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The authors propose a model of judgment revision, which posits that counterattitudinal challenges to a brand initially trigger a memory search for proattitudinal information about the brand. The proattitudinal information accessible from memory is then aligned with information contained in the challenge in order to assess the diagnosticity of the challenge, that is, how much it "damages" the retrieved brand information. If the challenge is not perceived to be diagnostic, the retrieved brand information is used to defend the previous attitudinal position. If the challenge is perceived to be diagnostic, judgments are revised in direct proportion to the amount of damage identified in the alignment phase. Four experiments test the model's predictions about the influence of abstract versus attribute-specific brand positioning on judgment revision. Consistent with the model's predictions, results show that compared with attribute-specific positioning, abstract positioning will result in less judgment revision when the challenge is specific (e.g., a direct attack about particular attributes of the brand) and the initial brand evaluation is based on limited learning of the positioning information. When the challenge is general (e.g., a blanket, unspecific negative statement about the brand), abstract positioning will result in greater judgment revision than attribute-specific positioning will. The differential effectiveness of abstract versus attribute-specific positioning is mediated by (1) the accessibility in memory of the positioning information at the time of the challenge and (2) the perceived diagnosticity of the challenge after alignment with the retrieved brand information.

Search and Alignment in Judgment Revision: Implications for Brand Positioning

Marketers of products with multiple desirable characteristics face a delicate decision. Should they select *attribute-specific positioning* and emphasize the product's specific characteristics, attributes, and features (e.g., 6-cylinder, 2800-ccm engine; 0–60 mph in 7.5 seconds)? Or should they select *abstract positioning* and position the product along more abstract statements that summarize its characteristics (e.g., "the ultimate driving machine")? This classic dilemma has received surprisingly little theoretical and empirical analysis. It is therefore unclear which type of positioning will produce more favorable brand evaluations. It is even less clear which type of positioning will generate brand evaluations that are more resistant to challenges.

This research investigates how consumers revise brand evaluations that were originally based on abstract versus attribute-specific positioning platforms when new information that undermines the brand's position becomes available. This issue is critical in competitive environments, in which any brand position is likely to be challenged, whether by news reports, word of mouth, or competitor messages. We propose a model of judgment revision upon challenge that conceptualizes this process as an internal search for information about the challenged brand, followed by an alignment of the challenging information with the accessible brand information and the generation of a revised judgment based on the "damage" uncovered by this alignment. We derive the model's predictions about the effects of abstract and attribute-specific positioning platforms on judgmental resistance and test these predictions in four experiments.

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INFORMATION ABSTRACTION AND JUDGMENT REVISION

Mental Representations in Judgment Revision

Certain models of judgment revision postulate that when new information challenges a previous judgment, the previous judgment is directly incorporated into the revised judgment along with the new information. The informational basis of the previous judgment is assumed to have little influence. This postulate is most explicit in anchoring-and-adjustment models of revision (e.g., Hogarth and Einhorn 1992), which posit that the prior judgment serves as an anchor that is then integrated with the scale value of the new information. In these models, the magnitude of revision is simply a function of the scale value of the new information relative to the prior evaluation. Judgment-retrieval models of social impression (e.g., Lingle and Ostrom 1979) make a similar assumption.

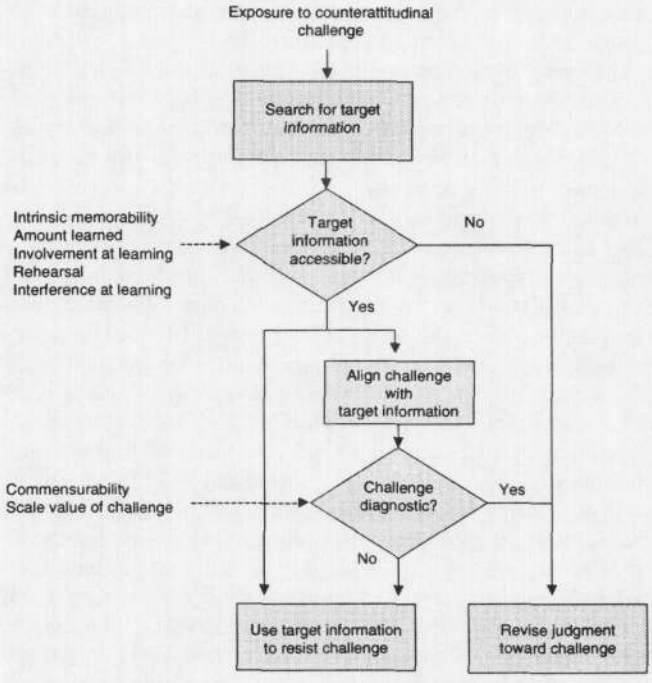
We argue that the informational basis of the previous judgment may have a stronger influence on the subsequent judgment than has been assumed in these previous models. For example, Fabrigar and Petty (1999) recently have found that the amount of attitude revision produced by new information that is either cognitive or affective (i.e., propositional versus sensory–experiential) depends on the informational basis of the original attitude. Attitudes that are affect based are more sensitive to new information that is affective, whereas attitudes that are cognition based are more sensitive to new information that is cognitive. Lord and Lepper (1999) argue that the mental representation of the attitudinal object is a central determinant of an attitude's consistency over time and situations. According to their attitude representation theory, attitudes will be consistent when information about the attitudinal object (the target) that is available from the immediate perceptual environment closely matches the attitude holder's subjective representation of this object. Attitudes will be inconsistent when the perceptual information and subjective representation do not match. We propose a model of judgment revision that is consistent with the general tenets of this theory but is more specifically geared to explaining the mechanisms of revision. This model helps explain many findings about judgment revision, including those of Fabrigar and Petty (1999).

A Search-and-Alignment Model of Judgment Revision

Refutational search. As illustrated in Figure 1, we propose that upon receiving new information that challenges a prior evaluation, people first engage in an active memory search for information that supports the prior evaluation (e.g., Kunda 1990). This search can be thought of as a quest for "ammunition" to defend the prior judgmental position (see McGuire 1964). For example, Edwards and Smith (1996) find that people take significantly longer to evaluate arguments that are incompatible with their prior opinions than to evaluate arguments that are compatible. Furthermore, when evaluating incompatible arguments, people tend to verbalize many more refutational thoughts (consistent with their prior opinions) than supportive thoughts (consistent with the incompatible argument). These findings suggest that exposure to arguments that are incompatible with a prior position triggers an effortful, disconfirmatory search of memory for materials that refute the new information.

Because of this refutational search, any factors that increase the accessibility of proattitudinal information at the time of the challenge will generally decrease the magnitude of judgment revision. This proposition accommodates a variety of findings in the attitude strength literature. Attitudes have been found to be more resistant to challenges when (1) the initial attitude is based on a large amount of proattitudinal information (e.g., Wood 1982), (2) the proattitudinal information has been mentally rehearsed (McGuire 1964), (3) the proattitudinal information has been elaborated on (Haugtvedt and Wegener 1994), and (4) the proattitudinal information has been learned without interference (Muthukrishnan, Pham, and Mungalé 2001). Sheer amount, rehearsal, elaboration, and absence of interference all have the effect of increasing the accessibility of proattitudinal information at the time of judgment revision. Our studies show that the intrinsic memorability of the proattitudinal information—another determinant of its accessibility at the time of revision—has a similar effect on judgmental resistance.

Figure 1
A SEARCH-AND-ALIGNMENT MODEL OF REVISION



Alignment and damage assessment. After it has been retrieved, the proattitudinal information is used not only to defend the prior position but also to evaluate the diagnosticity of the challenge. Specifically, the challenging information will be mentally compared with the accessible proattitudinal information to assess how much the former "damages" the latter. This diagnosticity assessment resembles the process of structural alignment recently documented in studies of comparison and choice (e.g., Medin, Goldstone, and Markman 1995; Zhang and Markman 1998). These studies indicate that mental comparisons between objects (e.g., two brands of cars) invoke three types of relationships: (1) commonalities (e.g., Car A and Car B are both Japanese); (2) "alignable" (or commensurable) differences along a common dimension (e.g., Car A gives 25 mpg and Car B gives 30 mpg); and (3) "nonalignable" (or noncom-

mensurable) differences, which pertain to unique features of the objects (e.g., Car A has driver's-side airbags and Car B has a power-operated rooftop). Compared with commonalities and nonalignable differences, alignable differences often receive a disproportionate weight in judgment and choice (e.g., Markman and Medin 1995).

Likewise, the evaluation of a counterattitudinal challenge may uncover three types of relationships between the new (challenging) and old (proattitudinal) information. Part of the challenge may be consistent with the prior information (a commonality relationship). Such consistent information should receive little scrutiny and be accepted at face value (e.g., Lord, Ross, and Lepper 1979). Other parts of the challenge may be inconsistent with the proattitudinal information (i.e., damaging for the prior evaluation) but noncommensurable with the prior information (a nonalignable relationship). The lack of commensurability between the two sets of information will obscure the evaluative implications of the challenging information, that is, its diagnosticity (e.g., Slovic and MacPhillamy 1974). As a result, this noncommensurable challenging information should produce relatively little revision. Finally, challenges may be inconsistent with the proattitudinal information and commensurable with the prior information (an alignable relation). These commensurable challenges should be perceived as more diagnostic and as more damaging for the target (Muthukrishnan, Pham, and Mungalé 1999). As a result, they should produce greater revision. Therefore, because of the alignment process involved in the assessment of the diagnosticity of the challenge, challenges of a given scale value may produce different amounts of revision depending on their commensurability with the proattitudinal information, which determines their perceived diagnosticity. Note that the commensurability of the challenge is only one of several determinants of its diagnosticity. Challenges that are extremely negative are also likely to be perceived as particularly diagnostic (e.g., Skowronski and Carlston 1987).

That the magnitude of judgment revision depends on the perceived diagnosticity of the challenge—and therefore on the commensurability between the challenging and proattitudinal information—explains a variety of previous findings. For example, Petty and Wegener (1998) observe that among high self-monitors, image appeals are more effective in changing attitudes than quality appeals are. Among low self-monitors, quality appeals are more effective in changing attitudes than image appeals are. Presumably, this is because image appeals are more commensurable with the attitude representation of high self-monitors, whereas quality appeals are more commensurable with the attitude representation of low self-monitors. More direct evidence comes from Fabrigar and Petty's (1999) study mentioned previously. In this study, the researchers created "affective" initial attitudes by providing a direct sensory experience with the target (e.g., tasting a beverage) and created "cognitive" initial attitudes by providing propositional information about the target (e.g., reading a passage about the beverage). Similarly, the affective counterattitudinal information also consisted of a sensory experience with the target (e.g., smelling the beverage after ammonia had been added), whereas the cognitive counterattitudinal information consisted of a verbal description (e.g., reading about the beverage's bad smell). According to our model, the observed affective–cognitive matching effects occurred because a counterattitudinal sensory experience is easier to compare with a previous sensory experience, whereas a counterattitudinal verbal description is easier to compare with another verbal description. Additional evidence of the commensurability principle comes from Muthukrishnan, Pham, and Mungalé (1999), who find that judgment revision is more pronounced when the challenging information is described with the same scale units as the proattitudinal information.

Our model therefore predicts that the magnitude of judgment revision that follows a challenge should generally be (1) a negative function of the accessibility of the previously learned proattitudinal information and (2) a positive function of the commensurability between the challenging information and the previous proattitudinal information (assuming that the challenge is somewhat compelling). We discuss next how this model can be used to predict the effects of abstract versus attribute-specific positioning on the revision of brand evaluations.

Positioning Abstraction and Revision

According to our model, the difference in abstraction between abstract and attribute-specific positioning will affect a brand's susceptibility to counterattitudinal challenges in two ways: first, by altering the perceived diagnosticity of the challenge and, second, by determining the accessibility of proattitudinal information.

Abstraction, commensurability, and diagnosticity. According to our search-and-alignment model of judgment revision (see Figure 1), any factor that increases the commensurability between the accessible proattitudinal information and the challenging information increases the perceived diagnosticity of the challenge, which determines its weight in the revised judgment (Muthukrishnan, Pham, and Mungalé 1999). One of these factors is the relative level of abstraction of the two sets of information. The mental comparisons involved in damage assessment should be easier when the two sets of information are at similar levels of abstraction than when they are at dissimilar levels of abstraction (e.g., Johnson 1984). Assuming that the challenge is somewhat compelling (see Petty and Wegener 1998), similar levels of abstraction should thus produce more pronounced revisions. Abstract positioning platforms should therefore result in lesser revision when the challenge focuses on specific information but greater revision when the challenge is more general. In contrast, attribute-specific platforms should result in lesser revision when the challenge is at a general level but greater revision when the challenge is specific.

Abstraction and defense accessibility. Our model further postulates that the magnitude of judgment revision should, in general, be negatively related to the accessibility of proattitudinal information at the time of the challenge. It has been repeatedly demonstrated that judgmental abstractions are more memorable than the factual details on which they are based (e.g., Carlston 1980; Kardes 1986). Abstract positioning information should be intrinsically more memorable than attribute-specific information. Therefore, when a challenge triggers a search for proattitudinal information, the former should be relatively more accessible for defending the prior evaluation than the latter. The greater memorability of abstract positioning information helps make it a more effective defense against counterattitudinal challenges than attribute-specific positioning information. However, this rel-

ative superiority of abstract positioning should hold under only two conditions. First, the accessible abstract positioning information should not be easily undermined by the challenging information. Therefore, the challenge should not be commensurable with the abstract positioning. Second, consumers should devote only limited attention to the positioning information when forming their initial evaluations. Otherwise, the intrinsic memory advantage of the abstract positioning platforms would vanish.

OVERVIEW OF EXPERIMENTS

We tested the model's predictions in four experiments modeled after Haugtvedt and colleagues (1994). So we could assess genuine judgment revisions (or attitude changes) as opposed to mere judgment formation, each experiment consisted of two sessions. In the first session, subjects received either attribute-specific or abstract positioning information and formed a (generally favorable) initial evaluation of the target brand. In the second session, subjects received some new information that challenged the brand, and then they reevaluated the brand. Across experiments, we varied the type of challenge and the conditions under which the initial information was learned.

We examined judgment revision across two dependent measures. As an indicator of the magnitude of judgment revision, we analyzed the revised evaluations after adjusting for the initial evaluations. Higher revised evaluations would indicate lesser downward revision (greater resistance); lower revised evaluations would indicate greater downward revision (lesser resistance). As an indicator of the probability of judgment revision, we analyzed the proportion of subjects in each condition whose amount of revision exceeded the mean amount of revision of that experiment by more than one standard error. In all but one experiment, the stimuli were calibrated in such a way that the mean levels of the initial evaluations and confidence in these evaluations were equivalent across types of positioning information. This equivalence allows meaningful comparisons of the magnitude and probability of revision across conditions.

EXPERIMENT 1

This experiment examines how abstract and attribute-specific positioning influence judgment revision when the challenge is specific and the positioning information is learned under low involvement. Subjects formed an initial evaluation of the target brand on the basis of either a single abstract positioning statement about the brand's superiority or three specific performance claims. As mentioned previously, the two types of positioning were calibrated to produce initial evaluations that were equivalent in terms of both positivity and confidence. After a delay, subjects were presented with new information that challenged the initial evaluations using specific arguments. In one condition, the challenge consisted of specific claims about the target brand that depicted it in a mildly negative light. In the other condition (included for generalizability), the challenge consisted of equally specific but positive information about a competitor brand.

We expected that for both types of challenges, subjects who had formed their initial brand evaluations on the basis of the abstract positioning information would revise these evaluations to a lesser extent than would subjects who had formed their initial evaluations on the basis of the attribute-specific information. We expected two factors to contribute to the lesser revision of evaluations that were based on abstract positioning. First, the two types of challenges—though differing in directness—both focused on specific attribute information. Such specific information should be more commensurable with—and damaging for—the attribute-specific positioning than the abstract positioning. Second, subjects learned the initial positioning information under conditions of low involvement. Therefore, the abstract positioning information, being inherently more memorable, should be more accessible to defend the brand than is the attribute-specific information. Accordingly, we predicted that the relative superiority of the abstract positioning information would be partially but not completely mediated by the accessibility of proattitudinal information at the time of the challenge, which we assessed by testing subjects' recall for the positioning information.

H_1: Under low-involvement learning, brand evaluations based on abstract positioning information are more resistant to challenges that are specific than are evaluations based on attribute-specific positioning information.

H_2: This effect is partially mediated by the greater memorability of abstract positioning information (compared with attribute-specific positioning information) when learning involvement is low.

Method

Subjects and design. Seventy-three undergraduates were randomly assigned to conditions in a 2×2 between-subjects design. Subjects formed their initial brand evaluations on the basis of either a single abstract positioning statement (abstract positioning) or three specific claims about the product's attributes (attribute-specific positioning). They were subsequently exposed to either an attack on the target brand's attributes (specific direct attack) or noncomparative praise of a competitor brand's attributes (specific indirect attack).

Procedure. The experiment involved two sessions conducted two days apart. The purpose of the first session was to generate low-involvement exposures to the target brand information and assess initial evaluations. Participants were told that they would be evaluating a television cartoon program. Because the project was in its early stages, the pilot test would be conducted with a print version of the program presented in a booklet. To simulate television watching, advertisements would be scattered at intervals through the booklet. The booklets consisted of comic book panels among which were three pods of print advertisements. Each pod contained two advertisements—one for the target brand, a pen called Omega, and one for a filler brand, a supermarket. After reading the booklet, subjects reported their initial evaluations of the target and filler brands on two nine-point scales ("bad"/"good," "favorable"/"unfavorable"; $r = .84$ for the target brand). Subjects also reported their confidence in these evaluations on a 1 ("not at all confident") to 9 ("extremely confident") scale.

In the second session, subjects read a *Consumer Report*-type document that challenged the target brand. They then reported their revised evaluations of the target and filler brands and their confidence in these evaluations on the same scales as in the first session. As a process measure of the accessibility of proattitudinal information at the time of the

challenge, subjects were asked to recall the target brand information presented during the first session. Each recall item was coded as accurate or inaccurate by two judges who were blind to the hypotheses (agreement = 90%; disagreement was resolved by one of the authors).

Positioning information. All subjects received three exposures to the target advertisement across advertising pods. The advertisements for the first two exposures were identical across conditions. They simply featured a picture of the product, its brand name, and the picture of a spokesperson. Only the third advertisement differed across conditions. The third advertisement contained the same execution elements as the first two advertisements plus one of two types of information. In the attribute-specific positioning condition, the advertisement featured three performance claims (e.g., "Omega 3 provides sloped design and optimal balancing"), which a pretest had shown to be relatively important (between 8.3 and 8.6 on an 11-point scale of importance). In the abstract positioning condition, the advertisement contained a single abstract positioning statement: "The best pen money can buy." A pretest (n = 36) showed that that the two types of positioning information produced initial brand evaluations that were equivalent in terms of extremity ($\bar{X}_{Specific}$ = 5.19, $\bar{X}_{Abstract}$ = 5.08; F < 1), confidence ($\bar{X}_{Specific}$ = 5.12, $\bar{X}_{Abstract}$ = 4.98; F < 1), and persistence over time ($\bar{X}_{Specific}$ = 4.97, $\bar{X}_{Abstract}$ = 4.94; F < 1).

Type of challenge. The report subjects read in the second session included specific claims that had negative implications for the target brand but were expected not to be fatal (to avoid floor effects). In the specific direct attack condition, the report disclosed five specific problems about the brand that pretests had shown to be relatively minor (e.g., the package was difficult to open). In the specific indirect attack condition, the report praised five attributes of a competitor's pen (e.g., "Its revolutionary engineering provides outstanding writing smoothness") without mentioning the target brand explicitly.

Results

Preliminary analyses. To verify the comparability of the initial evaluations across conditions, we submitted them to a 2 (positioning) × 2 (challenge) analysis of variance (ANOVA) (see means in Table 1). As expected, the analysis uncovered no main or interaction effects of the manipulations (overall $\bar{X}$ = 5.26, all F < 1). A similar ANOVA of confidence in these initial evaluations uncovered no differences either (overall $\bar{X}$ = 4.55, largest F(1, 67) = 1.50, p = .22). As in the pretest, the initial evaluations were equivalent in terms of extremity and confidence, which makes it difficult to interpret any experimental effects in terms of unequal initial evaluations across conditions.

Revised evaluations. The revised evaluations were submitted to a positioning × challenge analysis of covariance (ANCOVA) with initial evaluations as a covariate. A main effect of type of challenge (F(1, 68) = 11.79, p < .01) indicated that revised evaluations were lower (revisions were more pronounced) in the direct attack condition ($\bar{X}$ = 3.39) than in the indirect attack condition ($\bar{X}$ = 4.06). More important, a main effect of positioning (F(1, 68) = 23.28, p < .001) showed that, as hypothesized in H_1, revised evaluations were lower (revisions stronger) in the attribute-specific condition ($\bar{X}$ = 3.26) than in the abstract condition ($\bar{X}$ = 4.20). There was no interaction (F < 1), showing that this effect held under both types of challenge.

Probability of revision. As a measure of revision probability, we tabulated the proportion of subjects in each condition whose amount of revision exceeded the mean amount of revision by more than one standard error. These proportions were submitted to a positioning × challenge log-linear analysis. A main effect of positioning showed that the probability of revision was stronger in the attribute-specific condition (P = 58%) than in the abstract conditions (P = 29%; χ^2 = 6.45, p < .02), again in support of H_1. In addition, the probability of revision was marginally higher in the direct attack condition (P = 55%) than in the indirect attack condition (P = 35%; χ^2 = 3.00, p = .08). The interaction was not significant (χ^2 < 1).

Mediating effect of accessibility. We predicted that the lesser revisions under abstract positioning would be partially mediated by the greater accessibility of the abstract positioning information at the time of judgment—accessibility due to the intrinsic memorability of abstract information (H_1). As a measure of information accessibility, we recorded the proportion of subjects who were able to recall at least one claim in the attribute-specific positioning condition and the proportion of subjects who were able to recall

Table 1

EXPERIMENT 1: EVALUATION, REVISION, AND RECALL AS A FUNCTION OF POSITIONING AND TYPE OF CHALLENGE

	Direct Specific Attack		*Indirect Specific Attack (Competitor Praise)*	
	Abstract Positioning (n = 16)	*Specific Positioning (n = 17)*	*Abstract Positioning (n = 19)*	*Specific Positioning (n = 21)*
Initial evaluation[a]	5.38	5.32	5.32	5.07
	(1.01)	(1.06)	(1.37)	(1.15)
Revised evaluation[b]	3.77	3.02	4.62	3.50
	(1.38)	(.85)	(1.31)	(.80)
Amount of revision[a]	1.61	2.30	.70	1.57
	(1.16)	(.85)	(.90)	(.78)
Probability of revision[c]	38%	71%	21%	48%
	(6/16)	(12/17)	(4/19)	(10/21)
Probability of recall	44%	29%	63%	29%
	(7/16)	(5/17)	(12/19)	(6/21)

[a]Standard deviations are in parentheses.
[b]Means are least-square adjusted for initial evaluations. Standard deviations (in parentheses) are unadjusted.
[c]Proportion of revisions exceeding the average revision by at least one standard error. Frequency counts are in parentheses.

the abstract statement in the abstract positioning condition (see Table 1).[1] A log-linear analysis showed that, as predicted, the proportion of subjects who were able to recall the abstract positioning statement (P = 54%) was significantly greater than the proportion of subjects who were able to recall one or more specific claims (P = 29%; $\chi^2 = 4.34$, $p < .05$). No other effects were significant. We then entered a dummy variable that captured subjects' recall as an additional predictor in a positioning × challenge ANCOVA of the revised evaluations (the other covariate being the initial evaluations). As expected, this recall variable was significantly related to the revised evaluations ($F(1, 67) = 20.24$, $p < .001$). Subjects who were able to recall some of the proattitudinal (target brand) information revised their evaluations less ($\bar{X} = 4.60$) than did subjects who were unable to recall this information ($\bar{X} = 3.14$). This additional predictor provoked a noticeable reduction of the main effect of positioning on the amount of revision, reducing the mean squares (MSs) for this effect by 41%.[2] However, the main effect of positioning remained significant ($F(1, 67) = 17.74$, $p < .001$). These results suggest that differential accessibility of the target brand information mediated the effects of the type of positioning information on revision, but only partially, as hypothesized (H_2).

Discussion

We found brand evaluations based on abstract positioning information to be more resistant to counterattitudinal challenges than brand evaluations based on attribute-specific positioning information. This effect held under both a direct attack on the target brand's attributes and noncomparative praise of a competitor brand's attributes. Two conditions appear to promote the lesser revision of brand evaluations that are based on abstract positioning information. Under limited initial processing of the target brand information, abstract positioning information has a greater chance of being recalled during judgment revision than does attribute-specific information. This is because abstract information is intrinsically more memorable. The difference in revision across positioning conditions was indeed partially mediated by subjects being more likely to recall the abstract positioning statement than to recall one or more specific claims. This result is consistent with the proposition that judgment revision involves a refutational search for proattitudinal information. The partial mediation further indicates that differential accessibility alone does not fully explain the relative superiority of abstract positioning. Another determinant of the relative superiority of abstract positioning lies in the specificity of the challenges used in this experiment. Challenges that are specific appear to be less diagnostic—and thus less damaging—when evaluated against proattitudinal brand information that is abstract than when evaluated against proattitudinal brand information that is specific.

[1]A comparison of the raw recall scores would not be appropriate, because subjects learned different numbers of items (one versus three) across positioning conditions.

[2]Although some authors have suggested reporting the percent reduction of $\hat{\omega}^2$ as an indicator of partial mediation, we prefer to report the percent reduction of the MSs of the mediated effect. This is because in ANCOVA, changes of $\hat{\omega}^2$ also reflect changes in the MS error that are unrelated to the experimental factor of interest (e.g., mediation of other experimental or unobserved factors).

EXPERIMENT 2

An important characteristic of Experiment 1 (and of Experiments 3 and 4) is that the two types of positioning information were calibrated in such a way that they would produce initial evaluations that would be equivalent in terms of favorability and confidence. In other words, in the absence of a challenge, neither set of positioning information was intrinsically stronger. Equating the initial evaluations across conditions greatly enhances the interpretability of the results. It becomes difficult to explain differences of revisions across conditions in terms of regression to the mean or floor effects.

It may be argued, however, that in the real world, abstract and attribute-specific positioning information need not produce initial brand evaluations that are equivalent. If marketers position their products on their truly most compelling characteristics, the resulting attribute-specific positioning may produce initial evaluations that are significantly more favorable than evaluations based on abstract positioning statements. Would the primary result of Experiment 1 still hold? Would more favorable evaluations based on the brand's most compelling characteristics incur stronger revision after a specific challenge than less favorable evaluations based on an abstract positioning statement? This experiment replicates Experiment 1's main result after relaxing the methodological constraint of initial brand evaluation equivalence.

H_3: Under low-involvement learning and specific challenges, brand evaluations based on abstract positioning can be more resistant than evaluations based on attribute-specific positioning, even if the former are initially less favorable than the latter.

Method

The procedure was identical to that of Experiment 1. Ninety-four undergraduates read a booklet filled with comic book panels, among which three executions of the target advertisement were embedded (along with a filler advertisement). Only the last execution of the target advertisement differed across conditions. In the abstract positioning condition, the target advertisement contained the same single positioning statement as in Experiment 1. In the attribute-specific positioning condition, the advertisement contained three performance claims (e.g., "The benzine tip of Omega 3 facilitates smooth, no skip writing") that a pretest had shown to be even more compelling than the claims used in the attribute-specific positioning condition of Experiment 1 (9.1–9.4 on an 11-point scale of importance). After reading the booklet, subjects reported their initial evaluations of the target brand and their confidence in these evaluations using the same scale as in Experiment 1. Two days later, all subjects were exposed to the same challenging information as in the direct specific attack condition of Experiment 1 and were asked for their revised evaluations of the target brand. Recall of the brand's positioning information was assessed as in Experiment 1.

Results and Discussion

As expected, initial brand evaluations were no longer equivalent across types of positioning. They were significantly more favorable in the attribute-specific condition ($\bar{X} = 7.01$) than in the abstract positioning condition ($\bar{X} =$

6.53, F(1, 92) = 5.38, $p < .05$). Confidence in these evaluations was also stronger in the attribute-specific condition ($\bar{X}$ = 6.28) than in the abstract positioning condition ($\bar{X}$ = 5.40, F(1, 92) = 17.88, $p < .001$). However, consistent with H_3, revisions were again stronger in the attribute-specific condition than in the abstract positioning condition. An ANCOVA showed that after adjustment for the initial evaluations, the revised evaluations were significantly lower in the attribute-specific condition ($\bar{X}$ = 4.68) than in the abstract positioning condition ($\bar{X}$ = 5.39, F(1, 91) = 9.73, $p < .01$). A log-linear analysis showed that the probability of revision was also larger in the attribute-specific positioning condition (P = 68%) than in the abstract positioning condition (P = 28%; $\chi^2 = 14.47$, $p < .001$). As in Experiment 1, recall of the single positioning statement was reliably greater (P = 85%) than recall of any of the specific claims (P = 51%; $\chi^2 = 11.43$, $p < .001$). Again, consistent with H_2, the greater accessibility of the abstract positioning statement mediated partially—but not completely—the lesser revisions under abstract positioning (MS reduced by 52%).

Despite the use of attribute-specific claims that were significantly stronger, the results replicate Experiment 1 almost perfectly. Under low-involvement learning and specific challenges, initial evaluations based on abstract positioning information are revised less than those based on attribute-specific positioning information. The phenomenon uncovered in Experiment 1 was not due to the use of weaker claims in the attribute-specific conditions. It occurs not only when the two types of information produce initial evaluations that are equivalent (Experiment 1) but also when the attribute-specific positioning produces initial evaluations that are more favorable and are held with greater confidence (Experiment 2).[3]

EXPERIMENT 3

The purpose of this experiment was to replicate the first two experiments' basic findings and provide additional evidence of the underlying processes. Again, subjects formed initial brand evaluations on the basis of either abstract positioning information or attribute-specific positioning information. The information used in the attribute-specific positioning condition was the same as in Experiment 1, so as to equate the initial evaluations across type of positioning. Half the subjects learned the brand information under a low-involvement condition; the other half learned this information under a high-involvement condition. After a delay, all subjects were exposed to a specific direct attack on the brand's attributes. We predicted that in the low-involvement condition, the results would replicate those of the first two experiments. Revisions would be lesser among subjects who were exposed to the abstract positioning than among subjects exposed to the attribute-specific positioning. In contrast, in the high-involvement condition, there should be less difference between the abstract positioning and the attribute-specific positioning. This is because high involvement should increase memory for brand information regardless of its abstraction, thereby canceling the intrinsic memory advantage of the abstract positioning information.

H_4: Under low-involvement learning, brand evaluations based on abstract positioning information are more resistant to specific challenges than are evaluations based on attribute-specific positioning information (see H_1).

H_5: (a) High-involvement learning reduces the evaluative resistance advantage of abstract positioning over attribute-specific information; (b) this is because, under high involvement, the intrinsic memory advantage of abstract information dissipates.

The experiment also examined the role of information commensurability as a determinant of the relative superiority of abstract positioning under specific challenges. We predicted that the specific attack on the brand would be perceived to be less diagnostic among subjects who had formed their initial evaluations on the basis of abstract positioning information than among subjects who had formed their initial evaluations on the basis of attribute-specific positioning information. This is because specific challenges are more commensurable with proattitudinal information that is equally specific (attribute-specific positioning) than with proattitudinal information that is at a higher level of abstraction (abstract positioning). The difference in perceived diagnosticity across conditions should be a significant mediator of the amount of revision produced by the challenge across conditions.

H_6: The greater evaluative resistance produced by abstract positioning information under specific challenges is mediated in part by the lower perceived diagnosticity of the challenge in light of abstract (compared with attribute-specific) positioning information.

We tested these predictions in two stages. In a preliminary study, we examined the effects of positioning and involvement on memory for the brand information. In the main study, we examined the effects of the same factors on judgment revision.

Preliminary Study

Method and predictions. Eighty-two undergraduates were randomly assigned to conditions in a 2 × 2 between-subjects design. The first factor manipulated the type of positioning: abstract or attribute-specific. The second factor manipulated subjects' involvement when they are exposed to the brand information: low or high. The procedure closely followed that of Experiments 1 and 2, except that the delay between the two sessions was 90 minutes instead of two days. In the first session, subjects read the same booklets as in Experiment 1, which contained either the abstract or the attribute-specific positioning version of the target advertisement. Subjects in the low-involvement condition received the same processing instructions as in Experiment 1. Subjects in the high-involvement condition were told that the pen would soon be available at the university bookstore and that those who provided the most accurate responses to the questions that followed the information presentation would receive a pen as a gift. After reading the booklet, subjects provided their initial evaluations of the target and filler brands on three nine-point scales that were anchored by "very bad"/"very good," "like"/"dislike," and "favorable"/"unfavorable" (α_{Omega} = .91). Unlike in the main experiment, subjects were not exposed to a challenge in the second

[3]Note that it could be argued that evaluations that are more extreme (here, positive) are more likely to be revised than are evaluations that are less extreme because of regression to the mean or range-restriction effects. This is precisely why, in every other experiment, the stimuli were calibrated to elicit equivalent initial evaluations.

Table 2
EXPERIMENT 3: EVALUATIONS, REVISIONS, RECALL, AND DIAGNOSTICITY AS A FUNCTION OF POSITIONING AND INVOLVEMENT

	Low Involvement		*High Involvement*	
	Abstract Positioning (n = 20)	*Specific Positioning (n = 23)*	*Abstract Positioning (n = 24)*	*Specific Positioning (n = 20)*
Initial evaluation[a]	5.53	5.83	5.46	5.72
	(1.07)	(1.04)	(1.04)	(1.09)
Revised evaluation[b]	4.56	3.52	4.22	4.49
	(1.14)	(1.08)	(.98)	(1.34)
Amount of revision[a]	.97	2.31	1.24	1.23
	(1.03)	(1.35)	(1.04)	(1.17)
Probability of revision[c]	25%	65%	42%	30%
	(5/20)	(15/23)	(10/24)	(6/20)
Diagnosticity of challenge	5.10	6.91	5.71	5.85
	(2.38)	(1.88)	(1.94)	(2.06)
Recall probability[d]	70%	40%	80%	86%
	(14/20)	(8/20)	(16/20)	(19/22)

[a]Standard deviations are in parentheses.
[b]Means are least-square adjusted for initial evaluations. Standard deviations (in parentheses) are unadjusted.
[c]Proportion of revisions exceeding the average revision by at least one standard error. Frequency counts are in parentheses.
[d]Observed in the preliminary study.

session. Instead, they were given five minutes to recall all the target brand information presented to them in the earlier session. These recall data were coded by two judges who were blind to the hypotheses (100% agreement).

We predicted that, under low involvement, memory for the abstract positioning information would be better than memory for the attribute-specific positioning information, as in Experiments 1 and 2. However, under high involvement, memory for the brand information should be equally good across positioning conditions, because the intrinsic memorability advantage of the abstract positioning information should dissipate.

Results. The proportions of subjects who could recall the abstract positioning statement and subjects who could recall at least one specific performance claim were submitted to a positioning × involvement log-linear analysis (see Table 2, last row). As expected, the analysis revealed a main effect of involvement ($\chi^2 = 6.80$, $p < .02$). The probability of recalling some of the proattitudinal brand information was greater in the high-involvement condition (P = 83%) than in the low-involvement condition (P = 55%). This effect was qualified by a marginally significant interaction with positioning ($\chi^2 = 2.56$, $p = .11$). Under low involvement, the probability of recalling the abstract positioning statement (P = 70%) was greater than the probability of recalling one or more attribute-specific claims (P = 40%; $\chi^2 = 3.52$, $p = .06$), which replicated the result of Experiment 1. In contrast, under high involvement, the probability of recalling either type of information was equally high ($P_{Abstract} = 80\%$, $P_{Specific} = 86\%$; $\chi^2 < 1$). This supports the hypothesis that the memorability advantage of the abstract positioning information dissipates under high involvement (H_{5b}).

Main Study: Method

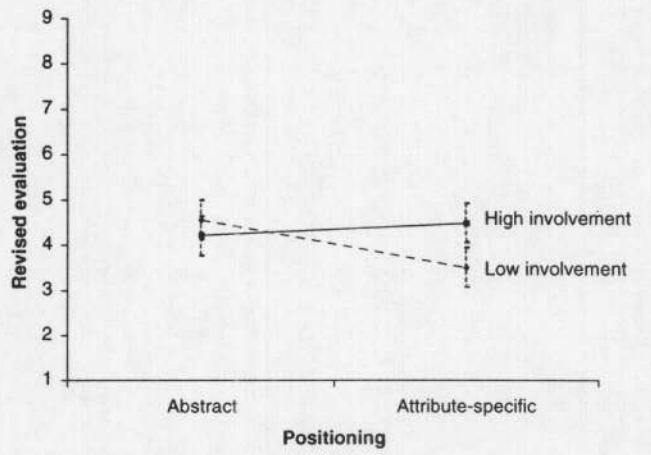
We randomly assigned another 87 undergraduates to conditions of a similar 2 (positioning) × 2 (involvement) between-subjects design. The procedure was the same as in the preliminary study, except for the inclusion of a challenge. In the first session, subjects received booklets with either the abstract or the attribute-specific positioning version of the target advertisement and read them under conditions of either high or low involvement, which were manipulated in the same way as in the preliminary study. Subjects then reported their initial evaluations of the target and filler brands ($\alpha_{Omega} = .85$) and their confidence in these evaluations (1 = "not at all confident," 9 = "extremely confident"). In the second session, 90 minutes later, subjects read the same *Consumer Reports*-type document as in the specific direct attack condition of Experiments 1 and 2. They then reported their revised evaluations of the brand ($\alpha = .91$) and their confidence in these evaluations. To examine how the commensurability between the positioning information and the challenging information influences the perceived diagnosticity of the challenge, we measured the latter by having subjects rate how useful the challenging information was for evaluating the target brand (1 = "not at all useful," 11 = "extremely useful").

Results

Preliminary analyses. The results are summarized in Table 2. As in Experiment 1, initial brand evaluations had equivalent levels of extremity (overall $\bar{X} = 5.63$, largest $F(1, 83) = 1.46$, $p = .23$) and were held with similar confidence (overall $\bar{X} = 5.30$, largest $F(1, 83) = 1.01$, $p = .32$) across conditions.

Revised evaluations. The revised brand evaluations were submitted to a positioning × involvement ANCOVA with the initial evaluations as a covariate. A marginally significant main effect of positioning ($F(1, 82) = 3.07$, $p = .08$) indicated that subjects who were exposed to the abstract positioning statement revised their evaluations ($\bar{X} = 4.39$) slightly less than did subjects who were exposed to the specific claims ($\bar{X} = 4.01$). More important, as depicted in Figure 2, this effect was qualified by a significant interaction with involvement ($F(1, 82) = 9.06$, $p < .01$). Under low involvement, revised evaluations were again higher (revision was lesser) in the abstract condition ($\bar{X} = 4.56$) than in the attribute-specific condition ($\bar{X} = 3.52$, ($F(1, 82) = 10.59$, $p < .01$), which replicated the first two experiments' results and supported H_4. In contrast, under high involvement, the revised evaluations were equally high in the abstract ($\bar{X} = 4.22$) and attribute-specific ($\bar{X} = 4.49$) conditions ($F < 1$), in

Figure 2
EXPERIMENT 2: REVISION AS A FUNCTION OF POSITIONING AND INVOLVEMENT



Notes: Least-squares means, adjusted for initial evaluations, and 95% confidence intervals.

support of H_{5a}. The main effect of involvement was not significant ($F(1, 82) = 2.09$, $p = .15$).

Probability of revision. A log-linear analysis of the proportion of subjects whose amount of revision exceeded the mean amount of revision by more than one standard error revealed a significant positioning × involvement interaction ($\chi^2 = 5.75$, $p < .02$). As predicted, under low involvement, the probability of revision was lower in the abstract condition (P = 25%) than in the attribute-specific condition (P = 65%; $\chi^2 = 6.51$, $p < .02$), in support of H_4. In contrast, under high involvement, the probability of revision was comparable across types of positioning ($P_{Abstract} = 42\%$, $P_{Specific} = 30\%$; $\chi^2 < 1$), consistent with H_{5a}. No other effects were significant.

Perceived diagnosticity. We hypothesized that abstract positioning information can produce lesser revision (especially under low involvement) because this information is noncommensurable with challenges that are specific. As a result, such challenges are perceived to be less diagnostic by people who base their initial evaluation on abstract information than by people who base their initial evaluation on attribute-specific information. To test this hypothesis (H_6), we submitted ratings of the perceived diagnosticity of the challenge to a two-way ANOVA. As expected, a main effect of positioning ($F(1, 83) = 4.85$, $p < .03$) showed that subjects who were initially exposed to the specific claims found the challenge to be more diagnostic ($\bar{X} = 6.42$) than did subjects who were exposed to the abstract statement ($\bar{X} = 5.43$). A small interaction with involvement ($F(1, 83) = 3.55$, $p < .07$) indicated that this effect was more pronounced in the low-involvement condition than in the high-involvement condition. The commensurability of the challenge seemed to be a greater concern among subjects who had not thoroughly processed the brand information.

The perceived diagnosticity of the challenge was then entered as an additional covariate in a positioning × involvement ANCOVA of the revised evaluations. As anticipated, the perceived diagnosticity of the challenge was a strong predictor of the magnitude of revision ($F(1, 81) = 95.49$, $p < .001$). Furthermore, with the inclusion of this covariate, the main effect of positioning became nonsignificant ($F < 1$; MS reduced by 97%), and the positioning × involvement interaction was strongly attenuated (MS reduced by 63%), though still significant ($F(1, 81) = 5.33$, $p < .03$). Therefore, the perception that the challenge was less diagnostic when the initial evaluation was based on a abstract positioning statement than when it was based on specific claims was an important mediator of the lesser revision produced by the former type of information, as hypothesized in H_6.

Discussion

The results provide additional evidence that when the proattitudinal information has been learned under low involvement and the challenge is specific, evaluations based on abstract positioning information may be more resistant to counterattitudinal challenges than are evaluations based on attribute-specific positioning information. Under high involvement, judgment revisions may not be different across types of positioning.

Two processes seem to explain why abstract positioning produces resistance to specific challenges under low involvement but not under high involvement. First, if people form their initial evaluations on the basis of limited processing of the brand information, the greater intrinsic memorability of abstract information makes this information more likely to be retrieved during judgment revision. As in Experiment 1, under low involvement, the probability of recalling some brand information was greater in the abstract positioning condition than in the attribute-specific positioning condition. Under high involvement, however, the two types of information were equally likely to be retrieved. The second process pertains to the low perceived diagnosticity of challenges that are specific in light of abstract positioning information that is not commensurable. The same challenge that focused on specific attributes of the brand was perceived to be less diagnostic among subjects in the abstract condition than among subjects in the attribute-specific condition. This difference was an important mediator of the effects of abstract versus attribute-specific positioning on revision.

EXPERIMENT 4

Experiment 3 indicates that an important reason abstract positioning produces greater evaluative resistance to challenges that are specific is that such challenges are perceived to be less diagnostic—and therefore less damaging—when evaluated against abstract brand information than when evaluated against attribute-specific brand information. According to our model, this is because the damage assessment that precedes judgment revision requires an alignment of the challenging information with the accessible proattitudinal information. The less commensurable (or alignable) the two sets of information, the less diagnostic (damaging) the challenge is perceived to be and the lesser is the revision. Similarly, the more commensurable the two sets of information, the more damaging the challenge is perceived to be and the greater is the revision. Experiment 4 provides a direct test of this hypothesis.

Subjects again formed initial brand evaluations on the basis of either abstract or attribute-specific positioning information under low involvement. They were subsequently exposed to one of two types of challenge: the same

specific challenge as in Experiment 2 or a more general (unspecific) challenge. We predicted that though the specific challenge would again be more commensurable with the attribute-specific positioning information than with the abstract positioning information, the general challenge would be more commensurable with the abstract positioning information than with the attribute-specific positioning information. As a result, compared with attribute-specific positioning, abstract positioning would produce lesser revision under the specific challenge but greater revision under the general challenge.

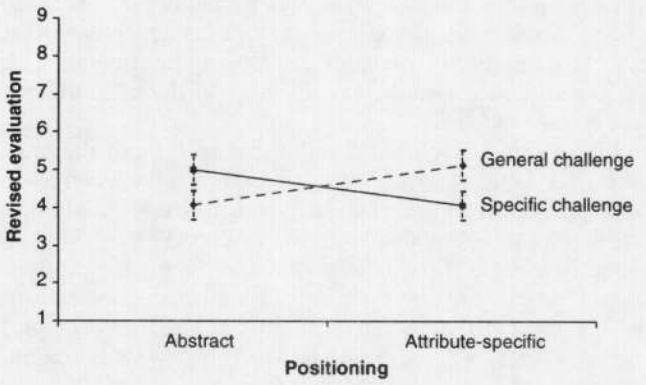
H_7: (a) Brand evaluations based on abstract positioning information are more resistant to challenges that are specific than are brand evaluations based on attribute-specific positioning information; (b) however, brand evaluations based on abstract positioning information are less resistant to challenges that are general than are brand evaluations based on attribute-specific positioning information.

H_8: These effects are mediated by the perceived diagnosticity of the challenge, which depends on the commensurability between the positioning information and the challenging information.

Method

We randomly assigned 122 undergraduates to conditions using a 2 (positioning) × 2 (type of challenge) between-subjects design. The experiment was administered in two sessions conducted 90 minutes apart. In the first session, all subjects were exposed to the brand information under a low-involvement condition and then reported their initial evaluations (α = .93) and confidence in these evaluations. In the second session, half the subjects were exposed to the same specific challenge as in Experiment 2 (mildly negative statements about the brand's attributes). The other half were exposed to a general negative statement about the brand ("There is nothing special about this pen"). After reading the challenge, subjects reported their revised evaluations (α = 94), judgmental confidence, and perceived diagnosticity of the challenge. A pretest (n = 24) had shown that, among subjects who had not been exposed to the brand information, the general version of the challenge had the same perceived negativity ($\bar{X}$ = 4.88) as the specific version of the challenge ($\bar{X}$ = 5.04, F < 1). Therefore, any effects of types of challenge cannot be interpreted in terms of scale values.

Figure 3
EXPERIMENT 3: REVISION AS A FUNCTION OF POSITIONING AND TYPE OF CHALLENGE



Notes: Least-squares means, adjusted for initial evaluations, and 95% confidence intervals.

Results

Preliminary analyses. The results are summarized in Table 3. Again, initial brand evaluations (overall $\bar{X}$ = 5.95, largest F(1, 118) = 2.05, p = .15) and confidence in these evaluations (overall $\bar{X}$ = 5.48, largest F(1, 118) = 1.91, p = .17) were equivalent across conditions.

Revised evaluations. A two-way ANCOVA of the revised evaluations (adjusted for the initial evaluations) revealed the predicted positioning × type of challenge interaction depicted in Figure 3 (F(1, 117) = 18.71, p < .001). When the challenge was specific, revised evaluations were higher (revisions lesser) when the initial evaluation was based on an abstract positioning statement ($\bar{X}$ = 4.99) than when the initial evaluation was based on specific product claims ($\bar{X}$ = 4.06, F(1, 117) = 3.89, p = .05). This result replicates the first three experiments' results and supports H_{7a}. In contrast, when the challenge was general, the revised evaluations

Table 3
EXPERIMENT 4: EVALUATIONS, REVISION, AND DIAGNOSTICITY AS A FUNCTION OF POSITIONING AND TYPE OF CHALLENGE

	Specific Challenge		*General Challenge*	
	Abstract Positioning (n = 30)	*Specific Positioning n = 31)*	*Abstract Positioning (n = 30)*	*Specific Positioning (n = 31)*
Initial evaluation[a]	5.62	6.13	5.94	6.13
	(1.14)	(1.15)	(1.74)	(1.21)
Revised evaluation[b]	5.00	4.36	4.07	5.14
	(1.11)	(1.49)	(1.73)	(1.15)
Amount of revision[a]	.62	1.77	1.87	.99
	(1.40)	(1.21)	(1.24)	(.79)
Probability of revision[c]	27%	61%	60%	19%
	(8/30)	(19/31)	(18/30)	(6/31)
Diagnosticity of challenge	5.50	7.00	7.63	5.68
	(2.65)	(1.95)	(1.65)	(2.57)

[a]Standard deviations are in parentheses.
[b]Means are least-square adjusted for initial evaluations. Standard deviations (in parentheses) are unadjusted.
[c]Proportion of revisions exceeding the average revision by at least one standard error. Frequency counts are in parentheses.

were lower (revisions greater) when the initial evaluation was based on an abstract positioning statement ($\bar{X}$ = 4.06) than when the initial evaluation was based on specific claims ($\bar{X}$ = 5.15, F(1, 117) = 14.27, $p < .001$), in support of H_{7b}. This crossover interaction demonstrates that the magnitude of revision following a challenge depends on the perceived diagnosticity of the challenge, which itself depends on the commensurability between the challenging information and the proattitudinal information. (Neither of the main effects was significant.)

Probability of revision. A log-linear analysis of the proportion of subjects whose revisions exceeded the mean revision by more than one standard error uncovered a similar positioning × type of challenge interaction (χ^2 = 16.74, $p < .001$). In the specific challenge condition, a greater proportion of subjects revised their initial brand evaluations when these evaluations were based on attribute-specific positioning information (P = 61%) than when they were based on abstract positioning information (P = 27%; χ^2 = 7.06, $p < .01$), consistent with H_{7a}. In the general challenge condition, a greater proportion of subjects revised their initial evaluations when these evaluations were based on an abstract positioning statement (P = 60%) than when they were based on attribute-specific claims (P = 19%; χ^2 = 9.72, $p < .01$), consistent with H_{7b}. No other effect was significant.

Perceived diagnosticity. As expected, an ANOVA of the perceived diagnosticity of the challenge uncovered a parallel crossover interaction between positioning and the type of challenge (F(1, 118) = 18.05, $p < .001$), consistent with H_8. When the initial evaluations were based on abstract information, the general challenge was perceived to be more diagnostic ($\bar{X}$ = 7.63) than the specific challenge ($\bar{X}$ = 5.50, F(1, 118) = 13.53, $p < .001$). However, when the initial evaluations were based on attribute-specific information, the specific challenge was perceived to be more diagnostic ($\bar{X}$ = 7.00) than the general challenge ($\bar{X}$ = 5.68, F(1, 118) = 5.38, $p < .03$). As in Experiment 3, an ANCOVA shows that the perceived diagnosticity of the challenge was a strong predictor of the revised evaluations (F(1, 116) = 13.66, $p < .001$). In support of H_8, inclusion of this covariate considerably reduced the size of the positioning × type of challenge interaction (MS reduced by 59%), though the effect remained significant (F(1, 116) = 8.51, $p < .01$).

Discussion

The results clearly show that the relative effectiveness of abstract versus attribute-specific positioning in fostering resistance to counterattitudinal challenges depends on the commensurability between the challenge and the positioning information. As in the previous experiments, when the challenge was specific, evaluations based on abstract positioning information were revised less than evaluations based on attribute-specific positioning information. However, when the challenge was general, evaluations based on abstract positioning information were revised more than evaluations based on attribute-specific positioning information. This effect cannot be interpreted in terms of the scale value of the challenge. The challenging information is perceived as much more diagnostic—and thus damaging for the previously learned positioning—when the two sets of information, being at similar levels of abstraction/specificity, are commensurable.

GENERAL DISCUSSION

Positioning and Judgment Revision

We found that, under low-involvement learning conditions, brand evaluations based on abstract positioning information were less prone to revision following challenges that are specific than were brand evaluations based on attribute-specific positioning information. This result was replicated across four experiments and two types of specific challenges.[4] Two processes appear to contribute to this finding. First, abstract information is intrinsically more memorable than attribute-specific information and thus more likely to be accessed when a brand evaluation needs to be defended. Second, challenges that are specific are less commensurable with proattitudinal information that is abstract than with proattitudinal information that is attribute specific. As a result, specific challenges are perceived as less diagnostic and less damaging for abstract positions than for attribute-specific positions.

Under high-involvement learning , however, brand evaluations based on abstract positioning need not be more resistant than those based on attribute-specific positioning. This is because the intrinsic memory advantage of abstract positioning information may dissipate. When the challenge is general, abstract positioning may even produce greater revision than attribute-specific positioning. This is because abstract positioning information is more commensurable with—and thus more easily damaged by—challenges that are general.

Positioning decisions therefore cannot be based solely on the favorability of the brand evaluations that the positioning initially produces. Initial evaluations can be misleading indicators of how well a brand eventually sustains future challenges. Positioning decisions should take into account the conditions under which the positioning information will be learned (high or low involvement) and the type of challenge that the brand will most likely encounter. Similarly, when attempting to undermine a competitor's position, challengers should use information that is commensurable with the information that will be invoked to defend the position (see Zhang and Markman 1998).

The limitations of this research must be acknowledged. First, although the initial evaluations were equated in terms of extremity, confidence, and persistence across positioning conditions, they may still have differed in terms of other dimensions such as ambivalence or accessibility (Petty and Krosnick 1995). Second, our studies examined only noncomparative challenges that emanated from a neutral source. It would be worthwhile to replicate our studies using truly competitive and possibly comparative challenges and to manipulate the strength of the challenge. Third, abstract and attribute-specific positioning need not be mutually exclu-

[4]The results do not simply imply that evaluations based on weak attribute information are revised more readily than evaluations based on strong abstract positioning information. First, the attribute claims used in Experiments 1, 3, and 4 were not inherently weaker than the abstract positioning statement, as evidenced by the equivalence of the initial evaluations across conditions. Second, the basic effect held even when the attribute-specific positioning information produced initial evaluations that were significantly more favorable than the evaluations produced by the abstract positioning statement (Experiment 2). Finally, under certain conditions, evaluations based on abstract information incur more revision than do evaluations based on attribute-specific information (Experiment 4).

sive. It would be interesting to investigate the effects of hybrid positioning that combines abstract statements and attribute-specific claims.

Constructive Processes in Judgment Revision

The processes of judgment revision appear to be much more constructive than is implied by previous research. People do not seem to tally new judgments from previous judgments as indiscriminately as previously suggested. The informational basis of the initial judgment matters in two respects. First, previously learned proattitudinal information is the primary source of "ammunition" that a person can retrieve to defend his or her evaluation. Everything else being equal, revisions will be a negative function of the accessibility and compellingness of the proattitudinal information at the time of the challenge. This refutational search component of our model explains several results of the attitude strength literature.

Second, the informational basis of the initial judgment will affect the perceived diagnosticity of challenge. Everything else being equal, challenges will be perceived as more diagnostic and damaging if they are commensurable with the proattitudinal information. This is the alignment and damage assessment part of our model. A key contribution of this research—one that extends attitude representation theory—is demonstrating that the process of damage assessment in judgment revision resembles the process of structural alignment in judgments of similarity. Revisions will be more pronounced whenever discrepancies between the challenging and proattitudinal information are easily alignable, that is, commensurable.

This principle provides a unifying explanation for a variety of findings. It accounts for the cognitive–affective matching effects reported by Fabrigar and Petty (1999), the functional matching effects reported by Petty and Wegener (1998), the common-scale effects reported by Muthukrishnan, Pham, and Mungalé (1999), and the level-of-abstraction effects observed in this research. This principle is also consistent with the various stimulus–response compatibility effects observed in the behavioral decision literature (e.g., Fischer and Hawkins 1993; Tversky, Sattath, and Slovic 1988).

A major assumption of our model is that the mental representation of the target during initial evaluation is representative of its subsequent memory representation during judgment revision. This assumption may not hold, because the original information may be abstracted or schematized, especially under longer delays (Bartlett 1932). Furthermore, consumers generally do not value product features per se but the benefits these features afford (e.g., Ratneshwar et al. 1999), which compounds the likelihood of abstraction. If abstraction is indeed pervasive, the differential effectiveness of abstract versus attribute-specific positioning could be ephemeral. Two considerations may mitigate this concern. First, there is evidence that memory traces preserve a greater level of detail than has been posited by schema-abstraction models of memory (e.g., Alba and Hasher 1983; Pham and Johar 1997). Memory for the proattitudinal information may therefore retain some of its original specificity, even after longer delays. Second, proattitudinal messages (e.g., positioning advertisements) are often repeated over time, which increases the chances that the proattitudinal formation will be accessible in its original form at the time of the challenge. Nevertheless, a formal test of the representation-stability assumption (e.g., using longer delays) may reveal important boundary conditions for the present findings.

In conclusion, instead of treating evaluations as stable dispositions, it may be useful to regard these judgments as temporary constructions (e.g., Wilson and Hodges 1992). In this new light, attitudinal resistance may not be an ex ante characteristic of evaluative judgments. It may be an ex post outcome of the constructive process of revision.

REFERENCES

Alba, Joseph W. and Lynn Hasher (1983), "Is Memory Schematic?" *Psychological Bulletin*, 93 (2), 203–31.

Bartlett, F.C. (1932). *Remembering: A Study in Experimental and Social Psychology*. New York: Macmillan.

Carlston, Donald E. (1980), "The Recall and Use of Traits and Events in Social Inference Processes," *Journal of Experimental Social Psychology*, 16 (July), 303–28.

Edwards, Kari and Edward E. Smith (1996), "A Disconfirmatory Bias in the Evaluation of Arguments," *Journal of Personality and Social Psychology*, 71 (1), 5–24.

Fabrigar, Leandre R. and Richard E. Petty (1999), "The Role of Affective and Cognitive Bases of Attitudes in Susceptibility to Affectively and Cognitively Based Persuasion," *Personality and Social Psychology Bulletin*, 25 (3), 363–81.

Fischer, Gregory W. and Scott A. Hawkins (1993), "Strategy Compatibility, Scale Compatibility, and the Prominence Effect," *Journal of Experimental Psychology: Human Perception and Performance*, 19 (3), 580–97.

Haugtvedt, Curtis P., David W. Schumann, Wendy L. Schneier, and Wendy L Warren (1994), "Advertising Repetition and Variation Strategies: Implications for Understanding Attitude Strength," *Journal of Consumer Research*, 21 (June), 176–89.

——— and Duane Wegener (1994), "Message Order Effects in Persuasion: An Attitude Strength Perspective," *Journal of Consumer Research*, 21 (June), 205–18.

Hogarth, Robin and Hillel Einhorn (1992), "Order Effects in Belief Updating: The Belief Adjustment Model," *Cognitive Psychology*, 24 (January), 1–55.

Johnson, Michael D. (1984), "Consumer Choice Strategies for Comparing Noncomparable Alternatives," *Journal of Consumer Research*, 11 (December), 741–53.

Kardes, Frank (1986), "Effects of Initial Product Judgments on Subsequent Memory-Based Judgments," *Journal of Consumer Research*, 13 (June), 1–11.

Kunda, Ziva (1990), "The Case for Motivated Reasoning," *Psychological Bulletin*, 108 (3), 480–98.

Lingle, John H. and Thomas M. Ostrom (1979), "Retrieval Selectivity in Memory-Based Impression Judgments," *Journal of Personality and Social Psychology*, 37 (2), 180–94.

Lord, Charles G. and Mark R. Lepper (1999), "Attitude Representation Theory," in *Advances in Experimental Social Psychology*, Vol. 31, Mark P. Zanna, ed. San Diego, CA: Academic Press, 265–343.

———, Lee Ross, and Mark R. Lepper (1979), "Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence," *Journal of Personality and Social Psychology*, 37 (11), 2098–109.

Markman, Arthur B. and Douglas L. Medin (1995), "Similarity and Alignment in Choice," *Organizational Behavior and Human Decision Processes*, 63 (2), 117–30.

McGuire, William J. (1964), "Inducing Resistance to Persuasion: Some Contemporary Approaches," in *Advances in Experimental Social Psychology*, Vol. 1, Leonard Berkowitz, ed. San Diego, CA: Academic Press, 191–229.

Medin, Douglas L., Robert L. Goldstone, and Arthur B. Markman (1995), "Comparison and Choice: Relations Between Similarity

Processes and Decision Processes," *Psychonomic Bulletin and Review*, 2 (1), 1–19.

Muthukrishnan, A.V., Michel Tuan Pham, and Amitabh Mungalé (1999), "Comparison Opportunity and Judgment Revision," *Organizational Behavior and Human Decision Processes*, 80 (December), 228–51.

———, ———, and ——— (2001), "Does Amount of Information Always Bolster Attitudinal Resistance?" *Marketing Letters*, 12 (2), 131–44.

Petty, Richard and Jon A. Krosnick (1995), *Attitude Strength: Antecedents and Consequences*. Mahwah, NJ: Lawrence Erlbaum Associates.

——— and Duane T. Wegener (1998), "Matching Versus Mismatching Attitude Functions: Implications for Scrutiny of Persuasive Messages," *Personality and Social Psychology Bulletin*, 24 (3), 227–40

Pham, Michel Tuan and Gita Venkataramani Johar (1997), "Contingent Processes of Source Identification," *Journal of Consumer Research*, 23 (December), 249–65.

Ratneshwar, S., Alan D. Shocker, June Cotte, and Rajendra K. Srivastava (1999), "Product, Person, and Purpose: Putting the Consumer Back into Theories of Dynamic Market Behavior," *Journal of Strategic Marketing*, 7 (September), 191–208.

Skowronski, John J. and Donal E. Carlston (1987), "Social Judgment and Social Memory: The Role of Cue Diagnosticity in Negativity, Positivity, and Extremity Biases," *Journal of Personality and Social Psychology*, 52 (4), 689–99.

Slovic, Paul and Douglas MacPhillamy (1974), "Dimensional Commensurability and Cue Utilization in Comparative Judgment," *Organizational Behavior and Human Performance*, 11 (April), 179–94.

Tversky, Amos, Shmuel Sattath, and Paul Slovic (1988), "Contingent Weighting in Judgment and Choice," *Psychological Review*, 95 (3), 371–84.

Wilson, Timothy D. and Sarah Hodges (1992), "Attitudes as Temporary Constructions," in *The Construction of Social Judgments*, Leonard Martin and Abraham Tesser, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 37–65.

Wood, Wendy (1982), "Retrieval of Attitude Relevant Information from Memory: Effects on Susceptibility to Persuasion and Intrinsic Motivation," *Journal of Personality and Social Psychology*, 42 (5), 798–810.

Zhang, Shi and Arthur B. Markman (1998), "Overcoming the Early Entrant Advantage: The Role of Alignable and Nonalignable Differences," *Journal of Marketing Research*, 35 (November), 413–26.