 1998; Escalas, 1998). However, how consumers integrate the information conveyed in the text of one ad or across multiple ads has rarely been explored. Current psycholinguistic theories of text processing can provide insight into this process.

A psycholinguistic paradigm permits us to integrate past research on factors like cue repetition (K. L. Keller, 1987) and text format (Adaval & Wyer, 1998) into a general model of text processing. A psycholinguistic perspective also allows an exploration of the role of different types of verbal (and nonverbal) cues. In this article I argue that both the repetition of certain cues and the text's structure can influence the mental representation of an ad's content, comprehension, and evaluations. To investigate this claim empirically, participants in this research were exposed to several ads for the same product (i. e., ad series). Each ad in the series was separated by unrelated material. I hypothesized that participants would be more likely to integrate information across ads when the ads had a common story line, for example, when one ad stated a problem (the initial ad) and a later ad solved it (the conclusion ad). However, this integration is only likely to occur when the conclusion ad contains a cue that reminds

consumers of the initial ad. The cue could be verbal or nonverbal. For a nonverbal cue to be effective, however, it must be relevant to the ad's content.

### INTEGRATING TWO STREAMS OF LITERATURE

To comprehend a text successfully, individuals must form an accurate mental representation of the situation described in it (Zwaan & Radvansky, 1998). Following research in text processing (Johnson-Laird, 1983), I propose that the formation of an integrated mental representation depends on both coherence and referential continuity. A text is coherent or consistent if individuals can readily integrate the information into a causal, intentional, or temporal structure. It possesses referential continuity if each of its parts (sentences, episodes, etc.) refers, explicitly or implicitly, to an entity that was introduced in the previous part. This article examines factors that may lead to the fulfillment of those two conditions when consumers are processing multiple ads for a brand. For instance, strong relations among several ads (e.g., cause-effect, problem-solution) could increase coherence, and the repetition of certain ad elements could lead to establishing referential continuity when the ads are separated by unrelated material, thus preventing continuity in the strict sense of the term.

Two streams of consumer research have begun to examine coherence relations and cue repetition in isolation. The first stream relates to coherence and has compared ads with a narrative format to those that merely present a list of attributes

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(Adaval & Wyer, 1998; Mattila, 2000). This article considers another format that also facilitates text coherence: a problem–solution format or relation. This type of relation occurs when one ad in a series describes a problem and a later ad explains how the brand solves the problem. To examine the effect of coherence on ad responses, responses to ads that have problem–solution relatedness are compared with responses to ads that do not convey an integrating story.

The second stream of research is relevant to referential continuity. Previous research has examined repetition effects in advertising, generally focusing on the effect of repeated exposures to the ad as a whole (Batra & Ray, 1986). Some studies have investigated the effect of repeating ad elements such as graphic cues across different ads (Nordhielm, 2002), but how consumers use those repeated cues to integrate text information from multiple ads has remained unexplored. This article investigates the effect of repeating both verbal and graphic cues on the referential continuity of ad series. Further, it proposes that referential continuity is the most basic condition for information integration and comprehension and that individuals can only impose coherence relations (e.g., problem–solution) on the text when referential continuity is present.

I begin with a brief theoretical account of text processing. Then, in four studies I examine the role of coherence and referential continuity in ad processing.

## TEXT PROCESSING

Text comprehension requires building an integrated mental representation or mental model of the particular situation described in the text (Johnson-Laird, 1983; Zwaan & Radvansky, 1998). The possibility of constructing an integrated mental model depends on the principles of referential continuity and coherence.

### Cue Repetition, Referential Continuity, and Mental Model Construction

*Referential continuity* refers to the continuity within the text. That is, each sentence in a text “must refer, explicitly or implicitly, to an entity referred to (or introduced) in another sentence, since only this condition makes it possible to represent the sentences in a single integrated model” (Johnson-Laird, 1983, p. 370). In other words, throughout the text there must be an ongoing overlap in the concepts that are being discussed. Referential continuity is fundamental to mental model construction (Johnson-Laird, 1983). It provides a basis for coherence relations to be imposed by the individual. Referential continuity may not only apply to sentences in a single ad or text but also to the ads in a series. Hence, each new ad in a series may have to refer to an entity that was introduced in the previous ad. This would help individuals

maintain the accessibility of the concepts that are needed to interpret it.

Referential continuity can be easily disrupted. One of the most common causes of disruption is the insertion of unrelated material between the original identification of an entity and a subsequent reference to it (Johnson-Laird, 1983). For example, in the stimuli used in this research, a situation is described in the initial ad of a problem–solution series for a digital camera. The ad describes a person who goes on a camping trip to the Rocky Mountains and attempts to film his friends around the campfire in dark conditions. The ad ends with the protagonist being unsure about whether his camera will work because of the low light. After the ad is processed, unrelated material follows (programming, other ads, etc.). At this time, the scenario depicted in the initial ad is relegated (or backgrounded) to long-term memory because it is no longer relevant for the interpretation of the unrelated information.

After the unrelated material, a subsequent ad (the conclusion ad) returns to the camping trip, showing how the featured camera can film in the dark. However, referential continuity has been disrupted. The concepts and propositions in the conclusion ad (the camera, filming in the dark, etc.) no longer overlap with those in the unrelated material that was just processed. Furthermore, the content of the initial ad may not be readily accessible in memory because it was not relevant to interpret the unrelated material. Therefore, readers may not see the connection between the problem and how the camera could solve it. They may not see that the camera described in the two ads is the same. In other words, an integrated mental model of the two ads may not be formed; consequently, comprehension of the story spanning the initial and conclusion ads may be impeded (Johnson-Laird, 1983; Magliano, Zwaan, & Graesser, 1999).

Could backgrounded knowledge be reinstated in working memory to establish continuity? The repetition of verbal cues could potentially activate key elements from the previous material, reactivating the necessary knowledge to build the mental model of the whole text. In the camera example, consider a case in which the conclusion ad repeats a phrase used in the initial ad. When respondents read the conclusion ad, the repeated phrase is used as a cue to access elements in long-term memory. That is, the repeated phrase resonates with representations in memory that contain the same phrase or a similar one (Albrecht & Myers, 1995, 1998; Myers & O’Brien, 1998; Wyer, 2004). This resonance is an automatic process in which the concepts being currently processed serve as signals to activate concepts previously processed and relegated to long-term memory (Albrecht & Myers, 1995; McKoon, Gerrig, & Greene, 1996; Ratcliff, 1978). When a concept in memory resonates strongly, its likelihood of being activated increases. The amount of resonance increases with the similarity of the meaning of a concept in long-term memory to the meaning of the concepts in the text that is currently being read (Myers & O’Brien, 1998).

Therefore, if the conclusion ad repeats a phrase previously presented in the initial ad (e.g., “don’t miss any details”), there should be complete meaning overlap between the two phrases. Consequently, the meaning of the initial ad’s phrase should be reactivated. Then, the meaning of that phrase will activate other concepts in long-term memory related to it. In our example, the initial ad implied that people would not miss any details if they had a camera when they went camping in the Rockies. Therefore, the description of camping in the Rockies would be activated by the meaning of the sentence “don’t miss any details.” Camping in the Rockies would in turn activate the low-light campfire setting and the problem of filming under low light. Thus, although referential continuity is disrupted by the unrelated material inserted between the two ads, readers should activate the information necessary to reestablish it, thereby forming a single mental representation of the problem and its solution.

Hence, information from a previous ad could be reactivated by a cue that is not directly related to it, helping individuals establish referential continuity. In other words, the cue does not need to be an integral part of the problem or its solution. Recent research in psycholinguistics suggests that this may indeed be the case (Albrecht & Myers, 1998; Cook, Halleran, & O’Brien, 1998; Lea, Mason, Albrecht, Birch, & Myers, 1998). For example, in a text used by Albrecht and Myers (1998), the protagonist of an episode was sitting on a leather chair while making an airline reservation. In a subsequent episode, the repetition of the phrase “leather chair” was able to reactivate the protagonist’s goal (making the airline reservation) in working memory. Thus, the repetition of peripheral information was able to reinstate the story’s unsatisfied goal.

The studies described in this article examine whether cues that are only tangentially related in meaning to an event (but provide conceptual overlap through the resonance process as just described) can reactivate that event. If the cues can serve this purpose, they should provide referential continuity to an ad series.

### Coherence Relations, Coherence, and Mental Model Construction

*Coherence* refers to the plausibility of the situation described in the text, as inferred from the temporal, spatial, and causal relations among its elements (Sanders & Noordman, 2000). There are a variety of coherence relations, each providing different degrees of coherence among the events represented in a mental model. For example, a model could be based on relations of causation, problem–solution, intentionality, or a mere list-additive relation. The causal relation might specify that one event in the model (e.g., staining a shirt) causes another (e.g., washing clothes). Similarly, a problem–solution relation would relate a problem to its solution, and an

intentionality relation would be based on the assignment of an event to the goals and plans of a protagonist (Schank & Abelson, 1977). List-additive and temporal relations are loose relations among events (J. M. Mandler, 1984). Coherence relations are exemplified by scripts or schemas that link certain elements of the text and are used to interpret it.

The type of coherence relation used in a text influences its degree of coherence and, consequently, its comprehensibility and memorability. Causal and intentionality/goal-related relations seem to be crucial for successful text comprehension. Some theorists (e.g., Graesser, Singer, & Trabasso, 1994) assert that readers search for meaning in the text, attempting to establish global causal coherence. Research suggests that causal relations enhance the coherence of a text and thus help build a mental model (Black & Bern, 1981; Trabasso, Suh, & Payton, 1994; Trabasso & van den Broek, 1985).

Intentionality relations also result in higher coherence. For example, a target action is remembered better if a later behavior establishes a purpose for performing it that was otherwise unclear (Brewer & Dupree, 1983). The studies described in this article investigate a similar integration between a goal or problem and its fulfillment. In these studies, however, the goal specification was provided before the solution and the way in which peripheral information can reactivate the goal was investigated.

Problem–solution relations seem to operate in a manner similar to that of causal and intentionality relations. In the camera example, the resonance process eventually reactivates the mental representation of the initial ad, including the unanswered problem. This prompts the imposition of a problem–solution schema and the integration of the information in the conclusion ad with that in the initial ad (Albrecht & Myers, 1995; Wyer, 2004). That is, when the information in the conclusion ad is recognized as thematically related to information in the initial ad in a manner implied by this schema, elements of the schema are instantiated according to this information. This assumes, however, that the referential continuity of the two ads is restored. If this is not the case, the problem–solution schema would not be imposed, so a single integrated representation of the two ads would not be formed.

Problem–solution texts lead to faster processing and greater recall than list-additive relations (Sanders & Noordman, 2000). Thus, a problem–solution relation can be considered a highly coherent structure that individuals use to interpret the text. The successful instantiation of a problem–solution schema could also result in a positive attitude toward the stimulus by disambiguating a problematic situation (G. Mandler, 1982; Peracchio & Meyers-Levy, 1994). However, this should only occur if individuals establish referential continuity between the two related events. Therefore, if cue repetition establishes referential continuity, it should result in more positive attitudes than if the cue is not repeated.

## Referential Continuity and Coherence in Problem–Solution Ad Series

Many examples of problem–solution structures can be found in television (TV) advertising (e.g., the Excedrin® campaign that used different ads within a commercial break to illustrate how quickly headaches disappeared and the Taster’s Choice® coffee ads that were essentially episodes in a soap opera). However, the format is also frequently used in print, presenting the initial ad on one page and the conclusion ad on a different page, usually one or two pages after. Consider the following problem–solution print ad series for Homedics® electric toothbrushes. The series consists of two separate ads on different pages of a magazine: the initial ad, which describes a question but does not provide its solution, and the conclusion ad, which provides the solution to the question.

Initial ad: What’s holding back your smile?

Conclusion ad: Turn on your smile. To turn on a cleaner, healthier smile, use the only brush with SmartSensor™. Get the brush that helps you protect your smile as you clean.

When such problem–solution ads are separated, consumers may relegate the information in the initial ad to long-term memory because it is not relevant to the intervening content or ads. In this case, a problem–solution coherence relation may not be reinvoked when the conclusion ad is read. But if consumers can reactivate the problem statement when they read the conclusion, they should be able to reinstate referential continuity and establish high coherence.

### STUDY 1

Study 1 determined whether referential continuity can be restored by the repetition of verbal cues. According to the resonance conceptualization of memory described earlier, the resonance produced by a cue in an ad segment should reactivate the key elements of previous segments that are necessary for successful comprehension of the ad series as a whole. This process might be evidenced by memory for the initial ad. Presentation of a cue should not only activate the statement of the problem directly relevant to the conclusion ad, but it should also reactivate the rest of the information presented in the initial ad, even if the ad claims are not directly related to the repeated cue. This would be a sign that individuals have retrieved the necessary information to establish referential continuity.

H1: Problem–solution ad series will lead to higher recall of the initial ad when the conclusion ad repeats a verbal cue originally presented in the initial ad than when the cue is not repeated.

Failure to establish referential continuity may lead to relatively low ad evaluations. Consumers may develop more negative attitudes if the problem stated in the initial ad is left without apparent resolution than if they can utilize later information to solve the problem. This expectation is consistent with evidence that ads in which claim substantiation is impaired by an unresolved ambiguity elicit more negative affect than ads in which the claims can be substantiated (Meyers-Levy & Tybout, 1989; Peracchio & Meyers-Levy, 1994). Therefore, even when the solution is provided in the conclusion ad, if referential continuity is not reinstated by cue repetition, consumers will not be able to connect the solution to the problem statement (i.e., they will not be able to construct an integrated mental model of the whole text).

H2: Problem–solution ad series will lead to more favorable attitudes toward the ads when the conclusion ad repeats a verbal cue originally presented in the initial ad than when the cue is not repeated.

### Method

The study used problem–solution series for two different products consisting of two ads each: an initial ad and a conclusion ad. The design was a 2 (cue repetition: repetition or no repetition) × 2 (product: camera or internet service provider [ISP]) mixed design, where Cue Repetition was a between-subjects factors and Product replication was manipulated within subjects.

Fifty-six undergraduate students participated in the study. All the stimuli and measures were presented and collected on personal computers. Adapting a procedure previously used by Haugtvedt, Schumann, Schneier, and Warren (1994), respondents were told that they would be evaluating a new TV cartoon show and several ads that would appear during the show. They were told that the samples of the show were in comic strip form because the show was still under production. The instructions did not mention that there would be several ads for the same product or that respondents’ memory would be tested. Respondents were exposed to a block of cartoons, then to a block of ads (two target initial ads and two fillers), then to another block of cartoons, and finally to a second block of ads (two target conclusion ads and two fillers). All cartoons and ads were presented one at a time. The order of ads within each block was randomized. Respondents were instructed to read the materials carefully and press the Enter key after they had finished reading each cartoon or ad. Each ad was preceded by a screen that told respondents that a new ad was forthcoming, to press the Enter key to see the ad, and to read it carefully.

Both ad series consisted of two ads, the initial ad and the conclusion ad. Two series were used to provide a replication across different categories and were chosen because of their relevance to respondents. All ads consisted exclusively of

TABLE 1  
Example of Stimuli Used in Study 1 (Cue Repetition Condition)

Ad	Camera Ad Series	ISP Ad Series
Initial ad	This digital camcorder is so light that you can take it with you next time you go camping in the Rockies. Film your friends around the campfire. Don't miss any details. But, under such low light conditions, will the camcorder work?	Imagine having 24-hour, 7-day a week customer service from your internet provider. Imagine also never getting a busy signal when you want to go online. We guarantee that you'll never be without internet service. But what can you do if your roommate is waiting for an important call and you have to download the notes for today's class?
Conclusion ad	Don't miss any details. Try our DARC lighting system, which will allow you to record even in conditions of total darkness, thanks to our infrared light technology. Record digitally and save yourself the hassle of videotapes.	Never run into a busy signal! You can use your phone and the web at the same time without a second phone line. Always-on connection, without interruptions. Call 1-800-DSL-INOW for our rates and services.

textual information. Several filler ads were produced and were randomly presented, mixed with the target ads.

The text of the ads under cue repetition conditions for each stimulus replication is shown in Table 1. In the camera series, the initial ad consisted of providing a scenario in which the camera was being used to film friends around a campfire. The ad ended with a sentence stating a problem ("But, under such low light conditions, will the camcorder work?"). The conclusion ad explained, among other things, that the video camera had infrared light technology that enabled it to film in complete darkness. This ad could be interpreted as providing either the solution to the problem in the initial ad or just listing another set of product attributes or benefits.

The cuing manipulation was performed by adding either "Don't miss any details" or "The best all around" in the initial ad and then, under cue repetition conditions, repeating this phrase at the beginning of the conclusion ad. Under no-repetition conditions, an alternative phrase opened the conclusion ad. This was done using counterbalancing so that each of the two phrases appeared equally often as cues in both cue repetition and no-repetition conditions. Other than the repeated cue, the conclusion ad included no explicit reference to the initial ad.

The ISP series followed a similar format. It used a cue embedded into a sentence in the ad's claims, either "a busy signal" or "any problems." The problem to be solved in the ISP series related to a situation in which the protagonist wanted to download documents at home from the internet when her roommate was expecting an important phone call, thus creating an unresolved conflict or problem. The conclusion ad could be interpreted as solving the problem, claiming that, with the Digital Subscriber Line (DSL) service offered by the ISP, one could be on the web and on the phone at the same time. In the conclusion ad, the cue phrase was also part of a sentence presented in the beginning of the ad.

After exposure to all the materials, respondents were asked to rate each of the campaigns they had seen during the study as whole campaigns, not as individual ads. They were prompted by the product category of each series. Six 7-point

(ranging from 1 to 7) semantic differential scales measured evaluations of each series. The scales were anchored as follows: *dislike very much* and *like very much*, *very bad* and *very good*, *very negative* and *very positive*, *very uninteresting* and *very interesting*, *very unpleasant* and *very pleasant*, and *very poor quality* and *excellent quality*. Higher scores represented more positive evaluations. Next, respondents provided their demographics and completed a 10-min unrelated scale to clear their short-term memory. Then, they were asked to recall everything they could remember from each of the ads in the target series. Respondents' recall scores were developed by adding the number of correct statements they listed from the initial ads' claims. Finally, respondents were debriefed and dismissed.

## Results and Discussion

The data were analyzed as a 2 (cue repetition: repetition or no repetition)  $\times$  2 (product: camera or ISP) mixed design, where Cue Repetition was a between-subjects factors and Product replication was manipulated within subjects. Both cue phrases (e.g., "don't miss any details" and "the best all around") had a similar impact on the results ( $F_s < 1$ ), so that variable was removed from the analysis. The recall protocols were coded reliably by two judges blind to the hypotheses ( $r = .86$ ). Product replication did not interact with the independent variables ( $p_s > .10$ ).

Supporting H1, there was a main effect of cue repetition on recall of the initial ad's message claims (not including the cue or any part of the problem statement). Cue repetition resulted in higher initial ad recall than no repetition,  $F(1, 54) = 14.20, p < .001$ , for the camera ( $M = 2.39$  vs.  $M = 1.33$ ) and for the ISP ( $M = 1.33$  vs.  $M = .57$ ). In the camera series, 59% of respondents recalled the problem statement from the initial ad in the cue repetition condition, whereas only 32% of the respondents in the no-repetition condition did so,  $\chi^2(1) = 3.83, p < .05$ . In the ISP series, 61% recalled the problem statement in the repetition condition versus 35% in the no-repetition condition,  $\chi^2(1) = 3.69, p < .10$ .

In support of H2, cue repetition resulted in more favorable attitudes toward the ads than no cue repetition,  $F(1, 54) = 10.69, p < .01$ , for both the camera ( $M = 4.74$  vs.  $M = 3.85$ ) and the ISP ( $M = 4.77$  vs.  $M = 4.21$ ).

The results suggest that the repetition of a phrase from the initial ad in a problem–solution series facilitates the reactivation of previously backgrounded information. This process is manifested in greater accessibility or recall of the initial ad claims, including the problem statement, in the cue repetition condition. Reactivation of the initial ad's information seems to help establish referential continuity between the initial and the conclusion ads. Consequently, respondents can make the connection between the two ads, and the conclusion ad serves to bring closure to the situation. When the cue is not present in the conclusion ad, respondents are prevented from reactivating the problem statement and evaluations are lower.

## STUDY 2

To explore further whether respondents in the cue repetition condition construct a mental model of the problem–solution relation and how this may lead to positive evaluations, Study 2 included explicit measures of whether respondents acknowledge and are able to reproduce the story lines of the ad series. If they do, we could conclude that they were able to form an integrated mental model.

H3: Problem–solution ad series will lead to a greater ability to reproduce the main events in the series' stories when the conclusion ad repeats a verbal cue that was contained in the initial ad than when the cue is not repeated.

In addition, Study 2 compared problem–solution series to variation series in which the ads for a given brand described different brand benefits without a common story line (Haugtvedt et al., 1994). Consumers who receive a variation series of ads are confronted with a loose coherence relation similar to an additive list. In contrast, consumers who are exposed to a problem–solution series are able to invoke a script that leads to the disambiguation of a problem and, perhaps, to positive affect, provided they can establish referential continuity. Therefore, if the degree of coherence influences ad processing, problem–solution series should be evaluated more favorably than variation series. However, this should only happen when a cue from the initial ad is repeated, reactivating the distant problem statement and establishing referential continuity.

H4: Problem–solution ad series will lead to more favorable attitudes toward the ad than variation series when the conclusion ad repeats a verbal cue that was contained in the initial ad but not when the verbal cue is not repeated.

To confirm that cue repetition reactivates backgrounded knowledge, all of the conclusion ads in this study repeated a cue. In the initial cue condition, the conclusion ad repeated a phrase from the initial ad, thus cuing the initial ad as in Study 1. In the middle cue condition, the conclusion ad repeated a phrase from the middle ad, thus cuing the middle ad. I expected that in the middle cue condition, information from the middle ad would be reactivated, leading to greater accessibility of the middle ad claims than in the initial cue condition. This should be true regardless of whether it was a problem–solution or a variation series. If this is the case, it would show that coherence and referential continuity can occur independently (i.e., that they are two separate constructs).

## Method

The design was a 2 (cue repetition: initial cue or middle cue)  $\times$  2 (series type: problem–solution or variation)  $\times$  2 (product: camera or ISP) mixed design, where Cue Repetition and Series Type were between-subjects factors and product replication was manipulated within subjects. The initial cue condition was equivalent to the cue repetition condition in Study 1.

Eighty-one undergraduate students participated in the study. Similar to Study 1, respondents were exposed to two target ad series and different filler ads. The target ad series were the same as in Study 1, except that an additional block of ads (the middle ads) and an additional block of cartoons were shown between the initial ads and the conclusion ads. Therefore, each of the target series consisted of three ads: the initial ad, a middle ad, and a conclusion ad. Respondents were exposed to a block of initial ads, then to a block of middle ads, and finally to a block of conclusion ads. Each block of ads was preceded by a block of cartoons.

The ad series presented under initial cue conditions are shown in Table 2. The middle ad in each series described several attributes and benefits (e.g., ability to record movies in MPEG format) that were unrelated to the initial and conclusion ads. The conclusion ads repeated either a phrase from the initial ad (initial cue condition) or a phrase from the middle ad (middle cue condition). For example, consider a case in which the phrase designated as a cue was "Don't miss any details." In the initial cue condition, when the initial ad was cued, both the initial and the conclusion ads would include that phrase. The middle ad would contain "The best all around." In the middle cue condition, when the middle ad was cued, the middle ad and the conclusion ad would contain "Don't miss any details," and the initial ad would contain "The best all around."

To transform the problem–solution series into a variation series, the problem statement in the initial ads was replaced with a different sentence that did not introduce a problem to be solved. In the camera ad, this sentence was "Your camcorder will help you keep this magic moment forever." The replacement sentences were designed to be similar in length to the original problem statement sentences. The materials

TABLE 2  
Example of Stimuli Used in Study 2 (Initial Cue Condition)

Ad	Camera Ad Series	ISP Ad Series
Initial ad	This digital camcorder is so light that you can take it with you next time you go camping in the Rockies. Film your friends around the campfire. Don't miss any details.  <i>Problem solution series:</i> But, under such low light conditions, will the camcorder work?  <i>Variation series:</i> Your camcorder will help you keep this magic moment for ever.	Imagine having 24-hour, 7-day a week customer service from your internet provider. Imagine also never getting a busy signal when you want to go online. We guarantee that you'll never be without internet service.  <i>Problem solution series:</i> But what can you do if your roommate is waiting for an important call and you have to download the notes for today's class?  <i>Variation series:</i> You can download the notes for today's class right in your apartment. You don't need to go early to the university to print them.
Middle ad	The best all around. This digital camcorder allows you to connect directly to your computer through a Firewire connection. Download and edit your movies digitally. The camcorder even allows you to record movies in MPEG format, for easy sharing and e-mailing.	Surf the web up to 20 times faster without any problems! Our DSL internet service provides you with excellent speeds, so you never have to wait for hours to download that picture from the web, or to get that song you heard on the radio.
Conclusion ad	Don't miss any details. Try our DARC lighting system, which will allow you to record even in conditions of total darkness, thanks to our infrared light technology. Record digitally and save yourself the hassle of videotapes.	Never run into a busy signal! You can use your phone and the web at the same time without a second phone line. Always-on connection, without interruptions. Call 1-800-DSL-INOW for our rates and services.

TABLE 3  
Cue Conditions for Study 2

Ad	Camera Series		ISP Series	
	Initial Cue Condition	Middle Cue Condition	Initial Cue Condition	Middle Cue Condition
Initial ad	Don't miss any details.	Don't miss any details.	A busy signal.	A busy signal.
Middle ad	The best all around.	The best all around.	Any problems.	Any problems.
Conclusion ad	Don't miss any details.	The best all around.	A busy signal.	Any problems.

*Note.* In this example, "don't miss any details" was used as a cue for the camera series, and "a busy signal" was used as a cue for the ISP series. However, for half the subjects, "the best all around" was used as a cue for the camera series, and "any problems" was used as a cue for the ISP series.

presented under middle cue conditions were identical to those in initial cue conditions except for the phrases that were provided as cues. Table 3 presents the two cue conditions for the camera and ISP series, when "don't miss any details" and "a busy signal," respectively, were designated as cues.

The measures were the same as in Study 1. Whether respondents successfully constructed a mental model was assessed after all other measures had been collected, at the end of the experimental session. Respondents were informed that some of the ad campaigns they had seen might have had a story line spanning several ads. Then, they were cued with the product category of each of the ad series and asked whether the series had a story line. If they thought the series had a story line, they were asked to explain what the story was about. Respondents' accounts were coded according to how many of the stories' events they had integrated into their models. Both stories had three central events (e.g., the camera story consisted of going camping, wanting to film in low light, and being able to do so with the camera), so scores ranged from 0 to 3.

### Pretesting

Both series' problem statements and replacement sentences were pretested to ensure that they were similarly likeable and memorable ( $ps > .20$ ). They were also pretested to ensure that they were similarly relevant and important for their respective categories ( $Fs < 1$ ). Another pretest was conducted to ensure that both the initial ad and the middle ad were relevant and important for the camera and the ISP. The ads indeed scored similarly on those dimensions for both series ( $ps > .10$ ).

Finally, a pretest was conducted to check whether, as expected, problem-solution series result in more coherent mental models than variation series. Pretest respondents were presented with the initial and conclusion ads on one sheet of paper. They were exposed to only one of the ad series (camera or ISP) in only one condition (problem-solution or variation). No cues were repeated in this pretest. Then, respondents rated items on three 7-point scales, indicating (a) to what extent they thought the two ads in the series together described a coherent situation (coherence measure), (b) to what

extent the second ad provided a solution to the situation in the first ad, and (c) to what extent the second ad was the conclusion of the first ad (items b and c were averaged to form a situation completeness measure). Problem–solution versions of the series led to higher perceived coherence than the variation versions, and this was true for both the camera ( $M = 5.50$  vs.  $M = 4.37$ )  $F(1, 31) = 4.48, p < .05$ , and the ISP ( $M = 5.77$  vs.  $M = 4.73$ ),  $F(1, 27) = 4.11, p < .05$ . Similarly, problem–solution series led to higher perceived situation completeness for both the camera ( $M = 5.25$  vs.  $M = 3.84$ ),  $F(1, 31) = 5.17, p < .05$ , and the ISP ( $M = 6.00$  vs.  $M = 4.40$ ),  $F(1, 27) = 9.74, p < .01$ . Therefore, problem–solution series lead to greater coherence and ability to integrate the information in the texts into a mental model than variation series.

**Results and Discussion**

The data were analyzed as a 2 (cue repetition: initial cue repetition or middle cue repetition)  $\times$  2 (series type: problem–solution or variation)  $\times$  2 (product: camera or ISP) mixed design, where Cue Repetition and Series Type were between-subjects factors and Product replication was manipulated within subjects. As in Study 1, cue phrase (“don’t miss any details” vs. “the best all around”) had no impact on the results,  $F_s < 1$ , so that variable was removed from the analysis. Recall protocols were coded reliably by two judges blind to the hypotheses ( $r = .89$ ). Table 4 includes the means for all measures. The product replication factor did not interact with the independent variables ( $p_s > .10$ ).

*Initial ad recall.* An interaction was found between Series Type and Cue Repetition,  $F(1, 77) = 6.17, p < .01$ . Sup-

porting H1, in the problem–solution series, there was higher recall when the initial ad was cued than when the middle ad was cued,  $F(1, 77) = 6.06, p < .05$ . In the variation series, the cue manipulation did not have a significant effect,  $F < 1$ .

*Middle ad recall.* A main effect was expected such that cuing the middle ad should lead to higher recall than cuing the initial ad in both the problem–solution and variation series. The results confirm that expectation,  $F(1, 77) = 5.49, p < .05$ . No other effects were significant for this measure,  $F_s < 1$ .

*Mental model construction.* Respondents in the problem–solution condition were expected to form a mental model more readily when the initial ad was cued than when the middle ad was cued, as reflected in both their identification of a story line and their recall of story-related features (H3). Direct comparisons of problem solving and variation series are problematic because the latter series lacked one of the story elements (specifically, the problem statement). As shown in the third section of Table 4, however, respondents who were exposed to the problem–solution series were more likely to indicate that the ads in the series were based on a common story line in the initial cue condition than in the middle cue condition, and this was true for both the camera replication (67% vs. 33%),  $\chi^2(1) = 4.58, p < .05$ , and the ISP replication (67% vs. 26%),  $\chi^2(1) = 6.75, p < .01$ . Furthermore, participants recalled more story events in the former condition than the latter, as shown in the fourth section of the table,  $F(1, 36) = 23.89, p < .001$ . In the variation condition, however, cuing had no effect on either the likelihood of identifying a story line,  $\chi^2_s < 1$ , or the number of story events recalled,  $F < 1$ . Overall, these results support H3.

TABLE 4  
Measure Means as a Function of Cuing and Series Type for Study 2

Measure and Cue Condition	Camera Replication		ISP Replication		Overall	
	Problem-Solution	Variation	Problem-Solution	Variation	Problem-Solution	Variation
Initial ad recall						
Initial cue condition	1.21	1.05	0.71	0.05	0.96 <sub>a</sub>	0.55 <sub>b</sub>
Middle cue condition	0.83	1.05	0.00	0.41	0.42 <sub>b</sub>	0.73 <sub>a,b</sub>
Middle ad recall						
Initial cue condition	0.06	0.42	0.78	0.32	0.42 <sub>a,c</sub>	0.37 <sub>a</sub>
Middle cue condition	1.00	0.71	0.88	0.59	0.94 <sub>b</sub>	0.65 <sub>b,c</sub>
Percent detecting story						
Initial cue condition	67% <sub>a</sub>	33% <sub>b</sub>	67% <sub>a</sub>	17% <sub>b</sub>		
Middle cue condition	33% <sub>b</sub>	27% <sub>b</sub>	26% <sub>b</sub>	17% <sub>b</sub>		
Story events recalled						
Initial cue condition	1.60	0.38	1.07	0.05	1.34 <sub>a</sub>	0.22 <sub>c</sub>
Middle cue condition	0.44	0.33	0.06	0.00	0.25 <sub>b</sub>	0.17 <sub>b,c</sub>
Attitude toward ads						
Initial cue condition	5.35	4.30	5.22	4.56	5.29 <sub>a</sub>	4.43 <sub>b</sub>
Middle cue condition	4.39	4.99	4.61	5.28	4.50 <sub>b</sub>	5.14 <sub>a</sub>

Note. For each measure, overall cell means with unlike subscripts are significantly different at  $p < .05$ . Comparisons of the percentage of subjects detecting story are made within each replication separately.

**Attitudes.** An analysis of ad evaluations confirms H4, which posited that problem–solution ads should elicit more favorable evaluations than variation ads when the initial ad was cued but not when the middle ad was cued. The interaction of Series Type and Cue Repetition was significant,  $F(1, 77) = 13.56, p < .001$ . Data relevant to this interaction, shown in the last section of Table 4, indicate that in the initial cue condition, the problem–solution series led to more favorable evaluations than the variation series,  $F(1, 77) = 8.63, p < .01$ . In the middle cue condition, the opposite was true,  $F(1, 77) = 5.11, p < .05$ .

These data also confirm the assumption that the cue repetition effect found in Study 1 also holds for more distant ads. That is, in the problem–solution series, cuing the initial ad led to more positive evaluations than cuing the middle ad,  $F(1, 77) = 7.25, p < .01$ . However, in the variation series, cuing the initial ad led to less favorable evaluations than cuing the middle ad,  $F(1, 77) = 6.32, p < .05$ . This pattern of results in the variation condition was not predicted. These interesting findings for the variation series could be candidates for future investigations.

**Mediation analysis.** To provide an indication of the mediating role of mental model formation on evaluations, evaluations of the problem–solution series were reanalyzed using the number of story events recalled as a covariate. When this was done, cue repetition ceased to have a significant effect on slogan evaluations for the camera:  $F(1, 35) = 1.89, p > .18$ , and for the ISP:  $F(1, 35) = 1.47, p > .24$ . Thus, the proportion of variance accounted for by cue repetition ( $\omega^2$ ) was reduced from .07 to .02 in the camera replication and from .15 to .01 in the ISP replication. This indicates that mental model formation did in fact mediate the influence of cue repetition on evaluations of problem–solution ads.

Study 2 confirms the hypothesis that repeating a subtle verbal cue that was originally presented in the initial ad of a problem–solution ad series can help establish referential continuity to the series, as evidenced by the higher recall of the initial ad. When referential continuity is established, respondents are able to form a highly coherent mental representation of the situation depicted in the series, evidenced in their ability to retell the main events of the story in the problem–solution, initial cue condition. Their construction of a coherent model is further suggested by the higher evaluation of problem–solution ads when the initial ad was cued. A third study eliminated an alternative interpretation of these findings.

### STUDY 3

In both Studies 1 and 2, the problem–solution series consisted of an initial ad asking a question that was left unanswered. This may have been perceived by respondents as a rhetorical question, which could have led to higher elaboration

of the message (Petty, Cacioppo, & Heesacker, 1981). In turn, this additional elaboration may have enhanced the efficacy of cue repetition by lowering the activation threshold of the problem statement. This possibility could be discounted if the facilitating effect of cue repetition is found for declarative and question problem–solution series alike. Therefore, Study 3 included similar stimuli to Study 2 but did not include an explicit question at the end of the initial ads. These declarative problem–solution series were compared to the question series used in Study 2.

Study 3 also investigated whether the cuing effects in Study 2 were due to memory facilitation or inhibition. For instance, the relatively better memory for problem–solution ads when the initial ad was cued than when the middle ad was cued could have been due to the inhibitory effects of cuing the middle ad rather than to the facilitative effects of cuing the initial ad. To evaluate this possibility, Study 3 compared ad series in which a feature of the initial ad was repeated to series in which no features were repeated.

### Method

The design was a 2 (cue repetition: initial cue repetition or no cue repetition)  $\times$  2 (problem format: question or declarative)  $\times$  2 (product: camera or ISP) mixed design, where Cue Repetition and Problem format were between-subjects factors and Product replication was manipulated within subjects. Seventy-five undergraduate students participated in this study. The procedure and materials were the same as in the problem–solution series in Study 2. The wording of the initial ads was modified to express the problem in a declarative statement while maintaining comprehensibility within the ads. Thus, the problem statement in the camera ad was “But under such low light conditions, your old camcorder probably won’t work. You need to know what to do.” In the ISP ad, the problem statement was “But if your roommate is waiting for an important call, you may not be able to dial up to download the notes for today’s class...”

In the no-repetition condition, the initial and conclusion ads were the same as in Study 2’s middle cue condition, but the middle ads did not include a phrase from the conclusion ad (e.g., “the best all around”). In addition to ad evaluations, product evaluations were also obtained using six 7-point scales, where higher scores meant more positive evaluations (endpoints were the same as for the ad evaluation scales).

### Results and Discussion

Cue phrase had no impact on the results. The Product replication factor did not interact with the independent variables ( $ps > .10$ ). The effect of cue repetition on initial ad recall and on the number of story events recalled did not significantly depend on problem format, interaction  $F_s < 1$ , indicating that both the question and declarative series followed the same pattern. As in Study 2, cue repetition led to higher initial ad

recall than no repetition,  $F(1, 71) = 6.71, p < .01$ , for both the camera ( $M = .86$  vs.  $M = .52$ ) and the ISP ( $M = .57$  vs.  $M = .12$ ), and to a greater number of events recalled,  $F(1, 77) = 13.33, p < .001$ , for both the camera ( $M = 1.31$  vs.  $M = .47$ ) and the ISP ( $M = 1.59$  vs.  $M = .91$ ).

Correspondingly, cue repetition increased ad evaluations over no cue repetition,  $F(1, 71) = 10.61, p < .01$ , for both the camera ( $M = 5.07$  vs.  $M = 4.32$ ) and the ISP ( $M = 5.30$  vs.  $M = 4.42$ ). Product evaluations also displayed a superiority in the cue repetition condition,  $F(1, 71) = 11.48, p < .001$ , for both the camera ( $M = 5.31$  vs.  $M = 4.81$ ) and the ISP ( $M = 5.52$  vs.  $M = 4.63$ ). These effects were independent of problem format, interaction  $F_s < 1$ .

Therefore, these findings confirm the hypothesis that the effects observed in Study 2 were due to the facilitating effect of initial cue repetition and not to the inhibiting effects of middle cue repetition. Moreover, they indicate that the effects were not an artifact of the question format employed in the earlier studies.

## STUDY 4

Studies 1, 2, and 3 show that verbal cues can provide referential continuity. However, many ad series use graphic elements that are repeated across several ads (pictures of the model, logos, etc.). Study 4 examined whether pictures can also reactivate text information and provide referential continuity in a text. In doing so, it addressed the following question: If pictorial cues can indeed provide referential continuity, must they be related in meaning to the verbal message, or can a logo without a meaning relationship to the verbal message also activate backgrounded knowledge? To answer this question, I extended K. L. Keller's (1987) research by investigating the effect of different types of graphic cues on the mental representation of the content of a text. Graphics are labeled *interactive* (vs. *noninteractive*) if they represent an overlap in meaning between the pictures and the verbal message (Alesandrini, 1983; Lutz & Lutz, 1977).

The resonance conceptualization of memory retrieval presented in this research does not depend on the modality of the reinstating cue (verbal or pictorial). Resonance occurs at the semantic or meaning level. Therefore, pictures whose meaning overlaps with that of the verbal message should reinstate backgrounded verbal knowledge. However, noninteractive logos should not serve that purpose because they lack conceptual overlap with any content related to the backgrounded information.

### Method

Study 4 only examined problem–solution series. The design was a 2 (cue repetition: initial cue repetition or middle cue repetition)  $\times$  2 (graphic type: interactive picture or noninteractive logo)  $\times$  2 (product: camera or ISP) mixed de-

sign, where cue repetition and problem format were between-subjects factors and product replication was manipulated within subjects.

Eighty-four undergraduate students participated in the study. The text in the target ad series was identical to the problem–solution series in Study 2 with one exception: The conclusion ads did not include the sentences used in the previous studies as cues. Instead, graphics served as cues. The graphics were placed next to or below the text, on the same screen as the text. All graphics were in color. The interactive graphics were chosen to represent the verbal content of the ad. For example, in the camera series, the initial ads contained either the picture of a tent or a noninteractive logo. The middle ad contained either the picture of a video camera or a different noninteractive logo. The conclusion ads included the graphics from either the initial ad (initial cue condition) or the middle ad (middle cue condition). Figure 1 includes an example of the stimuli.

The interactive pictures were pretested to ensure that there was similar meaning overlap for the two pictures used within each of the ad series. Twenty pretest participants reported that the two pictures used in each of the interactive series had a relatively high perceived fit on a 7-point scale (camera:  $M_{\text{picture 1}} = 4.25, M_{\text{picture 2}} = 4.45$ ; ISP:  $M_{\text{picture 1}} = 5.45, M_{\text{picture 2}} = 5.65$ ). For both the camera and the ISP, the interactive pictures were reported to have a higher meaning overlap with their respective texts than the noninteractive logos ( $p_s < .01$ ).

### Results and Discussion

Recall protocols were coded reliably by two judges blind to the hypotheses ( $r = .90$ ). Table 5 includes the means for all measures.

**Ad recall.** For recall of the initial ad claims, an interaction of Cue Repetition and Graphic Type emerged,  $F(1, 82) = 4.71, p < .05$ . The interaction indicated that when the pictures were interactive, cuing the initial ad resulted in greater recall than cuing the middle ad,  $F(1, 82) = 6.02, p < .05$ . This was not the case, however, when the pictures were noninteractive logos,  $F < 1$ . No effects were observed in recall of the middle ad,  $F_s < 1$ . These results confirm that the resonance process takes place at the semantic or meaning level. Without meaning overlap, concepts in long-term memory are not reactivated.

**Mental model construction.** As in Study 2, an analysis was conducted to see if respondents could detect a story line spanning several ads in the series. The results confirm that, in the interactive picture condition, respondents acknowledged detecting a story line more often when the initial ad was cued than when the middle ad was cued in both the camera (61% vs. 32%),  $\chi^2(1) = 3.81, p < .05$ , and the ISP series (61% vs. 29%),  $\chi^2(1) = 4.62, p < .05$ . In the noninteractive logo condition, there was no effect of cue ma-

### Initial ad

This digital camcorder is so light that you can take it with you next time you go camping in the Rockies. Film your friends around the campfire. Don't miss any details. But, under such low light conditions, will the camcorder work?



Interactive Picture



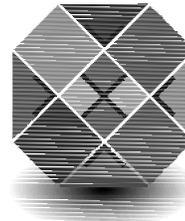
Non-interactive Logo

### Middle ad

The best all around. This digital camcorder allows you to connect directly to your computer through a Firewire connection. Download and edit your movies digitally. The camcorder even allows you to record movies in MPEG format, for easy sharing and emailing.



Interactive Picture



Non-interactive Logo

### Conclusion ad

Try our DARC lighting system, which will allow you to record even in conditions of total darkness, thanks to our infrared light technology. Record digitally and save yourself the hassle of video tapes.



Interactive Picture



Non-interactive Logo

FIGURE 1 Ad series example: Initial cue condition for both the interactive picture and the logo conditions (camera).

nipulation on story line detection for the camera (39% vs. 33%),  $\chi^2 < 1$ , and/or the ISP (29% vs. 25%),  $\chi^2 < 1$ .

Similarly, cue repetition and graphic type interacted with respect to respondents' ability to recall the main events in the series' stories,  $F(1, 82) = 5.85, p < .05$ . As shown in the fourth section of Table 5, respondents who were exposed to the interactive pictures were better able to recall the stories' central

events when the initial ad was cued than when the middle ad was cued,  $F(1, 82) = 10.33, p < .01$ . In the noninteractive logo condition, however, initial cue repetition had no impact on respondents' characterization of the stories,  $F_s < 1$ . This suggests that, as expected, repetition of interactive pictures can reactivate backgrounded knowledge, reinstating referential continuity and helping to form a problem-solution relation.

TABLE 5  
Measure Means as a Function of Cuing and Picture Type for Study 4

Measure and Cue Condition	Camera Replication		ISP Replication		Overall	
	Interactive	Noninteractive	Interactive	Noninteractive	Interactive	Noninteractive
Initial ad recall						
Initial cue condition	1.07	0.72	0.87	0.44	0.97 <sub>a</sub>	0.58 <sub>a,b</sub>
Middle cue condition	0.58	0.80	0.26	0.60	0.42 <sub>b</sub>	0.70 <sub>a,b</sub>
Middle ad recall						
Initial cue condition	0.50	0.56	0.90	0.72	0.70 <sub>a</sub>	0.64 <sub>a</sub>
Middle cue condition	0.35	0.37	1.00	0.89	0.68 <sub>a</sub>	0.63 <sub>a</sub>
Percent detecting story						
Initial cue condition	61% <sub>a</sub>	39% <sub>b</sub>	61% <sub>a</sub>	29% <sub>b</sub>		
Middle cue condition	32% <sub>b</sub>	33% <sub>b</sub>	29% <sub>b</sub>	25% <sub>b</sub>		
Story events recalled						
Initial cue condition	0.96	0.24	0.87	0.24	0.92 <sub>a</sub>	0.24 <sub>b</sub>
Middle cue condition	0.35	0.24	0.26	0.38	0.31 <sub>b</sub>	0.31 <sub>b</sub>
Attitude toward ads						
Initial cue condition	5.08	4.54	5.40	4.45	5.24 <sub>a</sub>	4.50 <sub>b</sub>
Middle cue condition	4.28	4.52	4.42	4.67	4.35 <sub>b</sub>	4.60 <sub>b</sub>

*Note.* For each measure, overall cell means with unlike subscripts differ significantly at  $p < .05$ . Comparisons of the percentage of subjects detecting story are made within each replication separately.

However, in the logo condition, the lack of conceptual overlap between the cue and the initial ad prevents the graphics from reinstating referential continuity so respondents do not form an integrated mental representation.

**Attitudes.** Ad evaluations were affected in an analogous manner to initial ad recall and mental model construction. The interaction of Graphic Type and Cue Repetition was significant,  $F(1, 82) = 4.30, p < .05$ , and indicated that cuing the initial ad with an interactive picture increased attitudes toward the ad,  $F(1, 82) = 6.18, p < .05$ , but cuing it with a noninteractive logo did not,  $F < 1$ .

**Mediation analysis.** Successful mental model construction mediated the effect of the independent factors on ad evaluations. When the number of story events recalled was included as a covariate, the interactive effect of cue repetition and cue type on evaluations was nonsignificant for the camera,  $F = 1.49, p > .23$ , and for the ISP,  $F < 1$ . Thus, the proportion of variance accounted for by the interaction of Cue Repetition and Cue Type ( $\omega^2$ ) was reduced from .06 to .02 in the camera replication and from .11 to .00 in the ISP replication.

## GENERAL DISCUSSION

To date, consumer research had not fully examined how individuals integrate information from advertising copy into accurate mental models or representations. In this article, psycholinguistic models of text processing are used to examine the link between ad copy characteristics, integrated mental model construction, and ad responses. Results indicate that two conditions are necessary for successful mental

model construction: referential continuity and coherence. Specifically, they show that text characteristics such as cue repetition can reestablish referential continuity after it has been disrupted and that the presentation format or structure of the text (e.g., problem–solution and narrative) can influence its degree of coherence. This research provides an extension of previous studies examining the effect of external retrieval cues on memory (K. L. Keller, 1987, 1991) and research examining the effect of ad-embedded, nontextual cues (Unnava & Sirdeshmukh, 1994). By utilizing psycholinguistic theory, this research can examine the process through which textual cues influence ad processing.

Four empirical studies support the theorizing using a problem–solution ad series paradigm, in which a situation is divided into several ads. When a verbal cue originally presented in the initial ad is repeated in the conclusion ad, readers can establish referential continuity, as evidenced by their recall of the initial ad (Studies 1–4). Once this happens, they can impose a problem–solution coherence relation and form a mental representation or model of the full situation. The problem can then be resolved, leading to positive evaluations. Thus, when referential continuity is restored, successful resolution of the problem is manifested in more positive evaluations for problem–solution series than for variation series, which lack both a problem to be solved and high coherence (Study 2). Referential continuity can also be established by graphic cues, provided these cues have a semantic overlap with the backgrounded elements (Study 4).

The research presented here integrates two generally opposing views of discourse processing: (a) a top-down approach consisting of the use of coherence relations, which are based on scripts like causal or problem–solution relations; and (b) a bottom-up approach consisting of the use of cues to reactivate information

from long-term memory. The view of text processing advocated here joins two streams of advertising research: studies of cue repetition effects (e.g., K. L. Keller, 1987; Nordhielm, 2002) and studies of how the presentation format or structure of an ad's text influences ad responses (e.g., Adaval & Wyer, 1998; Escalas, 1998). Further, the process underlying cue repetition and presentation format effects is identified and described in detail.

Current models of ad processing (e.g., the resource matching hypothesis; P. Keller & Block, 1997; Peracchio & Meyers-Levy, 1997) can be integrated with an analysis of text processing in advertising. For example, the use of certain coherence relations (e.g., problem-solution relations) may reduce the difficulty of integrating information from different ads. Therefore, when those relations are used in ad campaigns, they may be particularly effective in low-involvement learning situations. In such situations, there would be a match between available resources (low motivation and, therefore, low available resources) and the resources required to process the information (easy integration and, therefore, low required resources).

Overall, this article provides a new direction for future advertising research. A psycholinguistic text-processing perspective helps understand the process through which consumers reinstate and integrate knowledge from different ads in a campaign with a common theme or story line. This is a significant area for further research, as much of the existing literature on advertising effectiveness focuses on individual ads. In addition, the text-processing approach provides a theoretical backdrop against which a host of variables could be tested to examine their effect on ad processing. For example, future research could explore the effect of varying the amount of conceptual overlap between reinstating cues and previously backgrounded information on referential continuity, or it could examine the effect of conflicting information on the imposition of coherence. Also, factors that have historically played a major role in advertising research (motivation, involvement, ability to process, etc.) could be included in future studies. Finally, this research examined print ads (although the blocked format was similar to broadcast advertising). Future research should explore different media, particularly to tease out potential presentation modality effects (Tavassoli, 1998). The text-processing perspective is consistent with existing models of human information processing, complements them, and provides a new inroad into our theoretical understanding of advertising responses.

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