
Cognitive and Affective Priming Effects of the Context for Print Advertisements

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An experiment was conducted to investigate two selected effects (i.e., cognitive and affective priming) of the context for print advertisements. The cognitive context, which primes certain attributes of a product, determined the type of interpretation given to product information in the ad, and thereby guided consumers' evaluations of the advertised brand. The affective context, which triggers emotional reactions among the audience, also influenced brand evaluations. Further, step-down analyses suggested that cognitive priming effects operated mainly through attitude toward the brand, whereas affective priming effects worked primarily via attitude toward the ad. The theoretical and practical implications for understanding advertising effects are discussed.

One of the key questions involved in decisions on the selection of an appropriate context for advertisements regards the influence that context will have on product evaluations (e.g., attitudes and purchase intentions). In fact, surveys have repeatedly shown that the impact of the ad context is among the top research priorities for advertisers (Chook 1985; Schultz 1979).

A number of studies suggest that the ad context can influence the audience's perception of the ad, and thus, its effectiveness (e.g., Singh and Churchill 1987; Soldow and Principe 1981), but studies have often yielded conflicting results (e.g., Clancy and Kweskin 1971; Kennedy 1971; Krugman 1983; Soldow and Principe 1981). For example, Soldow and Principe (1981) found that interesting programs reduced advertising effectiveness, while Krugman (1983) found the opposite; interesting programs enhanced advertising effectiveness. Further, although many studies have examined the overall impact of the ad context on advertising effectiveness, relatively little attention has been given to underlying mechanisms and specific effects (c.f., Goldberg and Gorn 1987). It seems useful to develop a theoretical model that can systematically account for context effects.

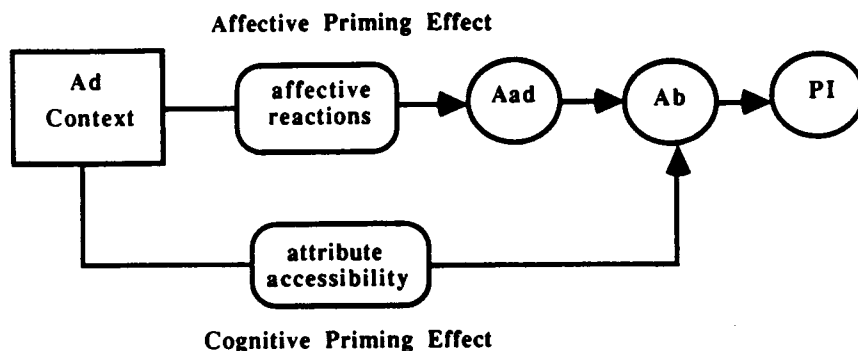
The present study investigates one way in which ad context can influence consumers' processing of ad information. It proposes that context may affect the persuasive impact of ads by priming certain cognitive and affective components, as illustrated in Figure 1A. Specifically, this study examines how exposure to magazine articles can influence subsequent processing of information in a print ad.

First, the advertising context (e.g., a crime story) can prime or activate certain attributes (e.g., safety) to readers, and guide their interpretations of product information in the ad (e.g., car size). These interpretations may result in the formation or change of beliefs about the advertised brand, which will affect consumers' brand evaluations (Mitchell and Olson 1981). Since this process affects ad effectiveness primarily by increasing the accessibility of attributes, this aspect of the ad environment will be called a "cognitive context."

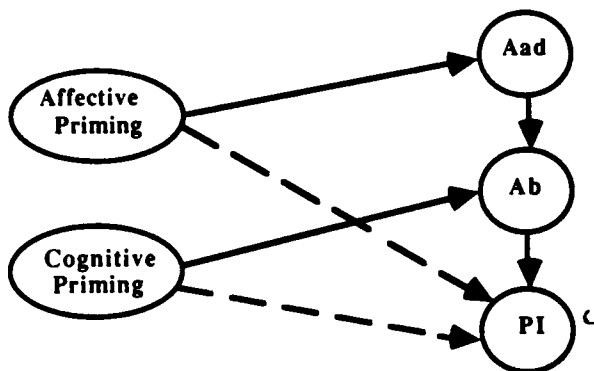
Second, advertising context is often negatively or positively valenced (e.g., a

FIGURE 1
Cognitive and Affective Priming Effects of Ad Context

A. Hypothesized Priming Effects of Ad Context



B. Summary of Findings from Step-Down Analyses



Note: The dotted paths, which were significant in univariate ANOVAs, have become insignificant in step-down analysis.

depressing story), and can trigger overall affective reactions (e.g., negative feelings). This overall affect generated by the context can be transferred to one's attitude toward the ad, which can subsequently influence brand evaluations (e.g., MacKenzie, Lutz, and Belch 1986). This aspect of the ad environment is termed an "affective context," since it operates primarily through inducing affective reactions. In this paper affective reactions are used to refer to overall affect or feelings, rather than values or evaluative components (e.g., e_i of the Fishbein model).

The research goes beyond the existing studies in several aspects. First, it incorporates research on priming and affect transfer in investigating the effects of two important aspects of the advertising environment: 1) the cognitive context that increases the salience of product attributes and 2) the affective context that induces feelings. Second, the study examines the way in which the advertising context influences particular measures of advertising effectiveness such as attitudes and purchase intentions. Finally, the study extends the research on inference by

considering advertising situations in which several different, potentially conflicting, inferences are possible from product information given in the ad.

Hypotheses

Cognitive Priming Effects. In many instances, an advertisement may contain product information that can be interpreted in several different ways. For example, when one hears that a car is large, one might infer either that the car will be comfortable or that the car will need a large amount of gasoline. As such, a certain product characteristic (e.g., the size of a car) can imply several benefits or consequences (e.g., safety or gas consumption). In such a case, interpretations of size as high comfort would enhance brand evaluation, whereas interpretations of size as low gas mileage would lower brand evaluation. What determines the particular interpretation given to the presented information?

Many studies show that interpretation of information often depends on the particular knowledge structures (e.g., concepts and schemas) that are currently active (Higgins and King 1981; Wyer and Srull 1981). For example, information that someone gave a friend an answer during an exam could be interpreted as either "dishonest" or "kind." Which interpretation is actually given seems to depend on which of the related concepts (dishonest or kind) is most easily accessible at the time information is received (Srull and Wyer 1980). Active or accessible concepts serve to direct attention to selective aspects of information and are likely to be used in subsequent interpretations. This would suggest that highly accessible attributes are more likely to be used in interpreting product information in a given advertisement.

Given that attribute accessibility guides interpretations of product information, it becomes important to identify the determinants of attribute accessibility. Although a variety of factors can make attributes accessible to

those exposed to an advertisement, of particular interest to this study is the immediate environment of the ad. When the advertising context provides exposure to a certain attribute (e.g., when a magazine article mentions the attribute), this attribute is likely to become accessible. Subsequently, that attribute is likely to be used in processing ad information and evaluating the advertised brand. Research in social cognition has shown that the accessibility of certain concepts is enhanced by prior exposure to those concepts (Higgins and King 1981; Wyer and Srull 1981).

The impact of the advertising context on brand evaluation would therefore depend upon the attribute primed or activated by the context (e.g., magazine article) prior to ad exposure. When the advertising context primes an attribute (e.g., comfort) that has positive implications for the evaluation of the advertised brand, overall product evaluations will be enhanced. In contrast, when the context primes an attribute (e.g., gas consumption) whose evaluative implication is negative, overall product evaluations will be lowered. This suggests that the same ad can have different effects, depending upon the cognitive context in which the ad appears. The following hypothesis is therefore proposed:

H₁: Advertising effects on brand evaluations will be enhanced by a context which primes attributes that are associated with the advertised attribute and have positive implications; but will be decreased by a context which primes attributes that are associated with the advertised attribute and have negative implications for the advertised brand.

Affective Priming Effects. One basic premise of this study is that people unconsciously generate affective reactions to the context (e.g., magazine article) in which advertisements appear, and that these context-generated affective responses may influence subsequent judgments (Erdley and D'Agostino

1988). Lutz (1985) has hypothesized that one important determinant of attitude toward the ad (Aad) is consumers' affective state at the time of ad exposure (situational affect), which is in turn determined in part by the advertising context. Edell and Burke (1987) found that feelings experienced during ad exposure are important predictors of Aad and attitude toward the brand (Ab), and that Aad mediates the effects of feelings on Ab. Goldberg and Gorn (1987) also found that mood induced by a television program carried over to the subjects' felt mood while they watched the commercial. Further, the subjects' evaluations of the commercials were influenced by the nature of the program. Relative to a sad program, a happy program induced greater ad effectiveness and more affectively positive responses.

One basic premise of this study is that people unconsciously generate affective reactions to the context . . . [which] may influence subsequent judgments.

Studies in psychology have shown that affective reactions can be automatically triggered by the mere presence of an object and that these affective reactions influence subsequent perceptions and evaluations (e.g., Fazio 1986). For instance, Veitch and Griffitt (1976) found that positive or negative affect was induced by hearing broadcasts conveying good or bad news, and that these affective states biased people's subsequent evaluations of anonymous others in affect-congruent directions. Neidenthal and Cantor (1986) also argued that nonconscious global affective reactions serve to guide the process of impression formation.

These findings imply that the affective tone or valence of the advertising context can influence the effectiveness of embedded ads. Specifically, it is hypothesized that the affect evoked by the context may affect attitude toward ads, and thereby influence subsequent evaluations of the advertised brand. It should be noted here that this study differs from previous research on feelings elicited by the ad (e.g., Edell and Burke 1987), because the affective reactions of interest in this study are the feelings generated in response to the context, not to the ad itself.

H₂: An ad placed in a context that induces positive affect will enhance attitude toward the ad, and will produce more favorable brand evaluations than an ad placed in a context that induces negative affect.

Method

The hypotheses were tested with an experiment in which subjects were exposed to a print ad and asked to indicate their reactions to the advertised product. Aspects of the magazine article preceding the ad were manipulated in order to investigate the priming effects of the ad context.

Product and Advertisement. Since this study examines priming effects, several things were considered in choosing the product class. First, the product should have many interrelated attributes so that several interpretations are possible from a piece of information. Second, subjects should have some interest in the product so that they would process information in the ad. Automobiles were selected as an appropriate product based on these considerations.

A pretest was conducted with 15 target subjects (who were not included in the main experiment). Participants were first asked to identify salient attributes of the test product. Then, for each attribute, associated attributes were solicited and the perceived relationship was assessed on a scale ranging from

"perfectly positive relationship" (+ 10) to "perfectly negative relationship" (- 10). Such a scale has been used in previous research on covariation assessment (e.g., John, Scott, and Bettman 1986). The results indicated that the size of a car was negatively related to fuel economy, but positively related to safety. That is, the large size of a car tended to imply either that the car is not fuel efficient or that the car is safe. Therefore, the size of a car was chosen as a focal attribute in the test ad. Accordingly, fuel economy was chosen as the attribute to be primed by the ad context in the negative interpretation condition, whereas safety was chosen as the salient attribute in the positive interpretation condition.

A one-page print ad which focused on the size of the advertised car was created. The ad introduced a fictitious brand as a new car in order to reduce any confounding due to subjects' familiarity with the test brand. Presenting product information in four short paragraphs, the ad especially emphasized the fact that the car was large.

Experimental Design. This study used a 2x2 factorial between-subjects design. The two factors were: (1) product attributes primed (safety or fuel economy) by the ad context, and (2) the affective (positive or negative) tone of the ad context. These two factors will be called "Cognitive Priming" and "Affective Priming," respectively. Magazine articles (described below) were placed before the advertisement, thus providing the appropriate advertising context.

Cognitive Priming. Cognitive priming was manipulated by varying the theme of the article so that it would activate different attributes. The ad emphasized the "large size" of the car, and it was desired that positive and negative interpretations be elicited. To do this, two different themes were selected with the purpose of priming one of the two attributes (fuel economy or safety) that are associated with the size of the automobile. In the safety condition, the article dealt with the safety of air travel with a headline in bold

face, "How safe is air travel?" In the fuel economy condition, the article contained a story about an oil entrepreneur with a headline in bold face, "Oil's new mavericks." The objective was to enhance the chances that, while reading the ad saying that the car was very large, subjects who had earlier read an article on flight safety would interpret the car size information in terms of safety, whereas those who had read the article on oil entrepreneurs would encode the product information in terms of gas consumption.

Affective priming was manipulated by varying the affective tone of the magazine article so that it would elicit positive or negative feelings.

Affective Priming. Affective priming was manipulated by varying the affective tone of the magazine article so that it would elicit positive or negative feelings. Previous studies have found that reading newspaper articles or hearing broadcasts can induce affect under forced exposure conditions (e.g., Johnson and Tversky 1983; Veitch and Grifitt 1976). This study used magazine articles featuring either a positive or a negative story to generate affect. For the air travel theme, in the positive affect condition the article assured air travel safety by emphasizing the increased resources and improved qualifications of the pilots. In the negative affect condition, the article underscored the danger in air travel by mentioning the increased number of midair collisions and the poor qualifications of the pilots. In a parallel fashion, in the fuel economy articles, positive affect was manipulated with a success story of the

oil entrepreneur, whereas negative affect was manipulated with a failure story.

These four magazine articles were used to manipulate the two priming aspects of the ad context. Each article corresponded to one of the four (2x2) treatment conditions in the research design. The articles were approximately equal in length (four paragraphs on one page).

Procedures. The subjects were 72 undergraduate students recruited from introductory business courses. Subjects were randomly assigned to one of the four treatment groups that differed in terms of magazine articles preceding the ad. After being seated in the research room, subjects were told that the study concerned people's reactions to magazine articles and advertisements. They were asked to read the article and the ad as if they were seeing them in a magazine. It was also emphasized that all the questions concerned subjects' own feelings and thoughts, and that there were no right or wrong answers.

After the general instructions, each subject read a magazine article, which varied on two dimensions: 1) attribute primed (oil or safety) and 2) affective tone (positive or negative). After reading the article, subjects completed a one-page questionnaire on their reactions to the magazine article including topics such as the personal relevance of the article and subjects' current feelings.

Next, subjects were told that a pre-production version of an advertisement for a new car had been obtained for the study. Each subject was given a photocopy of the ad and was told to examine it as if s/he had seen it in a magazine. All subjects saw the same ad, although they had read a different article. After reading the ad, subjects were asked to respond to an open-ended question to generate salient attributes that would come to mind if they considered purchasing a car. Finally, subjects were asked for attitude toward the ad (Aad), attitude toward the advertised brand (Ab), and purchase intentions (PI).

Dependent Variables. Multiple measures of advertising effectiveness were taken for the study: Aad, Ab, and PI. Aad was measured using four 7-point bipolar scales anchored by the adjectives "good-bad," "interesting-uninteresting," "like-dislike," and "irritating-not irritating." Ab was assessed by three 7-point scales anchored by the adjectives "good-bad," "pleasant-unpleasant," and "like-dislike." PI was measured by three 7-point scales: "likely-unlikely," "possible-impossible," and "probable-improbable." The alpha coefficients for Aad, Ab, and PI were .85, .92, and .89, respectively, indicating a high degree of internal consistency.

Results

Manipulation and Demand Characteristics Checks. To assess the manipulation of cognitive priming, two measures were constructed from the free-elicitation data to operationalize the relative accessibility of attributes: 1) frequency of mention and 2) order of mention. The frequency-of-mention measure is based on the assumption that accessible attributes will be more frequently mentioned by subjects (e.g., Ryan and Holbrook 1982). Also, it is likely that a cognitively accessible idea comes first to mind (Wyer and Srull 1981). The first half of Table 1 summarizes the results on manipulation checks.

The frequency-of-mention measure was first examined. For the attribute of safety, the priming manipulation had significant effects on the frequency of mention; 56 percent of the subjects mentioned safety in the safety condition, whereas 36 percent mentioned safety in the fuel economy condition ($p < .05$). Conversely, fuel economy was more frequently mentioned in the fuel economy condition (72 percent v. 44 percent; $p < .01$). The order-of-mention measure was established by open-ended responses and compared across groups. For the attribute of safety, the mean order of mention was 5.15 in the safety condition, compared with 6.23 for the fuel economy condition (Mann-Whitney $U = 75.0$; $p < .04$). The at-

tribute of fuel economy was also elicited earlier in the fuel economy condition than in the safety condition (4.46 v. 5.38; Mann-Whitney $U = 125.5$; $p < .03$). The results indicate that the manipulation of cognitive priming was successful.

Affective priming of the ad context was assessed by asking the subjects' feelings. They responded on a 7-point scale, ranging from "extremely happy" to "extremely unhappy." There were three other scalar items anchored with the adjective pairs: pleased-displeased, comfortable-uncomfortable, and good-bad. The average of the responses to the four items was used as a measure of the affect induced by the article. The alpha coefficient for this measure was .90. As expected, ANOVA analysis showed that subjects expressed more favorable feelings in the positive (mean = 4.71) than negative (mean = 3.56) affect condition ($F(1,68) = 32.9$; $p < .001$), whereas the cognitive-priming manipulation did not influence affect ($F(1,68) = 1.8$; $p > .18$). The interaction effect was also significant ($F(1,68) = 3.23$; $p < .05$). Specifically, for the safety articles, affect was more favorable in the positive condition than in the negative condition (4.78 v. 3.21; $p < .01$). For the oil articles, affect was also in the expected direction (4.63 v. 3.90; $p < .05$). Overall, the evidence suggests that the experimental manipulations were successful.

After completing the last questionnaire, subjects were asked to write down their thoughts concerning the purpose of the experiment. Results showed that no subjects guessed the true purpose of the study.

Cognitive and Affective Priming Effects

A 2x2 multivariate analysis of variance (MANOVA) was run on the set of dependent variables (i.e., Aad, Ab, and PI) with cognitive priming and affective priming as the independent variables. The Box's M test indicated that the homogeneity assumption was valid; Box's $M = 23.17$, $\chi^2(18) = 21.32$, $p >$

.25. MANOVA results showed that both factors had significant main effects on these measures of advertising effectiveness ($F(3,66) = 3.34$, $p < .02$; $F(3,66) = 3.89$, $p < .01$, respectively). The interaction effect was not significant ($F(3,66) = 0.17$, $p > .90$). Overall, H_1 and H_2 are supported.

For an understanding of priming effects on individual variables, separate univariate 2x2 ANOVAs were subsequently run on each dependent variable, Aad, Ab, and PI, respectively. The first two columns of Table 2 summarize these ANOVA results. Cognitive priming had significant main effects on Ab and PI ($F = 5.35$, $p < .02$; $F = 4.98$, $p < .03$, respectively), but its effects on Aad were not significant ($F = 0.12$, $p > .70$). The main effects of affective priming were significant for Aad ($F = 5.79$, $p < .02$) and approached significance for PI ($F = 3.76$, $p < .06$). The effects of affective priming on Ab were not significant ($F = 0.44$, $p > .50$). None of the interaction effects were significant in these analyses.

The bottom half of Table 1 gives the cell means for the dependent variables. An examination of these means reveals that the effects were in the expected direction. For example, PI was higher in the safety-attribute condition than in the fuel-economy condition (2.91 v. 2.28, 2.35 v. 1.85, respectively for positive and negative affect conditions).

We have thus far examined analyses of MANOVA and univariate ANOVAs for context effects. A MANOVA test would indicate if any of the dependent variables (i.e., Aad, Ab, and PI) are different across groups, whereas an ANOVA test would indicate whether a certain dependent variable is different across groups. The MANOVA results suggested that the mean vectors were affected by cognitive and affective priming of the ad context. Subsequent ANOVAs suggested that cognitive priming had effects on Ab and PI, while affective priming had effects on Aad and PI.

There are, however, several limitations to this use of the MANOVA-ANOVA analyses (Bray and Maxwell 1985). First, the probability statements

TABLE 1
Cell Means for Major Variables

Variables in the study	Safety as a salient attribute		Fuel economy as a salient attribute	
	Positive affect (n = 18)	Negative affect (n = 18)	Positive affect (n = 18)	Negative affect (n = 18)
Manipulation checks				
Saliency of attribute				
Frequency of mention				
safety	11	9	6	7
fuel economy	8	8	12	14
Order of mention				
safety	5.18	5.11	6.17	6.29
fuel economy	5.00	5.75	4.25	4.64
Affect	4.78	3.21	4.63	3.90
Dependent variables				
Aad	3.94	3.18	3.79	3.13
Ab	3.69	3.57	3.06	2.85
PI	2.91	2.35	2.28	1.85

Note: Aad = attitude toward the ad; Ab = attitude toward the brand;
PI = purchase intention

TABLE 2
Univariate and Step-Down F Tests

Variable ordering	Sources of variation	Univariate		Step-Down	
		F	p	F	p
1. Aad	C	0.12	.73	C	
	A	5.79	.02		
	CxA	0.03	.87		
2. Ab	Aad*			71.75	.00
	C	5.35	.02	8.61	.01
	A	0.44	.51	2.11	.15
	CxA	0.07	.79	0.30	.59
3. PI	Aad*			0.01	1.00
	Ab*			13.27	.00
	C	4.98	.03	1.27	.27
	A	3.76	.06	3.36	.07
	CxA	0.07	.80	0.20	.66

Note: C = cognitive context; A = affective context; Aad = attitude toward the ad;
Ab = attitude toward the brand; PI = purchase intention

*The step-down F tests are based on ANCOVA with these preceding variables as covariates.

from separate ANOVAs of multiple mean differences are not meaningful, since the dependent variables are interrelated. Second, separate univariate ANOVAs are not very useful for understanding the nature and process of the experimental effects on interrelated variables. In this study, variation in a particular variable may thus be due

to a direct influence of the ad context, or to the dependence of that variable on other variables. In this regard, an important question can be raised: do responses occur independently, or as a result of a chain reaction with other responses in the dependent variable set?

A useful approach to such problems would be a step-down analysis. The

step-down analysis provides an examination of sequential relations among the original set of dependent variables (Roy 1958). By examining dependent variables in a predetermined order, it can assess the unique contribution of each variable to the between-group variance, as the variable is added to the dependent variable set. Unlike the univariate ANOVA tests, the probability values associated with step-down analysis are independent. It can provide useful information since it indicates whether variation in a single dependent variable is due to the direct effects of an independent variable or due to relationships of that dependent variable with other dependent variables. Alternatively, structural equation analysis might have been employed to examine such direct and indirect effects in experimental designs (cf. Bagozzi and Yi 1989). However, it was considered less than appropriate for the present study, given the small sample size (n = 72).

Step-down analyses were conducted beginning with the last-ordered variable, examining the step-down F values in reverse order. Previous research suggests that the dependent variables are likely to be in casual order of Aad, Ab, and PI (e.g., MacKenzie, Lutz, and Belch 1986; Gardner 1985a).

Columns 5 and 6 in Table 2 summarize the results from these step-down analyses. The first step-down F is the same as the univariate F value from ANOVA on Aad. The second step is the effect of the independent variables on Ab, with the effect of Aad covaried out. The third step indicates the effects of the independent variables on PI with the effects of the two preceding variables (Aad and Ab) removed.

When the casual relations among the dependent variables were taken into account by step-down analyses, some of the effects that had been significant in univariate ANOVAs became nonsignificant. Specifically, the effects of affective and cognitive priming on PI became nonsignificant in the step-down analyses. These results suggest that the variations in PI were due to the dependence of PI on Ab and Aad, rather than due to direct influences of the ad

context. Figure 1B summarizes the key findings from the step-down analyses.

Had only the univariate and multivariate F tests (via ANOVAs and MANOVA) been used to examine the effects, a misleading interpretation may have occurred. For example, the statistical significance of univariate F values for PI may have been interpreted as evidence supporting the direct link from cognitive priming to PI. However, step-down analyses rule out this possibility by indicating that the effect of cognitive priming on PI does not hold unless Ab is considered as a mediating variable (c.f., Figure 1B).

In summary, the MANOVA results support H_1 and H_2 ; advertising effectiveness was influenced by the ad context. Univariate ANOVAs show that the cognitive context had effects on Ab and PI, while the affective context had influences on Aad and PI. Subsequent step-down analyses revealed the processes underlying the effects of the ad context on individual measures of advertising effectiveness (i.e., Aad, Ab, and PI). Aad was directly influenced by the affective context. Ab was affected directly by the cognitive context and indirectly (via Aad) by the affective context. Finally, PI was affected indirectly (through Ab and Aad) by the cognitive and affective contexts.

Discussion

The findings of this study support the hypothesis that priming a certain attribute increases the likelihood that this attribute will subsequently be used to interpret the ad information, and thus will affect advertising effectiveness. The cognitive context guided the person to select among possible interpretations of information about the size of a car. After exposure to an ad emphasizing the large size of a car, subjects' Ab and PI were different, depending upon the attribute activated by the ad context. Specifically, Ab and PI were higher when the attribute of safety was made salient in the article preceding the ad, as opposed to when fuel economy was made salient. When subjects were reading a magazine article on either of

the two attributes (safety or oil), the corresponding attribute should have been activated and become highly accessible. Thus, the subjects should have had "top of mind" awareness of the attribute when they subsequently read the ad. That attribute was therefore more likely to be used in processing product information in the ad (i.e., the size of car). That is, the interpretation given depended upon which attribute was most accessible at the time that information in the ad was received.

. . . advertising effectiveness was influenced by the ad context.

This result supports a body of research in social cognition showing that a temporary increase in construct accessibility from recent activation (e.g., reading the article about an attribute) can affect people's judgment of an object (Wyer and Srull 1981). In Wyer and Srull's (1981) "storage bin" model, a recently activated concept is placed on the top of a layered bin, and, when processing new information, the construct at the top is accessed first for interpreting that new information. The elicitation data in the present study indicate that the attributes primed by the article were indeed available for use in interpreting ad information. The results are very consistent with the research on framing effects (e.g., Bettman and Sujan 1987); priming different decision criteria (i.e., attributes) influences how a product is evaluated.

Affective priming of the ad context (i.e., affective tone of the article) also significantly influenced advertising effectiveness. Subjects' Aad and PI were higher when the affective tone of the article was positive, as opposed to when it was negative. Step-down analyses revealed that affective reactions gener-

ated by a magazine article influenced Ab and PI through Aad. This analysis supports the previous finding that moods induced by the ad context affect brand attitudes (e.g., Axelrod 1963), but extends it by identifying the underlying processes.

This impact of the affective context on Aad is consistent with previous research on Aad (e.g., Lutz 1985). Lutz (1985) claimed that this effect works mainly through a process of affect transfer. The findings of this study support this view; the ad context induced feelings among ad recipients, which in turn influenced Aad. That is, the linkage between the affective context and evaluations is viewed as direct via affect transfer in this paper (e.g., Bierley, McSweeney, and Vannieuwkerk 1985).

A more indirect process may also be used to account for the same effect. According to the mood congruency/accessibility hypothesis (e.g., Goldberg and Gorn 1987), the effects of positive affect may be mediated by such cognitive activity as information retrieval (Gardner 1985b). That is, the mood induced by the context would affect product evaluations by making mood-congruent materials more accessible in memory. This explanation is relatively less convincing for the present study, since the subjects were likely to have few materials in memory that could be related to the new brand introduced in the experiment. However, to the extent that they used knowledge about the product category in evaluating the advertised brand, this explanation remains plausible. Thus, the exact process underlying the affective priming effects remains an important research issue.

This research extends research on advertising effects in several ways. First, this study incorporates research on priming in investigating the influences of two important aspects of the ad environment: 1) the cognitive context that primes product attributes and 2) the affective context that induces feelings. This study models psychological processes that occur as a result of print ads being embedded in certain environments and examines the way in which

the ad context influences particular measures of advertising effectiveness.

Second, this research links ad context and information accessibility within a single framework in explaining cognitive priming effects. On the one hand, many studies have shown that ad contexts affect advertising effectiveness (e.g., Singh and Churchill 1987). On the other hand, studies of information accessibility suggest that once a concept is primed or activated, its relative salience is enhanced, and the likelihood of its use in encoding subsequent information increases (e.g., Wyer and Srull 1981). The present research suggests that an integration of the two streams of research can be fruitful.

Third, this study extends the research on inferential beliefs by considering situations where several different, potentially opposing, inferences are possible. That is, cognitive priming effects in the present study might be seen as special types of inferential beliefs. Studies of human inference suggest that people may go beyond the given information by forming inferential beliefs about unmentioned aspects of a stimulus (e.g., Ford and Smith 1987; Huber and McCann 1982). As a consequence, an ad designed to change a belief may indirectly affect other beliefs that are not mentioned in the ad (Yi, forthcoming). However, previous research tended to examine whether or not inferences are made, with relatively little attention given to the possibility of multiple inferences. In this regard, the present study can be seen as an extension of the research on inference; it allows for the existence of several inferences which may differ in their evaluative implications, examines which inferences are made out of several possible ones, and investigates attribute salience as a determinant of inferences.

The present research is also relevant to practitioners of advertising. First, the ad context is not merely a benign background for ads, but it can also become an effective communication itself. By providing an understanding of context effects, this study expands the scope of both strategic and tactical approaches to persuasion. Second, the present

study helps advertisers understand potentially dysfunctional second-order effects of the ad context. If the ad environment primes negative inferential beliefs or negative feelings, evaluations of the advertised brand can be negatively affected. Third, the results of this study can be useful for understanding the positive or negative context effects of commercial clutter. Finally, ad context effects may be important for copy testing. Since ad effectiveness varies across contexts, ads must be tested in a setting that closely resembles the actual ad environment.

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Limitations of the present study and directions for future research are in order. First, this study was conducted in a relatively high-involvement situation (e.g., automobile and print ads), and findings should be interpreted with caution. It may be interesting to investigate how involvement moderates priming effects. It is possible that affective priming effects will be relatively strong under low involvement. In contrast, cognitive priming effects, which assume the processing of product information, are likely to be weaker under low involvement than high involvement. Second, measurement of feelings and elicitation of attributes, which were done for manipulation checks, might have been intrusive and have distorted subjects' processing of print ads. Third, each subject saw only one somewhat unnatural ad and one story. In future research more natural ads as well as several stories should be employed to gain external validity. Also, it will be useful to incorporate in-

dividual differences across consumers with respect to the advertised product.

We have examined context effects when an ad states only an attribute (e.g., a large car) without claiming benefits explicitly, but it will be interesting to examine the case when an ad states a certain benefit explicitly (e.g., a large and comfortable car). In this study magazine articles were found to affect the interpretation of product attributes. Future research can focus on the identification of other factors (e.g., point-of-purchase stimuli) that enhance the likelihood that certain attributes are accessible to consumers in processing product information.

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