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Firms sometimes create negative initial impressions on potential customers and then face the problem of determining how to change these initial impressions. The marketing literature offers little guidance on how to do this, and the psychology literature suggests that negative initial impressions are much more resistant to change than positive initial impressions. The authors contrast the efficacy of comparative and noncomparative new information about a target brand when the initial impression of the brand is positive or negative. A body of extant research shows that positive initial impressions change more in the face of comparative information than when the same information is noncomparative and does not mention a competitor. The authors replicate this effect for positive initial impressions but deduce and show that the opposite is true for negative initial impressions. Thus, the authors show that when evaluations are memory based rather than stimulus based and when the initial evaluation is negative, new information that is noncomparative leads to a greater change in consumer attitudes. The authors discuss the implications of this finding for firms that are attempting to recover from negative initial impressions.

Just Give Me Another Chance: The Strategies for Brand Recovery from a Bad First Impression

In the early 1990s, Food Lion was the fastest-growing supermarket chain in the United States. From 1987 to 1991, the chain's net income grew at a compounded rate of 27%. The chain's aggressive growth continued through 1992; then, in November of that year, the ABC television network broadcast a news story criticizing the unsanitary conditions in the chain's deli and meat departments. The news story had a disastrous effect on Food Lion's image, causing an overnight decrease in sales. By the end of 1992, Food Lion's net income was down 13% from the previous year (Hartley 1995).

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In the Food Lion example, it is possible to distinguish the effects of the new information on same-store sales and on the success of new stores Food Lion was opening. For customers of the existing stores, the new information was a challenge to their preexisting attitudes. For customers in markets not yet served by Food Lion, the story about sanitary practices created a negative initial impression. A question that Food Lion faced was how it could overcome these unfavorable first impressions. There has been a fair amount of research in marketing about strategies that challengers might follow to overcome positive initial impressions of incumbents (Carpenter and Nakamoto 1989; Kardes and Kalyanaram 1992; Muthukrishnan 1995; Muthukrishnan, Pham, and Mungale 1999). However, there is little work in marketing about strategies that firms can follow to overcome a bad first impression (cf. Tybout, Calder, and Sternthal 1981). This is a problem of great practical significance, and this is the focus of our article.

Although few firms have problems as severe as those encountered by Food Lion, firms in every market are likely to make bad initial impressions on some subset of potential customers. Consider Jane, a consumer shopping for a pen for her upcoming exam. At the school bookstore, she learns of a new pen brand, the Elegance 3. When Jane examines

the pen, she realizes that a key new feature, a built-in eraser, does not seem to remove smudges as well as she would like. Jane finds this and other information about the Elegance 3 unsatisfactory, so she decides to drop in at the neighborhood stationery store on her way home. At the neighborhood store, Jane discovers another new pen, the Zebra. On asking the salesperson about the two pens, Jane is informed that compared with the Zebra, the Elegance 3 has a superior writing tip that allows smooth, no-skip writing, a feature that Jane had not learned about on her initial exposure to the Elegance. The question we ask is, How will Jane revise her initial evaluation of Elegance 3? Specifically, will there be any difference in the magnitude of her evaluation revision if the positive information Jane receives subsequently about Elegance 3 is comparative versus noncomparative (i.e., the new information is disclosed without comparison with another brand)?

Traditionally, the topic of evaluation revision has been examined from a motivational, knowledge, or attitude strength perspective (Petty, Haugtvedt, and Smith 1995; Sherif and Sherif 1967; Wood 1982; for a review, see Wood 2000) or a perspective based on attribute alignability and diagnosticity (Pham and Muthukrishnan 2002). Work in marketing on how a new challenger can attack an incumbent with a favorable initial impression suggests that comparative challenges lead to more attitude revision than noncomparative challenges (Muthukrishnan, Pham, and Mungale 1999). We develop theoretical arguments and present empirical evidence that suggests that the opposite rules apply for target firms attempting to overcome a negative initial impression. We show that it is more effective to overcome negative initial information with noncomparative positive information about new attributes than with positive information that notes favorable comparisons with another brand.

An investigation of how negative initial evaluations are updated is important because the process by which revision occurs may differ significantly from the process for positive initial evaluations. Prior research suggests that among the pieces of information received earlier, only a subset of that information that is salient and perceived as diagnostic/relevant influences judgments after a delay (Alba, Marmorstein, and Chattopadhyay 1992; Chattopadhyay and Alba 1988; Feldman and Lynch 1988). In addition, in general, negative information is more salient, more memorable, and weighted more heavily in judgments than is positive information (Skowronski and Carlston 1987). Thus, when consumers encounter additional information that is inconsistent with their initial evaluations, the extent to which they retrieve the information received earlier and consider it relevant may depend on whether their initial evaluation was negative or positive. In addition, contextual elements that influence the accessibility and relevance of information may also cause differences between positive and negative initial evaluations in terms of the degree of judgment revision.

Our research question is important from a practical standpoint as well. Without knowing whether updating positive initial evaluations generalizes to the situation in which there is a negative initial evaluation, a brand owner targeting a consumer group that initially made a negative evaluation, as in the Food Lion example, would not be able to decide on a communication strategy to improve the selected segment's

negative brand evaluation. In other words, a clearer understanding of the issue would help marketers make communication decisions in targeting segments that hold negative brand evaluations.

THEORETICAL BACKGROUND

Salience of Informational Inputs: The Role of Evaluative Implication

As we noted previously, judgment revision is a function of the memory for various inputs, such as the overall initial evaluation, the information the evaluation was based on (Chattopadhyay and Alba 1988; Feldman and Lynch 1988), and the degree to which the retrieved information is commensurable with the challenge information (Slovic and MacPhillamy 1974). Research suggests that specific negative information about an object is far more salient than is specific positive information about the object (Fiske 1980). Furthermore, overall evaluations are highly salient (Chattopadhyay and Alba 1988). Thus, when challenge information is presented after a delay, it is likely that any specific negative information and an overall negative evaluation are equally accessible. If the initial evaluation was positive, because the specific positive information is not particularly salient, the overall evaluation is likely to be most accessible when there is a delay (Chattopadhyay and Alba 1988). In summary, we hypothesize the following:

- H₁: With a delay, consumers who are exposed to negative initial information are more likely to retrieve specific negative information either alone or along with the overall negative evaluation, whereas those who are exposed to positive initial information are more likely to retrieve the overall evaluation and not the specific information.

Contextual Factors: Comparative Versus Noncomparative Challenge Information Formats

Contextual factors that have a bearing on the accessibility of information and/or its commensurability are likely to influence the extent and direction of judgment revision (Hogarth and Einhorn 1992; Muthukrishnan, Pham, and Mungale 1999; Muthukrishnan and Ramaswami 1999). In this research, we examine the extent to which a negative initial evaluation, compared with a positive one, undergoes revisions as a function of whether the challenge is presented in a comparative or a noncomparative format. We examine these two information presentation formats because they have been extensively studied in prior research on updating of positive initial evaluations (Muthukrishnan, Pham, and Mungale 1999) and are widely used in practice. For example, *Consumer Reports* provides comparative information on brands, as does comparative advertising, a popular advertising format that accounts for as much as 50% of television advertising (Chattopadhyay 1998).

In a comparative format, the focal brand is compared with a competitor on one or more particular attributes, and in a noncomparative format, only information about the focal brand, along one or more attributes, is presented. Prior research has shown that comparative challenge information can lead to a heightened sensitivity to the incompleteness of information across the initial and challenge context (Muthukrishnan and Ramaswami 1999; see also Hsee 1996). This may motivate consumers to consider whether the previously received information was a sufficient basis

for their evaluation. In addition, consumers may want to check what the competitor's standing is in terms of the targets' attributes received earlier. In this process, consumers retrieve as much of the initial information they received earlier as possible. To go back to our previous example, a comparison of the Zebra and Elegance 3 pens in terms of the quality of their writing tips may motivate Jane to recall all the information that she had previously received about Elegance 3 and compare it with readily available information about Zebra.

Before outlining our predictions regarding judgment revision as a function of the valence of the initial evaluation and the format of the challenge, we want to limit our predictions to only certain situations. As the example of Jane shopping for a pen suggests, our investigation is limited to the following cases: First, in most of our studies, respondents learn information about a target at Time 2 that is opposite in valence to information that formed the basis of an initial impression. Second, we consider only the cases in which the initial information about the target and the subsequent challenge information are on different attribute dimensions. Third, the challenge in this research does not constitute information pertaining to an unambiguously superior competitor (see Muthukrishnan 1995). Fourth, the initial information about the target is always presented in a noncomparative format. Finally, in the comparative format of the challenge, the target brand is compared with a new brand that was not present at the time the initial information was received.

Influence of the Challenge Information Presentation Format

Comparative challenge. Consider the case in which the challenge information is presented in a comparative format. As we mentioned previously, comparative challenges foster motivation to recall initial information. Moreover, comparative information leads to greater diagnosticity because it offers strong reasons for evaluation revision by portraying one of the two brands as superior on the chosen set of attributes.

What are the implications of comparative challenges when the initial information and evaluation are negative? The motivation fostered by the comparative challenge and the salience of the negative initial information are likely to result in a greater likelihood of recalling a large subset of the initial information on encountering the challenge. Furthermore, because of the recency of the challenge, a large subset of the positive challenge information is also available to the decision maker. Because negative information is heavily weighted during the revision process (Fiske 1980; Skowronski and Carlston 1987) and because this pertains to the initial information, the revision in judgment is likely to be moderate. Because the extent of revision depends largely on the recall of the initial information, recall of initial information and the magnitude of evaluation revision will be negatively correlated.

Even when the initial information is positive, the motivation to recall the initial information is high because of the comparative nature of the challenge. Because positive information is not accessible to the same extent as the negative information, a relatively small subset of the initial information is likely to be recalled. In contrast to the small amount of information pertaining to the initial judgment, a rela-

tively large amount of the challenge information is likely to be accessible because the information was more recently presented. Furthermore, negative information presented in a comparative format is more diagnostic because it offers clear-cut reasons for revising the previously formed judgment. As a result, judgment revision will be larger in this case than in the negative-initial-information case. Because there are several processes, such as the salience of the challenge, the diagnosticity of the challenge, lower recall of the initial information that accounts for the revision, and attitude reconstruction based only on the challenge information, there is likely to be little correlation between the amount of initial information recalled and the magnitude of the revision. In summary,

H₂: When the challenge is in a comparative format, the relative weight assigned to the challenge and the magnitude of the evaluation revision are greater with positive initial evaluations than with negative initial evaluations.

Noncomparative challenge. Consider the case in which the challenge information is in a noncomparative format. Noncomparative challenges are less likely to arouse consumers' curiosity or motivation because they do not directly alert consumers to the missing information, unlike in a comparative challenge (Sanbonmatsu et al. 1997). This may lead consumers to retrieve only the most readily available information and compare it with the information provided in the challenge that is in a noncomparative format.

When the initial evaluation is negative, for the reasons we discussed previously, the likelihood of recalling specific information is as high as that of the overall evaluation. However, because the noncomparative challenge format induces low motivation to recall, only the most salient subset of the previously received specific information is likely to be retrieved. Because the retrieved specific information and the challenge information are in a commensurable format, even when the overall evaluation is available, consumers end up comparing the small subset of initial information with the challenge information, for which a larger number of equally strong claims are available. In this situation, the challenge receives greater weight because of the sheer number (frequency) of claims (Alba and Marmorstein 1987). The result is a large revision in the previously formed evaluation. Moreover, in this situation, we expect that there is a significant, negative relationship between the amount of initial information recalled and the judgment revision.

When the initial information provided is positive, the overall evaluation is the most readily accessible input, and this input will be compared with the negative information presented in the challenge. However, an activated overall evaluation may not be directly comparable to the specific attribute information contained in the challenge. Even if the specific attributes are nonoverlapping, they can be integrated and abstracted into an overall evaluation. However, an overall evaluation serves as an anchor and is not directly comparable to any specific attribute (Pham and Muthukrishnan 2002). When consumers perceive such noncommensurability, they are conservative with respect to revising their previously formed evaluations (Albarracín, Wallace, and Glasman 2004; Pham and Muthukrishnan 2002). In addition, the retrieved overall evaluations may serve as an anchor, and people may not adjust this sufficiently (Tversky

and Kahneman 1974). Therefore, the positive initial evaluation undergoes minimal change. In summary, we hypothesize the following:

H₃: When the challenge is in a noncomparative format, the relative weight assigned to the challenge and the magnitude of the evaluation change are greater with negative initial evaluations than with positive initial evaluations.

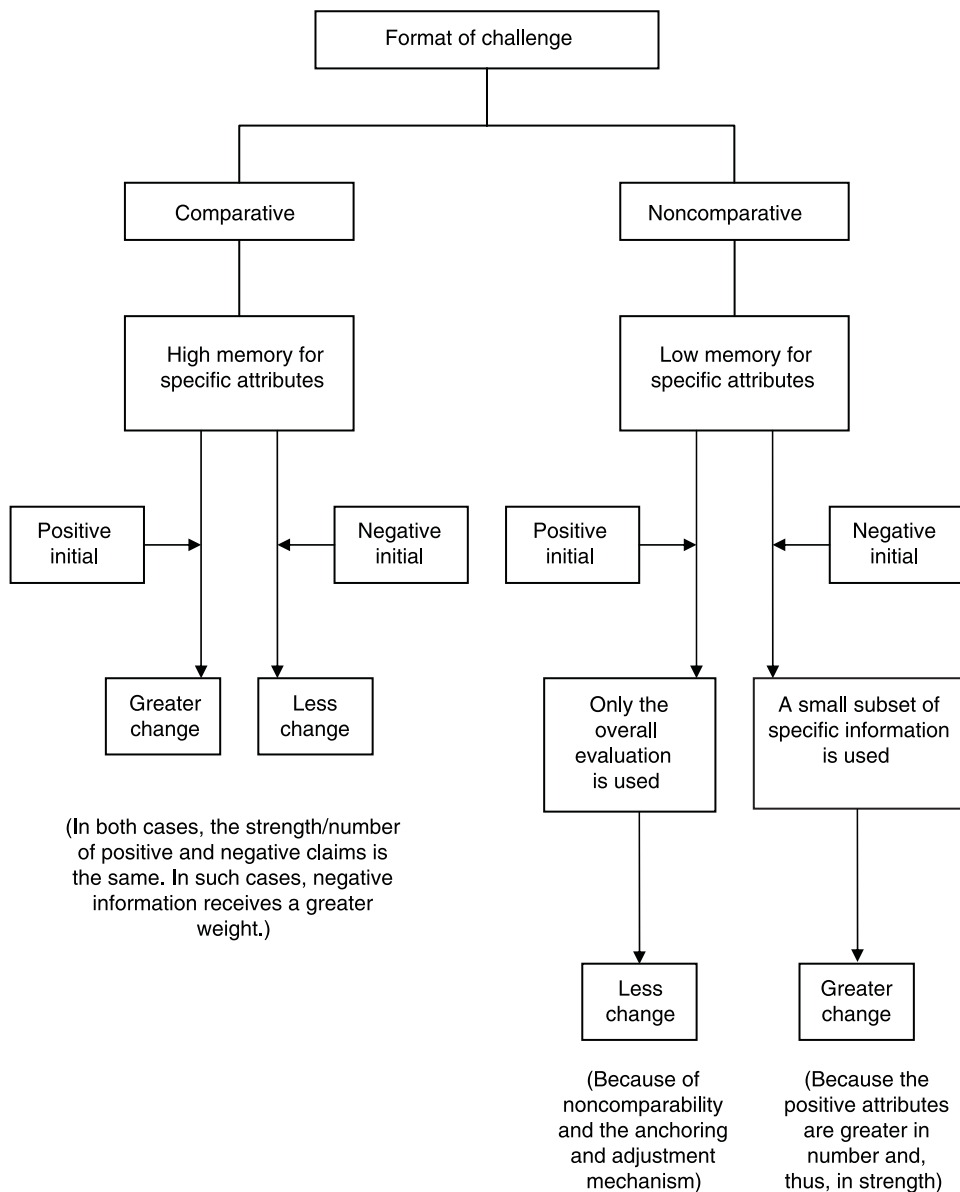
The early findings in the information integration paradigm (Anderson 1974; Lynch 1979) suggest that in a stimulus-based context, judgments based on negative and subsequent positive initial information undergo less change than do judgments based on positive and subsequent negative initial information that is in a noncomparative format. In H₃, we predict a reversal of this effect in a memory-based judgment context.

The foregoing discussion also leads to an important prediction from a marketer’s viewpoint. Previous research has found that comparative challenges lead to greater revision in the positive initial evaluations than do noncomparative challenges. However, when the initial evaluations are negative, noncomparative challenges cause greater revision in the initial evaluations than do comparative challenges. Thus:

H₄: When the initial evaluation is negative, a noncomparative challenge format causes greater revision than does a comparative format, which reverses prior findings of the effect of the format of challenge on positive initial evaluations.

Figure 1 presents our conceptualization in a flow diagram. Next, we report the results from four experiments. Experiment 1 tests our assumptions about differential

Figure 1
THEORETICAL FRAMEWORK



accessibility of specific attributes between positive- and negative-initial-evaluation conditions, as we articulated in H_1 . Experiment 2 provides a test of H_2 , H_3 , and H_4 , the main hypotheses of interest. Both Experiments 3 and 4 replicate the findings of Experiment 2 and help rule out two potential alternative explanations for the results reported in Experiment 2.

EXPERIMENT 1

In Experiment 1, 194 participants completed the tasks in exchange for monetary compensation. Because the responses of 21 participants were inconsistent with the information provided (e.g., after receiving negative initial information about the target, they evaluated the brand positively), we excluded their data. The experiment employed a 2×2 design. The first factor manipulated the valence of the initial information (positive versus negative), and the second manipulated the nature of the judgment task (evaluation versus recognition of the claims).

The participants first received information about a fictitious pen brand, Elegance 3, which served as the target. The valence of the initial information was manipulated at this time. Half of the participants received four positive claims about the target object, and the other half received four negative claims. In addition to the target brand information, participants also received information about three real products (e.g., Nike shoes). Participants in either of the valence conditions received two claims for each of the three real products. The information for these brands always had neutral evaluative implications (e.g., Nike changed its retail store premises in Shanghai, China). After participants received the claims about Elegance 3 and the three real filler products, there was a 60-minute delay during which participants completed several unrelated tasks. After this delay, the judgment-task manipulation was administered. Half of the participants were asked to evaluate the four products, and the other half were administered a claim-recognition task. Participants in the evaluation condition were asked to press 1 if they liked the product or 0 if they disliked it. The target brand always appeared third. Participants in the recognition condition were asked to press 1 if the claim that appeared on the screen was the one they received earlier about the product and 0 if otherwise. The target brand's information always appeared third. Within this condition, each quarter of the group received one of the four claims. For both the evaluation and the recognition tasks, response times were recorded and served as the dependent measure. For the recognition task, because there was no difference in response speed as a function of the specific claim, the data were pooled before the analyses.

Results

As expected, we obtained a significant valence \times judgment task interaction ($F(1, 169) = 6.77, p < .01$). We predicted that for the participants under the negative-initial-information condition, there would be no difference between the specific attribute information and the overall evaluation in terms of accessibility. This was indeed the case ($M_{\text{attributes}} = 6972$ milliseconds, $M_{\text{evaluation}} = 7807$ milliseconds; $F(1, 169) = 1.29, p > .25$). As predicted, we obtained a different pattern for the positive initial information. That is, the accessibility of the overall evaluation was

greater (7483 milliseconds) than it was for the specific attributes (9379 milliseconds; $F(1, 169) = 6.42, p < .02$).

Discussion

These results support the assumptions we articulated in H_1 ; that is, under the negative-initial-information condition, there is no difference in terms of accessibility between the specific attributes and the overall evaluations. Under the positive-initial-information condition, the overall evaluations are more accessible than are the specific attributes. In the subsequent experiments, we examine the implications of these effects on changes in evaluations.

EXPERIMENT 2

Experiment 2 tested H_2 , H_3 , and H_4 . In addition, we also verified our reasoning about the motivation to recall claims induced by comparative versus noncomparative challenges.

Method

Participants and design. One hundred seventy-six respondents participated in Experiment 2 to receive course credit. They were randomly assigned to one of four (2 [initial information] $\times 2$ [format of the challenge]) between-subjects conditions in our factorial design.

Procedure. The experimental procedure of this study closely followed the procedure that Muthukrishnan, Pham, and Mungale (1999) use. Experiment 2 involved two sessions conducted 90 minutes apart. In the first session, participants received initial information about a fictitious pen and reported their evaluations on three scales, as well as their confidence in these evaluations. Ninety minutes later, after an interval with several filler tasks, participants received additional information about the pen that challenged their initial evaluation based on the earlier information. The challenge information was presented in either a noncomparative or a comparative format. Regardless of the format, the additional information (challenge) always conflicted with the initial information in terms of the evaluative implication of the information presented. That is, participants who received positive initial information always received negative challenge information, and vice versa. After receiving the additional information, participants again rated the target pen on the same three scales, responded to a scale about the usefulness of the challenge, and expressed their confidence in their latter evaluations. Immediately after providing these ratings, participants were given 1 minute to recall as many of the claims about the pen they had received 90 minutes earlier and to write them down.

Manipulations. We constructed two sets of four attributes on the basis of several pretests. One set (Set A) consisted of the attributes benzene tip, comfortable grip, smear-proof, quick-drying ink, and slope design for optimal balancing. The other set (Set B) consisted of the attributes new ink polymer, special erasing feature, variety in printing line, and special feature for writing at any angle. For half of the participants, the initial information consisted of the Set A attributes, and the challenge information was provided on the Set B attributes. For the other half, the initial information was on the Set B attributes, and the challenge was on the Set A attributes. We manipulated the initial information by presenting four positive claims about the pen to half of the participants and four negative claims to the other half.

For example, a positive claim stated, “The benzene tip of Elegance 3 facilitates smooth, no-skip writing,” and a negative claim stated, “Elegance 3’s erasing features do not eliminate smudges properly.”

We calibrated the evaluative implications of the positive and negative versions of each set using a pretest. The results of the pretest showed that on an 11-point scale, the means in the positive-information conditions were 8.12 and 7.94. The corresponding means in the negative-information conditions were 4.15 and 4.02. The difference between the positive and the negative condition means was significant ($p < .001$), but the differences between the two sets of a given valence were not different ($F < 1$). Moreover, the means showed that the deviations from the midpoint of the scale (6) were, on average, 2.03 in the positive condition and 1.92 in the negative condition ($F < 1$). Thus, the evaluative implication of the information varied as we wanted it to. In the same pretest, we also obtained (on an 11-point scale anchored by “not at all credible/extremely credible”) the credibility ratings of the two newsmagazines that served as the sources of the initial information and the challenge. The two sources did not vary in terms of credibility (Source 1 = 7.91, Source 2 = 8.00; $F < 1$). A second pretest ensured that the claims were equal in terms of importance (mean rating on an 11-point scale = 8.70 and 8.73, respectively; $F < 1$).

For the challenge, participants in the positive-initial-information condition were subsequently exposed to four negative claims, and participants in the negative-initial-information condition were exposed to four positive claims. In these conditions, the claims were presented in either a noncomparative or a comparative format. The noncomparative format provided information about the target brand only, whereas the comparative format presented information in such a way that the target brand was compared with a competitor (another fictitious pen named Zebra; as established in a pretest, these two brand names did not differ in terms of participants’ liking) on each of the four attributes. For example, a noncomparative claim stated, “The special erasing feature of Elegance 3 eliminates smudges,” and the equivalent comparative claim stated, “Because of its special erasing feature, Elegance 3 eliminates smudges more effectively than does Zebra.” Depending on the evaluative implication of the initial information, these comparisons portrayed the target brand as either worse or better than the competitor on each of the four attributes. The two challenge formats did not vary in their evaluative implication under negative information (comparative = 3.91, noncomparative = 3.95; $F < 1$) or under positive information (comparative = 7.86, noncomparative = 7.63; $F < 1$).

Thus, in all the experimental conditions, this more recent information “challenged” the previously formed evaluations. Moreover, in all the conditions, the challenge claims were on different attribute dimensions than was the initial information. However, these claims were equally as important as the claims contained in the initial information. We counterbalanced the initial information and the challenge claims. That is, the attributes that figured in the initial information were the attributes of the challenge for the other half of the group, and vice versa. In addition, we counterbalanced the sources of the initial information and the challenge (two newsmagazines). Because these counterbalancing factors did not have any effect, we do not discuss them further. We also tested the strength of the noncomparative

versus the comparative challenge claims in terms of the evaluative extremity in another pretest and found no difference between these two formats ($F < 1$).

Dependent variables. We measured the pre- and postchallenge evaluations (Time 1 and Time 2 evaluations) of the target pen on three 11-point scales anchored by “bad” (1) and “good” (11), “dislike” and “like,” and “unfavorable” and “favorable” (Cronbach’s $\alpha = .93$). The dependent variable of interest was the extent of change in evaluations between Time 1 and Time 2, ignoring the direction of change (i.e., positive or negative). Thus, for positive initial evaluations, we computed change by subtracting Time 2 evaluations from Time 1 evaluations. For negative initial evaluations, the change in magnitude equaled the Time 1 evaluations subtracted from the Time 2 evaluations. Participants also reported their confidence in their evaluations on an 11-point scale anchored by “not at all confident” (1) and “extremely confident” (11). In addition, participants responded to an 11-point usefulness or diagnosticity scale: “In determining my most recent evaluation of the pen, the information I received 90 minutes ago was more useful than the information I received most recently/the information I received most recently was more useful than the information I received 90 minutes ago.” This is a surrogate measure of the weight accorded to the initial information and the information contained in the challenge. We tested the mediational role of this measure in the effects of valence of initial information and the challenge format on the magnitude of the evaluation change. Finally, two judges who were blind to the hypotheses classified participants’ recall of the claims that were part of the initial information as accurate or inaccurate; there was 94% agreement, and a third judge decided the accuracy of the recalled claims on which there was no agreement. For each participant, the recall score was the number of claims recalled accurately.

Results

Manipulation check. We submitted Time 1 evaluations to an evaluative implication of initial information \times challenge format analysis of variance. As we expected, the evaluative implication of the initial information (hereinafter referred to as valence) had a large effect on the Time 1 evaluations ($M_{\text{positive}} = 7.75$, $M_{\text{negative}} = 3.78$; $F(1, 172) = 354.4$, $p < .001$; $\Omega^2 = .667$), suggesting that our valence manipulation was successful. In addition, the conditions did not vary in terms of confidence in the Time 1 evaluations (for the means, see Table 1; for all three effects, $F_s < 1$, $\Omega^2 < .0005$). This indicates that our manipulation at Time 1 influenced the evaluative direction but did not influence the confidence with which the evaluation was held.

Evaluation revision. We submitted data on the evaluation revision to a 2 (initial evaluation valence) \times 2 (challenge format) analysis of variance. There was a significant valence \times challenge interaction ($F(1, 172) = 31.74$, $p < .001$; for the means, see Table 1). The follow-up analyses by type of challenge revealed that under noncomparative challenges, the magnitude of change was greater with the negative initial evaluations (2.10) than with the positive initial evaluations (1.18; $F(1, 172) = 10.64$, $p < .01$). However, under comparative challenges, positive initial evaluations underwent greater change (2.53) than did negative initial evaluations (1.21; $F(1, 172) = 22.20$, $p < .01$). Thus, we obtained support for both H_2 and H_3 .

Table 1
EVALUATION CHANGE, CONFIDENCE, WEIGHT ASSIGNED TO THE CHALLENGE, AND RECALL IN EXPERIMENT 2

Dependent Variable	Negative Initial		Positive Initial	
	Noncomparative	Comparative	Noncomparative	Comparative
Time 1 evaluation	3.84	3.72	7.71	7.80
Time 2 evaluation	5.94	4.93	6.52	5.27
Change (in absolute units)	2.10	1.21	1.18	2.52
Confidence at Time 2	6.25	6.84	6.05	7.13
Relative weight given to the challenge	6.00	4.07	3.93	6.62
Recall	2.13	2.89	1.07	2.11

Confidence in the revised evaluation. The amount of information and the ability to evaluate (i.e., the commensurability) it should influence confidence. A comparative challenge contains not only a greater amount of information but also information that is easier to evaluate (Fox and Tversky 1995; Hsee 1996; Muthukrishnan, Pham, and Mungale 1999), and thus it should lead to more confidently held revised judgments. This was borne out by the data ($F(1, 172) = 8.74, p < .01$; for the means, see Table 1).

Recall. The recall data offered support for the proposed underlying processes. As we predicted and consistent with the results of Experiment 1, recall is greater for the negative claims than for the positive claims (2.51 versus 1.59; $F(1, 172) = 38.9, p < .001$). In addition, the format of the challenge had a significant effect on recall ($F(1, 172) = 36.82, p < .001$; $M_{\text{comparative}} = 2.50, M_{\text{noncomparative}} = 1.60$). The valence of the initial evaluation \times challenge format interaction was not significant ($F < 1$).

We proposed several factors that account for the greater revision of positive initial evaluations under a comparative challenge. Therefore, we did not expect there to be a significant correlation between recall and the magnitude of evaluation change for positive initial evaluations under a comparative challenge. The results supported our conjecture ($r = -.03, p > .80$). Under the negative-initial-evaluation condition, the process we proposed suggests that greater recall should result in less revision. Indeed, we obtained a significant, negative correlation ($r = -.40, p < .001$) for the negative initial evaluations. However, these results should be viewed with caution because the experimental task might have resulted in recall of greater information than was actually used at the time of evaluation revision.

Weight assigned to the challenge. With respect to the dependent variable of the relative weight assigned to the challenge (versus the initial information), as expected, we obtained a significant valence of the initial evaluation \times challenge format interaction ($F(1, 172) = 38.22, p < .001$; for the means, see Table 1). Consistent with expectations, when the challenge was comparative, it received greater weight when the initial evaluation was positive ($F(1, 172) = 23.57, p < .001$; $M_{\text{neg}} = 4.07, M_{\text{pos}} = 6.62$). In contrast, as we expected, when the challenge format was noncomparative, the challenge received greater weight when the initial evaluation was negative ($F(1, 172) = 15.14, p < .001$; $M_{\text{neg}} = 6.00, M_{\text{pos}} = 3.93$). Moreover, whereas the relative weight assigned to the challenge and the recall of the initial information were correlated when the initial information was negative ($r = -.46, p < .001$), there was only a weak correlation between these two variables when the initial information was positive, and at best, the correlation can be described as approaching significance ($r = .168, p > .11$).

This finding suggests that with negative initial information, the weight or diagnosticity assigned to the challenge is purely a function of how much initial information was recalled. For the positive initial information, however, the diagnosticity of the challenge is acquired from several sources, such as its negativity and evaluability (in comparative challenges).

We predicted that the effects of the valence of initial information on evaluation change under both comparative and noncomparative challenges would be mediated by the relative weight accorded to the initial information versus the challenge. We performed a series of analyses that Baron and Kenny (1986) suggest to test the mediational role of the weight accorded to the challenge versus the initial information. When we used the relative weight accorded to the challenge versus the initial information as a covariate, the effect of the valence of the initial evaluation on the magnitude of change was reduced to nonsignificance under both the comparative challenge ($F(1, 171) = 1.35, p > .25$) and the noncomparative challenge ($F < 1$). Furthermore, the covariate was significant for both the comparative ($F(1, 171) = 97.6, p < .001$) and the noncomparative ($F(1, 171) = 135.9, p < .0001$) challenges. Thus, the relative weight assigned to the challenge mediates the effect of the valence of the initial evaluation on judgment revision for both comparative and noncomparative challenges.

In H_4 , we offered an important prediction that is highly relevant for marketers about the differential effects of comparative versus noncomparative challenges for negative versus positive evaluations. Because our focus was on the differences between negative and positive initial evaluations, it is worth considering the simple effect of the format of the challenge under each level of valence of the initial information (to test H_4). Under positive initial information, we expected that the comparative format would cause greater evaluation revision than the noncomparative challenge, as prior research has reported (Muthukrishnan, Pham, and Mungale 1999). Our results support this prediction (2.52 in the comparative versus 1.18 in the noncomparative condition; $F(1, 172) = 23.06, p < .001$). The effect is due to poor recall of prior specific attribute information at the time of revising judgments, combined with the salience and strength of the more convincing reasons offered by the comparative challenge.

Under negative initial information, a comparative challenge increases the participant's motivation to recall prior information. Almost all the information received earlier is recalled and evaluated against the positive challenge information. As we mentioned previously, because of the tendency to weight negative initial information more heavily, we expected that consumers would exhibit only a moderate

revision of the judgment formed earlier. Because a noncomparative challenge does not induce a substantial recall of the negative initial information, the greater amount of positive information contained in the challenge receives a greater weight. Therefore, under this condition, we expected that there would be a larger revision in the initial evaluation. Note that for negative initial evaluations, we predicted a reversal of the effect of the challenge format reported in prior research. The results support this prediction (1.21 in the comparative versus 2.10 in the noncomparative condition; $F(1, 172) = 9.99, p < .01$). Overall, the results support H_4 (for the pattern of interaction, see Figure 2).

Discussion

In this experiment, we found that under a noncomparative challenge, the magnitude of change was greater for negative initial evaluations than for positive initial evaluations, but under a comparative challenge, positive initial evaluations underwent greater changes. These results, along with the results pertaining to the underlying process, suggest that the observed interaction for judgment revision depends on the type and magnitude of the previously received (initial) information that is compared with the information presented in the challenge, which is influenced in predictable ways by the evaluative implication of the initial information and the format of the challenge. It is worth noting that our results reverse the findings of the information integration research paradigm (Anderson 1974; Lynch 1979). Although those findings were valid in a stimulus-based judgmental context, our findings pertain to memory-based judgmental contexts.

Although our data are consistent with our theorizing, we can also suggest two alternative explanations for the results. First, in this experiment, the valence of the challenge was

always opposite that of the initial information. Thus, our results could have been driven by the valence of the challenge information and not the valence of the initial information, as we suggest. Second, an alternative explanation for the results we obtained in the negative initial information–comparative challenge cell could be that participants in the comparative condition completely discounted the comparisons contained in the challenge in which the target is featured as superior by thinking that the comparison pen, which is worse than the target pen, must be really bad if it is worse than a pen about which they already have a negative opinion. We designed Experiments 3 and 4 to replicate the results of Experiment 2 and to rule out the two alternative explanations.

EXPERIMENT 3

We designed Experiment 3 to rule out the alternative explanation that the valence of the additional information, not the valence of the initial information, caused the effects obtained in Experiment 2. In a $2 \times 2 \times 2$ design, in addition to the two factors manipulated in Experiment 2, we manipulated the valence of the challenge (positive or negative) to determine whether the effects we obtained in Experiment 2 held even if we held constant the valence of the challenge (either positive or negative). Thus, although we ran a three-factor experiment, our objective was to test H_2 in two (partitioned according to the levels of valence) 2×2 experiments.

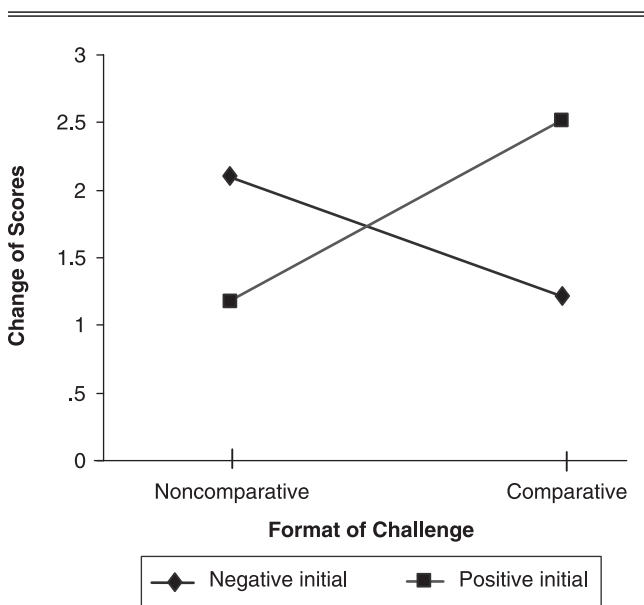
Participants who received Set A attributes initially received Set B information after a delay. We manipulated the valence of the initial information (positive or negative) and the format of the challenge (noncomparative or comparative) in exactly the same way as in Experiment 2. For half of the participants, the later additional information and the initial information agreed in terms of valence (positive initial followed by positive additional information and negative initial followed by negative information). For the other half, as in Experiment 2, the additional information challenged the initial information (positive initial followed by negative additional, and vice versa). The remainder of the procedure and the dependent variables were exactly the same as in Experiment 2. Two hundred twelve participants, who participated in this experiment to earn course credit, were randomly assigned to one of the eight cells.

Results

We analyzed the data separately for each level of the valence of the challenge. When the challenge was positive, the initial information \times challenge type interaction was significant ($F(1, 96) = 4.98, p < .03$). The format of the challenge had a significant effect on evaluation change when the initial information was negative ($M_{\text{comparative}} = 1.64, M_{\text{noncomparative}} = 2.55; F(1, 96) = 7.15$). However, the effect was not significant when the initial information was positive ($M_{\text{comparative}} = 1.79, M_{\text{noncomparative}} = 1.69; F < 1$). Similarly, under the negative challenge, the initial information \times challenge type interaction was significant ($F(1, 108) = 5.44, p < .03$). When the initial information was negative, there was no difference between comparative (1.53) and noncomparative (1.56) challenges ($F < 1$). However, the difference was significant when the initial information was positive ($M_{\text{comparative}} = 3.11, M_{\text{noncomparative}} = 1.86; F(1, 108) = 12.05$; for all the means, see Table 2; for the patterns of interaction, see Figure 3, Panels A and B).

Figure 2

THE EFFECTS OF INITIAL INFORMATION AND CHALLENGE FORMAT ON EVALUATION CHANGE (EXPERIMENT 2)



Notes: For the positive initial evaluations, a comparative challenge produces greater evaluation change. However, for the negative initial evaluations, a noncomparative challenge causes greater evaluation change.

Table 2
EVALUATIONS AND EVALUATION CHANGE IN EXPERIMENT 3

<i>Valence of Additional Information: Positive</i>				
	<i>Noncomparative Challenge</i>		<i>Comparative Challenge</i>	
	<i>Positive Initial</i>	<i>Negative Initial</i>	<i>Positive Initial</i>	<i>Negative Initial</i>
Evaluation at Time 1	7.48	4.28	7.59	4.22
Evaluation at Time 2	9.17	6.83	9.38	5.85
Change	1.69	2.55	1.79	1.63
<i>Valence of Additional Information: Negative</i>				
	<i>Noncomparative Challenge</i>		<i>Comparative Challenge</i>	
	<i>Positive Initial</i>	<i>Negative Initial</i>	<i>Positive Initial</i>	<i>Negative Initial</i>
Evaluation at Time 1	7.63	4.40	7.50	4.27
Evaluation at Time 2	5.76	2.84	4.39	2.74
Change	1.86	1.56	3.11	1.54

Discussion

In this experiment, not only did we replicate the effects we obtained in Experiment 2, but we also ruled out an alternative explanation. In Experiment 2, there was a deliberate confound between the valence of the initial information and that of the challenge. To rule out the alternative interpretation that the results were not driven by the difference in valence, we held the valence of the additional information constant. For both positive and negative additional information, we found that the effects of the initial information and the challenge format followed the same pattern as those in Experiment 2.

EXPERIMENT 4

The purpose of Experiment 4 was to rule out the second alternative explanation of the findings from Experiment 2. In designing this experiment, we asked whether the result obtained in the negative initial information–comparative challenge condition in Experiment 2 was due to the discounting of the comparisons contained in the challenge. If this alternative explanation is valid, adding positive but relatively less important attributes in the comparative challenge should not make any difference in terms of the degree of evaluation change, because the claims that compare the target pen with the inferior competitor will be discounted. Conversely, if our theory that people compare the information contained in the challenge with the recalled initial information is valid, offering more positive attributes in the challenge should create greater change in the positive direction.

Method

The general procedure of this experiment was similar to that of Experiment 2. However, the negative initial information–comparative challenge condition of Experiment 2 was the only condition we retained. Within this condition, at Time 2, we manipulated the number of claims contained in the challenge. For half of the participants, the challenge that compared the target with a competitor contained four claims, as in Experiment 2. For the other half, the challenge contained seven claims (three additional claims beyond the four claims given in the other condition). To offer a conservative test, we chose the additional three

attributes to be less important than the other attributes in either of the sets in Experiment 2. These additional attributes were the number of different colors the pen came in, the availability of refills at all stores, and the ease or difficulty of opening the packages of the pens. In this experiment, we did not counterbalance the initial claims and the challenge claims. Forty-eight participants took part in the experiment to receive course credit.

Results and Discussion

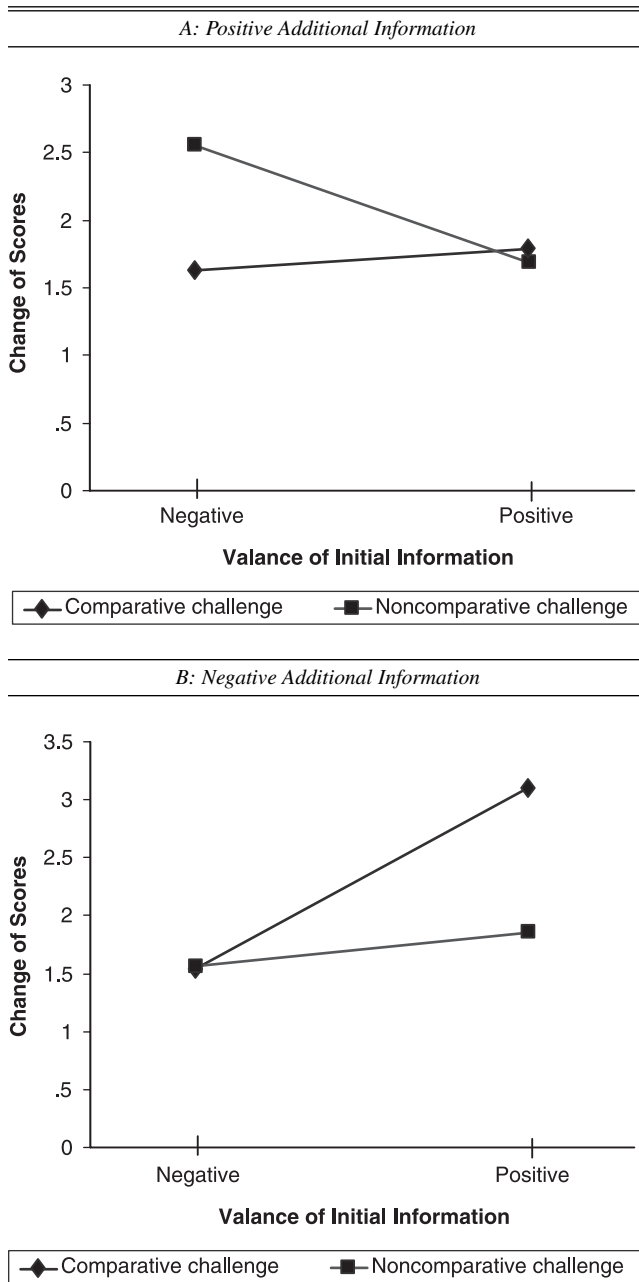
Consistent with our conceptualization and in contrast to what would be expected from the alternative explanation we outlined previously, the two conditions did not vary in terms of the initial evaluation ($M_{\text{four claims}} = 3.89$, $M_{\text{seven claims}} = 3.98$; $F < 1$) or in terms of the participants' confidence in the initial evaluation ($M_{\text{four claims}} = 5.69$, $M_{\text{seven claims}} = 5.59$; $F < 1$). However, these two conditions varied in terms of the magnitude of evaluation change ($M_{\text{four claims}} = 1.78$, $M_{\text{seven claims}} = 2.62$; $F(1, 46) = 4.52$, $p < .05$) and in terms of the participants' confidence in the evaluation at Time 2 ($M_{\text{four claims}} = 5.54$, $M_{\text{seven claims}} = 6.73$; $F(1, 46) = 7.12$, $p < .02$). In addition, there was a significant difference between the two conditions in terms of the relative weight assigned to the challenge ($M_{\text{four claims}} = 5.38$, $M_{\text{seven claims}} = 7.22$; $F(1, 46) = 5.93$, $p < .02$). The inclusion of the relative weight assigned to the challenge as a covariate caused the previously significant effect of the number of claims on the magnitude of evaluation change to become nonsignificant ($F < 1$), but the covariate was significant ($F(1, 45) = 44.4$, $p < .001$). Thus, the data are consistent with the process hypothesized here and inconsistent with the alternative explanation.

GENERAL DISCUSSION

As the Food Lion example we discussed previously suggests, any competitive marketplace gives consumers many opportunities to reconsider their evaluations. Such opportunities exist whenever consumers are exposed to, for example, the brand's own advertising, competitor advertising, word-of-mouth information about other consumers' experiences with the brand, and the results from industry satisfaction surveys. Each represents a potential challenge to the target brand.

Figure 3

THE EFFECTS OF INITIAL INFORMATION AND CHALLENGE FORMAT ON EVALUATION CHANGE (EXPERIMENT 3)



Notes: Panels A and B reveal that the effects of the initial information and the challenge format demonstrated in Experiment 2 (Figure 2) hold only when the initial evaluation and the information contained in the challenge are of the opposite valence.

How evaluations are updated in the face of such challenges is an important issue in consumer behavior and psychology. Traditionally, the topic of evaluation revision has been examined from either a motivational or an attitude strength perspective (Petty, Haugtvedt, and Smith 1995; Sherif and Sherif 1967; Wood 1982). A focus on these variables has enriched the understanding of the phenomenon of evaluation revision. In recent years, the compatibility between the informational basis of the attitude (cognitive

versus affective) and that of the challenge has also been the focus of research (Edwards 1990; Fabrigar and Petty 1999; Millar and Millar 1990). A more recent development in research on this topic has been an emphasis on the contextual factors, such as the format of the challenge (Muthukrishnan, Pham, and Mungale 1999; Muthukrishnan and Ramaswami 1999; Pham and Muthukrishnan 2002).

In the current research, we offer important extensions to this approach by examining for the first time the differences underlying the revision of negative and positive evaluations in memory-based contexts. We propose that diagnosticity assessments of the initial information and the challenge differ as a function of the evaluative implication of the initial information and the characteristics of the challenge, which determines the extent of the evaluation revision. The specific issues we address in this research, the interaction between the evaluative implication of the initial evaluation and the challenge format, have many notable and significant marketing implications, but these have not been examined in previous research, which has exclusively focused on the revision of positive initial evaluations.

To summarize our key findings, in Experiment 2, under a comparative challenge, positive initial evaluations undergo greater revision than do negative evaluations. However, this effect is reversed under a noncomparative challenge. The most important finding from a practitioner perspective is that comparative challenges are more effective than noncomparative challenges in causing revisions in positive initial evaluations, but noncomparative challenges cause greater revision in negative initial evaluations. In Experiment 1, we found clear evidence consistent with assumptions underlying our proposed mechanism. Experiments 3 and 4 ruled out potential alternative explanations for the results we obtained in Experiment 2.

We proposed two mechanisms on which our hypotheses are founded. First, we proposed that negative specific information is more accessible than positive specific information. We found support for this in the results from Experiments 1 and 2. Second, comparative challenges induce consumers to recall a greater amount of information learned previously. This proposed mechanism is novel. It goes beyond prior research that reports that people are more likely to perceive the information they received as incomplete. It specifies a particular outcome of this greater sensitivity—namely, increased recall. Although researchers have identified several other effects of comparative advertising (for a review, see Grewal et al. 1997), the effect we found enabled us to identify situations in which comparative advertising yields greater judgment revisions than noncomparative advertising, and vice versa.

Research on negativity emphasizes the salience of negative information. The logical conclusion from this research is that negative evaluations are more difficult to change than positive evaluations. Our research findings identify the conditions under which this conclusion is valid. More important, we also identified conditions under which the opposite is true—that is, when positive evaluations are more difficult to change.

We proposed a general search and comparison process with the objective of assessing the diagnosticity of the challenge in relation to the initial information. The factors we examined in this study determine which of the several pieces of information received earlier are used in the com-

parison process and which of the inputs received greater weight in judgments. We also proposed that the weight assigned to the challenge is determined by different processes in the negative- versus positive-initial-information conditions. Under the negative-initial-information condition, this weight is determined by the amount of initial information recalled; under the positive-initial-information condition, recall plays a minimal role. We believe that these findings offer important insights into the psychology of judgment persistence.

Note that across all the conditions, the initial evaluations in our experiments were not strong in terms of dimensions such as importance and chronic accessibility, because the target category in all four experiments was pens, and the target brand was always a fictitious brand. Therefore, our findings cannot be generalized to contexts involving strong initial attitudes. Similarly, we do not know whether these findings would apply to evaluations of more consequential products. These are questions for further research.

The variables we consider are ecologically valid. It is not uncommon for consumers to receive negative or positive information about a brand from the brand owner, from a competitor, from a neutral source, or through word of mouth, as the Food Lion example shows. The initial and challenge sets of information may pertain to different attributes. Furthermore, the additional information may be in a comparative or a noncomparative format. To the best of our knowledge, the joint effects of these variables on evaluation revision have not been investigated. Our findings may help marketers determine what type of advertisements they should use in different contexts. To change a negative initial evaluation, it may be better to create a noncomparative advertisement.

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