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ABSTRACT

It has been argued that consumers’ resistance to counter-attitudinal challenges increases with the amount of information possessed about the target brand and with the elaboration of this information. Five experiments exhibit why this may not necessarily be the case. Experiments 1 and 2 show that the favorability of post-challenge brand evaluations does not strictly depend on the amount of target information possessed, but on the part-worth of the target information that is accessed at the time of the challenge. Therefore, resistance to challenges may sometimes be higher when the individuals possess less information about the target. Experiments 3 and 4 show that reliance on prior target information is a function of the diagnosticity of the challenge. Therefore, the amount of target information previously learned may matter little when the challenge is in a diagnostic comparative format. Experiment 5 shows that the diagnosticity of the challenge also depends on its commensurability with previously learned target information. Under high commensurability, elaboration of the target information may lower resistance to noncomparative challenges from a superior competitor.

In the early nineties, 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%. Then in November 1992 the ABC television network broadcast a graphic 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 of sales. By the end of 1992, Food Lion’s net income was down 13% compared to the previous year (Hartley 1995). Although the challenges that most brands face may not be as severe, this
example shows that any competitive marketplace gives consumers who like a brand many opportunities to reconsider their evaluations. Such opportunities exist whenever these consumers are exposed to a competitor’s ads, hear about other consumers’ negative experiences with the brand, or read industry satisfaction surveys, for instance. Each represents a potential challenge to the target brand. Little is known, however, about how consumers evaluate a brand that they previously liked if this brand has been challenged.

Prior research bearing on this issue comes from the social psychology literature on attitude strength (see Eagly and Chaiken 1993 and Petty and Krosnick 1995 for reviews). This literature suggests that some brand attitudes may be more or less resistant to challenges because of their inherent strength. According to this stream of research, the determinants of attitude strength are to be found—before the challenge has occurred—in the conditions under which the attitudes were originally formed. We argue, however, that an attitude strength perspective overlooks how much brand evaluations following challenge will ultimately be affected by characteristics of the challenge itself and by processes occurring after the challenge has occurred. The purpose of this research is therefore to examine how factors surrounding the formation of the prior brand evaluation as well as factors occurring at the time of the challenge combine to determine post-challenge brand evaluations.

INFORMATION, ELABORATION AND ATTITUDE RESISTANCE

Suppose that a consumer has expressed a favorable evaluation of a brand, but is subsequently exposed to a negative portrayal of the brand, conveyed, for instance, by a customer satisfaction survey. How will this consumer’s evaluation of the brand be affected? One stream of research suggests that it will depend on the strength of the consumer’s original attitude toward the brand (see Petty and Krosnick 1995). If the original attitude was strong, it should be resistant to change and, therefore, little affected by the counterattitudinal information (e.g., Krosnick and Petty 1995). Conversely, if the original attitude was weak,
the post-challenge brand evaluation should be seriously affected by the counterattitudinal information.

The attitude strength literature further suggests that an attitude’s resistance should be greater if (a) it is based on a large amount of information about the target, and (b) independent of the amount, if the information has been well elaborated (e.g., Davidson 1995; Petty, Haugtvedt, and Smith 1995; Wood 1982). Several explanations have been offered as to why attitudes based on a large amount of information may be more resistant to subsequent challenges. Such attitudes may be more resistant because the attitude holders have a larger arsenal of arguments to draw upon to defend their attitudes (e.g., McGuire 1964). Such attitudes may also be more difficult to change because cognitive consistency (cf. Festinger 1957) would require the corollary modification of many underlying beliefs (Eagly and Chaiken 1993). Moreover, such attitudes may be more resistant because the large informational base induces biased processing of subsequent counterattitudinal information (Wood 1982). Similarly, elaboration of information about the target may foster attitudinal resistance by increasing the internal consistency of the attitude structure (the stored evaluation of the target and supporting beliefs, feelings and experiences), or by increasing people’s confidence in their attitudes (e.g., Eagly and Chaiken 1995; Petty et al. 1995).

In summary, research on attitude strength suggests that to understand post-challenge brand evaluations, one should look at how the pre-challenge brand evaluations were originally formed. If the initial evaluations were formed based on a large amount of information and/or a high degree of elaboration, the initial brand evaluations should be resistant to subsequent challenge: therefore, the post-challenge evaluations should be close to the initial evaluations. Although these are important insights, we argue that the attitude strength framework offers only a partial view of how brand evaluations will be ultimately affected by competitive challenges. This is because this stream of research ignores how
conditions at the time of the challenges affect the construction of post-challenge brand evaluations--issues that may be better examined from a judgment construction perspective (e.g., Kardes 1994; Wilson and Hodges 1992).

ACCESSIBILITY, DIAGNOSTICITY, AND POST-CHALLENGE EVALUATION

Research on judgment construction (e.g., Feldman and Lynch 1988; Kardes 1994; Wilson and Hodges 1992) suggests that reliance on prior evaluations--the emphasis of the attitude strength literature--is only one of several ways of reaching post-challenge brand evaluations. Consumers may rely on alternative inputs, including memory for the target brand's attributes and the information conveyed in the challenge. As a result, factors such as the amount of information about the target brand and the elaboration of this information, which are supposed to strengthen consumers' prior evaluations, may be neither sufficient nor necessary to ensure favorable post-challenge brand evaluations.

To understand which input (or combination of inputs) will eventually be used and how they will influence post-challenge brand evaluations, it is useful to refer to the accessibility-diagnosticity framework (Feldman and Lynch 1988, Lynch; Marmorstein and Weigold 1988). According to this framework, the likelihood that an input will be used in a judgment task increases as a function of this input's accessibility relative to alternative inputs. For instance, compared to pallid information, vivid information tends to be weighted more heavily in judgments because the latter type of information is relatively more accessible (e.g., Herr, Kardes and Kim 1991; Reyes, Thompson and Bower 1980). The framework further proposes that the likelihood that an input will be used in a judgment is also a function of this input's relative diagnosticity, that is its perceived information value and usefulness for the judgment at hand. An input is said to be diagnostic to the extent that it allows to discriminate among alternatives in choice tasks or among potential categories in a judgment task (e.g., Pham 1996; Slovic and Lichtenstein 1971; Zukier 1982). We discuss below how
the accessibility and the diagnosticity of the inputs affect the construction of post-challenge brand evaluations and thereby qualify or even reverse previous predictions about the role of amount of information and elaboration on resistance.

**Amount of Information and Input Accessibility**

Consider the situation where a consumer who initially had a favorable opinion about a brand is exposed to information that depicts the brand in a negative light. Part of the information that is relevant for reaching a post-challenge brand evaluation resides in the challenge itself (e.g., newly revealed negative attributes of the target brand). Other relevant pieces of information, such as the attributes that underlie the initial evaluation, may only be available from memory. Consistent with Erber, Hodges, and Wilson (1995), we argue that the post-challenge evaluation will depend on the relative accessibility of the previously encoded information about the target brand. Specifically, we propose that the favorability of post-challenge brand evaluations will be largely driven by the persuasive strength—or, in conjoint terms, the “part-worth”—of the subset of the target information that can be accessed for the judgment (e.g., Alba, Hutchinson and Lynch 1991). As a result, initial learning of a large amount of information may sometimes be detrimental to the formation of favorable post-challenge brand evaluations, as discussed below.

It is well established from research on paired-associate learning (e.g., Lewis and Anderson 1976) that it is easier to retrieve a given association (e.g., Tom is a CEO) if it was originally learned in isolation than if it was learned embedded among multiple associations to the same associate (e.g., Tom is tall; Tom is CEO; Tom lives in Dallas). This is because multiple associations increase the chance of proactive and retroactive interference (cf. Underwood 1983). Suppose that a set of compelling brand claims is presented either in isolation or embedded among less-compelling claims. Memory for the more compelling claims should be greater in the isolated-learning case than in the embedded-learning case.
Should the target brand be challenged, the “part-worth” of the subset of information that a consumer will be able to access may be greater in the former case than in the latter. As a result, even if the initial evaluations are equivalent, the post-challenge brand evaluations may be more favorable after isolated-learning than after embedded-learning. While conflicting with the attitude strength thesis that a higher amount of information leads to greater resistance, this proposition is consistent with studies on the “dilution effect” in impression formation. These studies show that cues that are strongly predictive of category membership tend to be less influential if they are mixed with less predictive cues (e.g., Nisbett, Zukier, and Lemley 1981; Zukier 1982).

H1: Even if the initial brand evaluations are equivalent, post-challenge brand evaluations may be more favorable if a brand’s compelling claims are learned in isolation than if they are learned embedded among less compelling claims.

The differential accessibility of a judgment-relevant input is not just a function of its learning context (embedded vs. isolated); it is also a function of its intrinsic memorability. It has been shown (e.g., Carlston 1980; Chattopadhyay and Alba 1988) that judgmental abstractions (e.g., “powerful”) are more memorable than are factual details (e.g., “fuel-injected,” “turbo-charged”). Therefore, over time, such abstractions tend to carry a greater weight on judgments, especially if the abstractions have been self-generated (e.g., Moser 1992). An interesting example of abstract input with high intrinsic memorability is puffery. Puffery refers to the use of hyperbolic nonspecific claims about a brand’s superiority, such as “The Ultimate Driving Machine” (see Richards 1990). It has been observed that as a result of their intrinsic memorability, the influence of puffery claims on brand evaluations tends to increase over time (Alba, Marmorstein, and Chattopadhyay 1992). We argue that in post-challenge brand evaluations puffery claims may be relatively more accessible than factual claims. Because of its memorability advantage, a nonspecific, yet subjectively compelling,
single puffery claim (e.g., "the best money can buy") may result in more favorable post-challenge brand evaluations than do several factual claims, even if the initial evaluations are equivalent. This prediction would also be inconsistent with the thesis that more information necessarily leads to higher judgmental resistance.

H2: Exposure to a single puffery claim may subsequently result in more favorable post-challenge brand evaluations than exposure to several factual claims, even if the initial brand evaluations are equivalent.

**Diagnosticsity: Comparative Framing and Attribute Commensurability**

Post-challenge brand evaluations will depend not only on the relative accessibility of the inputs, but on their relative diagnosticsity. We argue that the diagnosticsity of prior information about the target relative to information conveyed by the challenge will be affected by the nature of the challenge. In previous studies on attitude resistance (Hautgedt et al. 1994; Wood 1982), the challenge consisted of counterattitudinal information about the target provided in a noncomparative format. However, the ubiquity of comparative advertisements, as well as the construction of publications such as Consumer Reports, suggests that many challenges take on a comparative format. It has been established that the diagnosticsity of an input (e.g., "Car A gives 20 mpg") increases if information about the range of possible values for this input (e.g., "mpg typically goes from 16 to 28") is also provided (e.g., Goldstein 1990; Pham 1996). Everything else equal, challenges presented in a comparative format (e.g., "Car B gives better mileage than Car A") should therefore have higher perceived diagnosticsity than challenges presented in a noncomparative format (e.g., "Car A does not give good mileage"). This is because a comparative format provides a competitive frame for interpreting the value of the inputs, whereas a noncomparative format does not. A higher diagnosticsity of challenges presented in a comparative format may also explain why comparative ads tend to increase the scrutiny of product claims (Droge 1989).
We therefore propose that the weight of prior target information in post-challenge brand evaluations will be lower if the challenge is framed in a comparative format than if it is framed in a noncomparative format. This prediction qualifies the proposition that more information necessarily leads to higher judgmental resistance.

H3a: The weight of prior target information in post-challenge brand evaluations will be lower if the challenge is framed in a comparative format that if it is framed in a noncomparative format.

H3b: The weight of information contained in the challenge in post-challenge brand evaluations will be higher if the challenge is framed in a comparative format than if it is framed in a noncomparative format.

In addition to the comparative vs. noncomparative framing of the challenge, we suggest that the diagnosticity of the inputs in post-challenge brand evaluation will depend on the commensurability between the target brand’s attributes and those of competitor brands to which it is explicitly (e.g., via comparative ads) or implicitly (e.g., via noncomparative ads) compared. Commensurability, sometimes called alignability (Markman and Medin 1995), can be defined as the extent to which the alternatives are described along common (as opposed to unique) features or dimensions (e.g., Slovic and MacPhillamy 1974). It has been repeatedly shown that in choice situations commensurable dimensions are weighed more heavily than are noncommensurable features or dimensions (e.g., Markman and Medin 1995; Slovic and MacPhillamy 1974). As a result, evaluations of alternatives tend to be more polarized when the alternatives differ on commensurable features, and more moderate when the options differ on noncommensurable features (e.g., Sanbonmatsu et al. 1997). Further, commensurability determines the degree of status-quo bias in repeat purchase decisions (Muthukrishnan 1995). Consider a situation in which the challenge consists of a noncomparative exposure to a superior competitor brand. A comparison between the
competitor’s attributes and consumers’ memory for the target brand’s attributes should be much more diagnostic (i.e., revealing of the competitor’s superiority) if the two sets of attributes are commensurable than if they are noncommensurable. Therefore, in forming their post-challenge evaluations, consumers should be more likely to rely on such a comparison process if the two brands have commensurable sets of attributes.

A comparison process presumes that at the time of the challenge the consumers have adequate memory for the target brand’s attributes. Because memory for the target brand’s attributes depends on how well these attributes were encoded, the role of attribute commensurability in post-challenge brand evaluation should be moderated by the amount of elaboration of the target’s information that took place prior to the challenge. Should a competitor brand be superior on attributes that are commensurate with those of the target, initial elaboration of the target’s information may actually result in lower post-challenge brand evaluations. This prediction contradicts the hypothesis that elaboration of the target’s information increases attitudinal resistance. It also highlights the fact that accessibility and diagnosticity are not independent but interrelated properties of the inputs.

H4: In case of a noncomparative attack by a superior competitor brand, initial elaboration of the target brand’s information may hurt post-challenge brand evaluations if the competitor’s attributes are commensurate with those of the target.

In summary, we propose that post-challenge brand evaluations are not just a function of the amount of information and elaboration. Post challenge brand evaluations depend to a large extent on the relative accessibility of the various inputs after the challenge has occurred. Specifically, we propose that the favorability of post-challenge brand evaluation does not depend on the amount of information underlying the prior evaluation per se, but on the subsequent accessibility of brand inputs of high part-worth. In fact, a high amount of information may hurt post-challenge brand evaluations when sets of compelling claims are
embedded among less compelling claims--a prediction (H1) tested in Experiment 1. Conversely, a lesser amount of information may increase post-challenge brand evaluations provided that this information is intrinsically memorable and seductive, as is the case with puffery--a prediction (H2) tested in Experiment 2. We also propose that the weight placed on prior information about the target is contingent upon the diagnosticity of this information relative to information contained in the challenge. Because challenges framed in comparative formats have high perceived diagnosticity, they prompt consumers to place a lesser weight on prior information about the target--a prediction (H3a) tested in Experiments 3--and a greater weight on information contained in the challenge itself--a prediction (H3b) tested in Experiment 4. Finally, we show that in noncomparative challenges involving exposure to a superior competitor brand, elaboration of information about the target may result in lower post-challenge brand evaluations to the extent that the target’s and competitors’ attributes are commensurable--a prediction (H4) examined in Experiment 5.

**EXPERIMENTS 1A AND 1B**

Experiments 1A and 1B examine a situation in which initial learning of a larger amount of information about a target brand may actually weaken the brand’s subsequent evaluation following a challenge. These experiments test the hypothesis that post-challenge brand evaluations will be higher if the brand’s most compelling features are learned in isolation than if they are learned embedded among less compelling features (H1). Moreover, these experiments attempt to demonstrate that this effect can occur even if the initial evaluations are equivalent across learning conditions. Theoretically, embedded learning provides more information about the target than does isolated learning. However, embedded learning is also likely to decrease the subsequent accessibility of the target brand’s most compelling information. As a result, the subset of the information that can be accessed about the target following a challenge may have a lower "part-worth," thereby decreasing post-
challenge evaluations of the target. Initial evaluations would be less affected by the learning context (embedded vs. isolated) because, when the initial evaluations are formed, most of the information about the target is still readily accessible.

Subjects in Experiments 1A and 1B were exposed to print ads about a new brand and asked to form an initial evaluation of the brand. In one condition, the ads focused on the target brand's three most compelling features. In the other condition, these feature claims were embedded among six other positive but less compelling claims. The only difference between Experiments 1A and 1B was in the embedding format. Two days later, subjects were exposed to mildly negative information about the target (the challenge). Their (post-challenge) evaluation of the target was reassessed. We predicted that, in both studies, post-challenge evaluations would be more favorable in the isolated learning condition than in the embedded learning condition, even though the initial evaluations were equivalent.

Experiment 1A: Method

Subjects and Design. Subjects in this experiment as well as in the subsequent experiments were business undergraduates (about 53% females), who participated to receive course credit in a marketing course. Fifty-one subjects were assigned randomly to one of two experimental conditions: isolated learning (low amount of information) or embedded learning (high amount of information). The experiment also included two control groups (26 subjects). The control groups replicated the two experimental conditions (isolated vs. embedded learning), except that subjects in the control groups were not exposed to the challenge. These control groups allow us to assess how the two learning contexts affect the sheer persistence of the evaluations in the absence of a challenge.

Procedure. The experiment was administered in two classroom sessions conducted two days apart, using a procedure consistent with that of Haugetvedt et al. (1994). The first session was introduced as a pilot test for a new TV cartoon series aimed at college students.
Subjects were told that, because the project was still in its early stages, the pilot test would be conducted with a print version of the program's storyboard presented in a booklet. Subjects were also told that, in order to simulate the experience of watching TV, there would be ads scattered at intervals through the booklet. Subjects were asked to read the booklets at a steady pace, pretending that they were at home watching TV. Each booklet consisted of a series of panels taken from a comic book among which three pods of advertisements were inserted. Each pod contained two advertisements, one for the target product (a pen called Omega) and one for a filler product (a supermarket). Subjects were given about 20 minutes to read the booklets. After reading the booklet, subjects completed a questionnaire assessing initial evaluations of the target brand and the filler brand. Subjects were told that there would be another session two days later in which they would be asked to evaluate more advertisements.

When subjects returned, they were first reminded of the brand names that they had evaluated in session 1. They then read a Consumer Reports-type document (the challenge) which conveyed negative information about the target brand and neutral information about the filler brand. After reading this document, subjects were administered another questionnaire which again measured their evaluations of the target and filler brands. Memory for the target brand information presented during the first session was also assessed.

**Learning Context and Amount of Information.** The key manipulation pertains to the target information that subjects received during ad exposure in Session 1. All subjects were exposed to a total of three ads each featuring the picture of the product, the picture of a spokesperson and the brand name. The experimental conditions were therefore equivalent in terms of brand name familiarity and endorser likability. The experimental conditions differed in the number of claims that were communicated about the target brand. In the embedded learning (high amount of information) condition, subjects were exposed to a total of nine
claims about the target equally distributed across three executions of the target ad (three claims per execution). The target's three most compelling claims, as determined by a pretest, appeared in the last execution of the target ad. In the isolated learning (low amount of information) condition, subjects were exposed only to the target's three most compelling claims. As in the embedded learning condition, the three claims appeared in the third execution; the first two executions contained no claims. Presenting all three claims in a single execution ensured that the claims received the same amount of attention as in each execution of the embedded learning condition.

**Direct Attack as a Challenge.** During the second session, subjects in the two experimental conditions received additional information about the target brand in the form of a *Consumer Reports*-type document. The report discussed the filler brand (the supermarket) in neutral terms, but portrayed the target brand in a negative light. As in Haugtvedt et al. (1994), the attack on the brand was not intended to be fatal. Therefore, the report focused on problems about the brand that were relatively minor (e.g., the package was difficult to open, the pen came only in three colors). Subjects in the two control groups reported their evaluation of the target in session 2 without receiving any information that challenged their previously formed evaluations. These control groups were used to ensure that the embedded and isolated conditions resulted in the same degree of attitudinal persistence.

**Dependent Variables.** In both sessions, brand evaluation was measured on two 9-point scales anchored by bad-good and unfavorable-favorable $r = 0.84$). The main dependent variable was the post-challenge brand evaluation. In order to further examine the underlying processes, memory for the target brand information (presented during the first session) was measured through free recall. Each recall item was coded as accurate/inaccurate by two judges who were blind to the objectives of the experiment and to the experimental manipulations (agreement = 90 percent; disagreements resolved by one of the authors).
**Analysis Plan.** As stated previously, the primary objective of this research is to examine how post-challenge brand evaluations are affected by factors surrounding the formation of initial brand evaluations as well as factors occurring at the time the brand is challenged. In this experiment, as well as in the subsequent experiments, the main dependent variable was therefore the post-challenge evaluation of the target brand. Two controls were implemented to ensure that differences in post-challenge brand evaluations could *not* be accounted for by differences in initial brand evaluations. First, in every experiment involving a manipulation in the first session (when the initial evaluations were formed), the stimuli were calibrated in such a way that the initial brand evaluations were largely equated across conditions. Second, heterogeneity in prior brand evaluation was further controlled by analyzing the main dependent variable (the post-challenge brand evaluation) with an ANCOVA, where the prior brand evaluation served as a covariate. Tests showed that this covariate did not interact with any of the experimental factors, which indicates that the ANCOVA assumption of homogeneity of regression slopes was met. \(^1\)

**Experiment 1A: Results**

It was predicted that post-challenge brand evaluations would be more favorable in the isolated learning condition than the embedded learning condition. It was further hypothesized that this effect would occur even if the prior evaluations were equivalent and equally persistent in the absence of a challenge to the brand. To test the latter assumption, we first analyzed the data of the control groups.

**Prior Brand Evaluations and Persistence.** Recall that in Session 1 subjects in the control groups were exposed to the same information as were subjects in the experimental groups (i.e. isolated versus embedded). However, in Session 2 subjects in the control groups reported their evaluation of the target brand without having been exposed to the attack on the
brand. These subjects’ brand evaluations were submitted to a 2 x 2 mixed ANOVA, with learning condition (isolated vs embedded) as a between subject factor and time of measurement (Session 1 vs. Session 2) as a repeated factor. The analysis showed that the learning conditions yielded equivalent prior evaluations ($X_{time1} = 5.30$ for isolated learning and $X_{time1} = 5.62$ for embedded learning, $F(1, 24) < 1$). The analysis also showed that the two learning conditions yielded equally persistent evaluations ($X_{time2} = 5.02$ for isolated learning and $X_{time2} = 5.29$ for embedded learning; $F(1, 24) < 1$). Further, neither the effect of time nor the time by learning type interaction was significant ($F < 1$). Hence, experimental differences in the post-challenge brand evaluations cannot be accounted for by differences in prior evaluations or differences in persistence of the initial evaluation.

**Post-Challenge Brand Evaluations.** The mean post-challenge evaluations in the experimental groups are reported on the left-hand side of Table 1. These evaluations were submitted to a one-way ANCOVA with learning condition (isolated vs. embedded) as a between subject factor and prior evaluation as a covariate. The analysis revealed a significant effect of the learning condition ($F(1,48) = 5.27$, $p < 0.03$). As predicted, post-challenge brand evaluations were significantly lower in the embedded learning (high amount of information) condition ($X = 4.14$) than in the isolated learning (low amount of information) condition ($X = 4.78$). This result is the opposite of what would be predicted by previous research on the relationship between amount of information and attitude resistance.

[Insert Table 1 about here]

**Recall.** The total number of claims recalled was higher in the embedded (high amount of information) condition ($X = 1.33$) than in the isolated (low amount of information) condition ($X = 0.92$, $F(1, 49) = 3.62$, $p < 0.07$). This is hardly surprising, given that the subjects in the embedded learning condition were exposed to a total of nine claims, whereas subjects in the isolated learning condition were only exposed to three claims. However, as
predicted, recall of the three most compelling claims was greater in the isolated learning condition \( (X = 0.92) \) than in the embedded learning condition \( (X = 0.48, F (1, 49) = 4.80, p < 0.03) \). This finding is consistent with the hypothesis that, if post-challenge evaluations were more favorable in the isolated learning condition, it is because the brand's most compelling features were more accessible. A mediation analysis supporting this interpretation is reported later.

**Experiment 1B**

One could argue that the main finding of Experiment 1a—that post-challenge brand evaluations were more favorable in the isolated learning condition than in the embedded learning condition—was due to the particular presentation formats used in Session 1. It is possible, for instance, that subjects in the embedded learning condition were less involved with the task by the time they were exposed to the third execution (which contained the most compelling claims). In contrast, subjects in the isolated learning condition may have been more involved with the task when they saw the third execution, because the first two executions did not contain any claim. This explanation does not necessarily contradict the proposition that the more favorable post-challenge brand evaluations in the isolated learning condition were caused by a higher accessibility of the brand's most compelling claims. Nevertheless, the purpose of Experiment 1B was to replicate the findings of Experiment 1A using a different presentation format.

**Method**

Thirty subjects were randomly assigned to one of two learning conditions. As in Experiment 1A, subjects in the embedded learning (high amount of information) condition were exposed to a total of nine claims across three executions of the target ad (three claims per execution). Unlike in Experiment 1A, the three most compelling claims were distributed across the three executions (one claim per execution) instead of being concentrated in the
third execution. In the isolated learning condition (low amount of information), subjects were again exposed only to the three most compelling claims. Unlike in Experiment 1A, these claims were also distributed across the three executions. The order of presentation of the three most compelling claims was the same across condition. The remainder of the procedure was identical to that of Experiment 1A.

Results

Post-Challenge Brand Evaluation. The mean post-challenge brand evaluations are reported on the right-hand side of Table 1. As in the previous experiment, an ANCOVA of these evaluations revealed a significant main effect of the learning condition (F(1, 27) = 7.63, p < 0.02). Again, post-challenge brand evaluations were higher in the isolated learning (low amount of information) condition (X = 4.59) than in the embedded learning (high amount of information) condition (X = 3.90). It therefore seems unlikely that the results of Experiment 1A were due to the particular presentation format used in that experiment. Instead, the findings again appear to support the thesis that, under certain conditions, initial learning of a higher amount of information hurts subsequent brand evaluation following a challenge.

Recall. The recall results were very similar to those of Experiment 1A. The average recall rate for the three most compelling claims was slightly higher in the isolated learning condition (X = .94) than in the embedded learning condition (X = .43, F(1, 28) = 3.31, p < 0.08). This result is consistent with the proposition that differential accessibility of the most compelling claims mediated the post-challenge evaluation results. A stronger test of this proposition is offered below.

Mediational Analysis

We suggested that, in Experiments 1A and 1B, the more favorable brand evaluations in the isolated learning condition were mediated by subject’s better memory for the target brand’s most important attributes. This conjecture was tested by submitting the data of the
two experiments pooled together (n=81) to a mediational analysis (e.g., Baron and Kenny 1986). The results strongly supported the mediating role of memory for the most compelling claims. First, the independent variable (i.e., isolated vs. embedded learning) had a significant influence on the dependent variable (i.e., post-challenge brand evaluation (F(1, 78) = 9.70, p < 0.01). Second, the independent variable had a significant influence on the presumed mediator (i.e., memory for the three most compelling claims (F(1, 79) = 8.32, p<0.01). Finally, when both the independent variable (isolated vs. embedded learning) and the mediator (memory for the most compelling claims) were included in the model, the effect of the former was significantly reduced (F (1,77) = 2.61, p>0.1). The mean square of the effect of learning condition decreased by more than 75% and the effect of the mediator was still significant (F(1, 77) =18.28, p<0.001).

Discussion

In summary, both experiments support the hypothesis (H1) that post-challenge brand evaluations will be higher if the brand's most compelling claims are initially learned in isolation than if they are learned embedded among positive but less compelling claims. This finding suggests that, unlike what has been posited in the attitude strength literature, learning a high amount of information about a target does not necessarily lead to greater resistance to subsequent counter-attitudinal challenges. Results from the control groups further suggest that this finding cannot be attributed to differences in the initial evaluations or in the sheer temporal stability (or persistence) of these evaluations. The similarity of the results across both experiments suggests that the finding cannot be attributed to the peculiarity of the presentation format of the target information. Instead, the mediation analysis indicated that, compared to embedded learning, isolated learning resulted in more favorable post-challenge evaluations because it increased the likelihood that the brand's most compelling information would be accessed when the brand was challenged. Hence, a brand's resistance to counter-
attitudinal challenges does not seem to depend on the absolute amount of information that consumers possess but on their ability to recall pieces of information with high part-worth

**EXPERIMENT 2**

The purpose of this experiment is to further document that resistance to counter-attitudinal challenges depends largely on the accessibility of information about the target brand that has high subjective part-worth. In Experiments 1A and 1B, the accessibility of compelling information about the target brand was determined by the learning context. In Experiment 2, the accessibility of compelling information about the target was manipulated by varying the intrinsic memorability of the information. By virtue of their abstraction, puffery claims (e.g., "Sheer Driving Pleasure") tend to be more memorable than factual claims (e.g., "230 horse power, twin-cam, engine"). see Alba et al. 1992). Puffery statements can also be very seductive because of their hyperbolic rhetoric. As a result, exposure to a single puffery claim may result in more favorable post-challenge brand evaluations than exposure to several factual claims (H2), even if in theory the latter provide more substantive information.

Subjects were exposed to either a single puffery claim or to three factual claims that did not pertain to the brand’s most important attributes. We investigated our prediction concerning puffery's relative advantage with two types of challenges. In one condition, the challenge consisted of additional information about the target that was negative but not fatal, as in the previous experiments. In the other condition, the challenge was more indirect. Instead of receiving negative information about the target, subjects were exposed to very positive information about a competitor brand. These two conditions allow us to explore the generalizability of H2 across types of challenge.

**Method**

**Subjects and Design.** Seventy-three subjects were randomly assigned to one of four
experimental conditions of a 2 x 2 between-subjects design. The first factor had two types of information: a minimal amount of puffery information (a single puffery claim), or a higher amount of substantive information (three factual claims). The second factor had two types of challenges: a direct attack on the target, as in the previous experiments, or noncomparative praise of a competitor. In addition, as in Experiments 1A and 1B, 36 subjects were assigned to one of two control conditions. In the first session, subjects in the control conditions were exposed to the same two types of target information as in the experimental conditions (puffery or substantive). However, in the second session, subjects in the control conditions reevaluated the target brand without being exposed to any challenge to the brand. Again, these control conditions allow us to assess whether the two types of information resulted in comparable initial evaluation and similar degrees of evaluative persistence over time.

Procedure. The procedure of this experiment was similar to that of Experiment 1A. Under the guise of pilot-testing a new TV show, subjects were exposed to three executions of the target ad embedded among a series of comic book panels. In every condition, the first two executions featured the picture of the product, a spokesperson, and the brand name, but did not mention any brand claim. The key manipulation occurred in the third execution. In the substantive information condition, the third execution included three claims (e.g., "A special feature of Omega 3 provides a comfortable grip"). which a pretest had shown to be of moderate importance. In the puffery condition, the third execution featured a single puffery claim: "The Best Pen Money can Buy."

In the second session, subjects in the experimental conditions received a Consumer Reports-type document, which manipulated the type of challenge. In the direct attack condition, the report contained the same negative information about the target brand as in the previous experiments. In the competitor praise condition, the report did not mention the target brand directly, but cited highly positive information about a competitor brand (a pen
called Elegance). In the control condition, subjects reported their evaluations of the target brand without being exposed to any challenging information about the target. The remainder of the procedure was identical to that of Experiments 1A and 1B.

Results

It was predicted that under both types of challenges, subjects in the puffery condition would report more favorable post-challenge brand evaluations than would subjects in the substantive condition. This effect would occur even if the prior evaluations were equivalent and similarly persistent over time, because of the intrinsic memorability of abstract puffery claims.

Evaluation Persistence. In the puffery and three claims control conditions, the mean initial evaluations were 5.08 and 5.19 respectively. At time 2, there was hardly any change in the initial evaluations in either condition (X_{puffery} = 4.94 and X_{three claims} = 4.97). A repeated ANOVA revealed that neither the main effects of information (F<1) and time (F 1, 34=1.01, p>0.32) nor their interaction (F<1) was significant. Thus, the two levels of information were largely equivalent in terms of sheer evaluation persistence.

Post-Challenge Brand Evaluation. The post-challenge evaluations were submitted to a 2-way (type of information by type of attack) ANCOVA, with prior evaluation as a covariate. The mean evaluations are reported in Table 2. The analysis revealed a main effect of attack (F(1, 68) = 11.79, p<0.01). Post-challenge evaluations were lower in the direct attack condition than in the competitor praise condition (X_{direct} = 3.39 and X_{praise} = 4.06). More important, the analysis also revealed a main effect of type of information (F(1, 68) =23.28, p<0.001). As predicted, post-challenge evaluations in the three claims condition (X_{claims} = 3.26) were significantly lower than in the puffery condition (X_{puffery} = 4.2). This effect was
not qualified by an interaction with the type-of-attack (F (1, 68) <1), suggesting that it may be generalizable across different types of attack.

[Insert Table 2 About Here]

**Mediating Effect of Recall.** It was hypothesized that the post-challenge evaluative advantage of puffery over factual claims would be driven by the higher intrinsic memorability of the former type of information. Consistent with this hypothesis, only 31.6 percent of subjects in the three claims condition were able to recall at least one claim. In contrast, a significantly higher proportion of subjects in the puffery condition (54.3%) were able to recall the puffery claim (Z=2.03, p<0.05). To further examine the mediating influence of information memorability on the post-challenge evaluations, a mediational analysis similar to that of Experiments 1A and 1B was conducted. A dummy variable was computed to capture whether a subject recalled at least one claim (in the factual-claim condition) or the puffery claim (in the puffery condition). This dummy variable was entered as an additional predictor in a 2-way (type of information by type of attack) ANCOVA of the post-challenge brand evaluations. As expected the dummy recall variable strongly related to the favorability of post-challenge brand evaluations (F (1,67) = 20.2, p<0.001). Furthermore, introduction of this additional predictor substantially—though not completely—reduced the effect of type of information (F (1,67) = 17.74, p<0.001; the mean-squares of this effect dropped by 40%). These results thus suggest that the greater memorability of puffery information partially mediated its effects on post-challenge evaluations.

**Discussion**

Consistent with Hypothesis 2, it was found that initial exposure to a single puffery claim may subsequently lead to more favorable post-challenge evaluations than exposure to three moderately important claims. The effect was obtained both when the challenge was a direct attack on the target and when the challenge was a noncomparative praise of a competitor,
suggesting that this effect may generalize across types of challenges. Thus, initial learning of a higher amount of information may be neither necessary nor sufficient for ensuring attitudinal resistance.

Consistent with our predictions, the results appear to be mediated by the greater inherent memorability of puffery information compared to substantive claims. However, only partial mediation was uncovered. It is possible that our dummy recall variable was too crude to capture the memory advantage of puffery information. Alternatively, puffery may also enhance resistance to counterattitudinal challenges for reasons beyond sheer accessibility. As Alba et al. (1992) recently suggested, puffery information may also appear very seductive and compelling.

**EXPERIMENT 3**

The previous experiments have documented the importance of information accessibility in post-challenge brand evaluations. The purpose of this experiment is to examine how the diagnosticity of the information affects post-challenge brand evaluations. The experiment tests the prediction that the amount of information possessed about the target will have less influence on post-challenge brand evaluations if the challenge is framed in a comparative format than if the challenge is framed in a noncomparative format (H3b). This is because a comparative framing of the challenge increases the diagnosticity of the information contained in the challenge itself.

Subjects in this experiment formed initial evaluations of the target brand based on either a high or low amount of information. Unlike in Experiments 1A and 1B, the claims in the low amount of information condition were not more compelling than the ones in the high amount of information condition. Amount of information was thus expected to enhance rather than hurt post-challenge brand evaluations. Subjects were subsequently exposed to one of two types of challenges to the target brand. In the direct attack condition, the
challenge consisted of negative information about the target brand provided in a noncomparative format, as in Experiments 1A and 1B. In the comparative condition, the same negative information about the target was provided, but phrased in a comparative format. It was predicted that, in the direct attack condition, post-challenge brand evaluations would be higher in the high amount of information condition than in the low amount of information condition—replicating previous findings (e.g., Haugtvedt et al. 1994; Wood 1982). However, in the comparative attack condition, amount of information was predicted to have little effect on post-challenge brand evaluations.

Method

Subjects, Design, and Procedure. A total of 102 subjects were randomly assigned to one of four conditions of a 2 x 2 between-subjects design. The first factor manipulated the amount of information learned about the target brand: low or high. The second factor manipulated the type of challenge: direct attack or comparative attack. Data from four subjects who did not return for the second session were excluded. The experiment was administered in two sessions, and the procedure was similar to that followed in the previous experiments. Amount of information was manipulated in the first session and type of attack was manipulated in the second session.

Amount of Information. In the high amount of information condition, subjects were exposed to the same information as in the embedded learning condition of Experiment 1A. They were exposed to a total of nine claims distributed across three executions of the target ad. In the low amount of information condition, subjects were exposed to only three claims which appeared in the third execution (the first two executions contained the brand name and the spokesperson as in experiments 1A and 2). The three claims of moderate importance were the same ones that were used in experiment 2.

Type of Attack. As in Experiments 1 and 2, subjects in the direct attack condition
received information in a noncomparative format that portrayed the target brand in a negative light. The report stated, for instance, that “Packages in which the Omega 3 pens were shipped were difficult to open if the instructions were not carefully followed.” In the comparative attack condition, the same information was presented by comparing the target brand with a competitor brand called Elegance. For instance, the report stated that “Compared to those of the Elegance, the packages in which the Omega 3 pens were shipped were difficult to open if the instructions were not carefully followed.”

It was expected that the diagnosticity of the challenging information would be higher in the comparative attack condition than in the direct attack condition. This assumption was documented by a manipulation check study reported hereafter. It is important to note that the direct and comparative attacks were calibrated in such a way that they would portray the target brand in an equally negative light. This assumption was also validated by a confounding check discussed below.

Results

Manipulation and Confounding Checks. To assess whether the two types of attacks manipulated the diagnosticity of the information as intended, 44 subjects from the same population were exposed to the same information as subjects in the main experiment. After reading one of the two types of challenges, subjects rated the usefulness of the information provided in the challenge to reevaluate the target (1 = not at all useful; 9 = extremely useful; see Feldman and Lynch 1988, p. 425). As expected, the challenging information was perceived to be more useful in the comparative attack condition \(X = 6.55\) than in the direct attack condition \(X = 5.27, F(1, 42) = 4.68, p < 0.04\), confirming that challenges framed in a comparative format tend to be more diagnostic for post-challenge brand evaluations than challenges framed in a noncomparative format. As a confounding check, subjects in the main experiment were also asked to rate the perceived negativity of the attacks. Consistent with
pretest results, the two attacks did not vary in terms of perceived negativity (X_{direct} = 3.68 and X_{compar.} = 3.54, F < 1). In summary, the two types of attacks differed in terms of the diagnosticity of the challenging information, but not in terms of its negativity.

The number of attributes recalled at time 2 provides a check for the amount of information manipulation. An ANOVA testing the effects of amount of information, type of attack, and their interaction revealed only a main effect of amount of information. As expected, subjects in the high information condition recalled more attributes (X = 1.19) than those in the low information condition (X = 0.48, F (1,94) = 18.64, p < 0.001).

A pretest (N=25) also confirmed that the two levels of information were equal in terms of evaluation persistence (X_{time1} = 5.30 and X_{time2} = 5.15 in the high information condition and X_{time1} = 5.15 and X_{time2} = 4.96 in the low information condition). Neither the main effects of time (F(1, 23)=1.04, p>0.3) and information (F<1) nor their interaction (F<1) was significant. Thus, the results presented below cannot be explained by between-conditions differences in terms of evaluation persistence.

Post-challenge brand evaluations. The post-challenge brand evaluations were submitted to a 2-way amount of information by type of attack ANCOVA, with prior evaluation as a covariate. The mean evaluations are reported in Table 3. The analysis revealed a significant main effect of amount of information. Consistent with Haugtvedt et al.’s (1994) findings, post-challenge brand evaluations were more favorable in the high amount of information condition (X = 4.25) than in the low amount of information condition (X = 3.60; F(1, 93) = 5.77, p < 0.02). However, this main effect was qualified by a significant interaction with the type of attack (F(1, 93) =5.54, p < 0.03). While the simple effect of the amount of information was significant under direct attack (X_{low} = 3.36, X_{high} = 4.66, F (1, 93) =9.27 , p< 0.01), it was not significant under comparative attack (X_{low} = 3.84, X_{high} = 3.87, F(1,93) < 1). This pattern of interaction indicates that the relationship between amount of information and
post-challenge brand evaluation depends on the type of attack, which determines the diagnosticity of the various pieces of information after the brand has been challenged. To further document the underlying process, a mediation analysis was conducted.

[Insert Table 3 about Here]

**Mediation Analysis.** We propose that the reason why amount of information influenced post-challenge brand evaluations in the direct attack condition but not in the comparative attack condition is that, compared to information contained in the challenge, previously learned information was perceived to be more diagnostic following a direct attack than following a comparative attack. If this process was indeed at work, the amount of prior information subjects could recall following the challenge should be a better predictor of post-challenge brand evaluations in the direct attack condition than in the comparative attack condition. Claim recall was therefore entered as an additional predictor in an ANCOVA of post-challenge evaluations for each type of attack. Consistent with our predictions, the effect of claim recall—the presumed mediator—was significant in the direct attack condition (F(1,43)=5.51, p < 0.03) but not in the comparative attack condition (F(1,48)=0.76, p>0.38). In the direct attack condition, inclusion of claim recall as an additional predictor reduces the mean squares associated with the effect of amount of information from 19.63 to 7.13, a reduction of 63%.

**Discussion**

The results of this experiment extend previous research on the effect of amount of information on attitudinal resistance by showing that this relationship is contingent upon the type of attack. When the attack took the form of negative information about the target provided in a noncomparative format, the amount of target information that subjects had learned indeed affected their post-challenge evaluations of the target. This finding replicates previous results (e.g., Wood 1982). Because the additional
information only referred to the target, prior information about the target was presumably very diagnostic, hence prior target information served as a primary input to the post-challenge evaluations. Post-challenge evaluations, and hence attitudinal resistance, were higher when the negative information contained in the attack was pit against a more extensive structure (Haugtvedt et al. 1994). Results about the mediation effect of claim recall are consistent with this interpretation.

In contrast, when the attack was in a comparative format, the amount of target information that subjects had learned did not affect their post-challenge evaluations. It appears that subjects exposed to the comparative challenge were less inclined to rely on previously learned information. The mediation analysis of the recall data is also consistent with this interpretation.

The moderating influence of the type of attack cannot be explained in terms of the negativity of the challenging information. Instead, it appears that subjects found the comparative challenge to be relatively more diagnostic than the noncomparative challenge. Again, the findings suggest that initial learning of a higher amount of information about the target brand is not sufficient to produce greater resistance to challenges, especially when the challenging information is perceived to be very diagnostic.

**EXPERIMENT 4**

The results of Experiment 3 indicate that prior target information is given less weight when the challenge is framed in a comparative format than when it is framed in a noncomparative format. Implied by these results is the corollary proposition that information contained in the challenge is given more weight when presented in a comparative format than when presented in a noncomparative format (H3b). The present experiment offers a direct test of this proposition. One way of assessing the weight of an input in an evaluation task is to manipulate the evaluative strength of this input and examine the simple effect of this manipulation on the evaluation (e.g., Pham 1996). In this experiment we manipulated the strength of the challenging information by
varying the number of negative pieces of information presented in the attack. If challenging information receives a greater weight when presented in a comparative formation than when presented in a noncomparative format, the number of pieces of information contained in the challenge should have a greater influence in the former case than in the latter.

Method

A total of 114 subjects were assigned to one of four conditions of a 2 x 2 between-subjects design. The first factor manipulated the type of attack (direct vs. comparative), whereas the second factor manipulated the number of pieces of information contained in the attack (2 vs. 5). In the first session, all subjects were exposed to nine claims about the target (as in the high amount of information conditions of previous experiments) and expressed their initial evaluations. As in Experiment 3, two days later, subjects were exposed to either a direct attack or a comparative attack on the brand. Within each type of attack, the number of challenging pieces of information was varied. Subjects in the weak attack condition received two pieces of information challenging the target, whereas subjects in the strong attack condition received five pieces of information. The remainder of the procedure was the same as in Experiment 3.

Results and Discussion

The mean post-challenge evaluations are reported in Table 4. A 2-way (attack by number of claims) ANCOVA, with initial evaluation as a covariate, revealed significant main effects of both the type of attack (F (1, 100) = 15.2, p < 0.001) and strength of the attack (F (1, 100) = 14.2, p < 0.001). More important, these main effects were qualified by a significant interaction between type of attack and strength of attack (F (1, 100) = 3.68, p < 0.06). Follow-up tests revealed that, when they were phrased in a noncomparative format, the number of pieces of information contained in the attack did not have any effect on post-challenge evaluation (X2pieces = 5.58, X5pieces = 5.17, F < 1). However, when they were phrased in a comparative format, the number of pieces of information contained in the attack had a strong influence on post-challenge evaluations (X2pieces
= 5.14, X^2_{pieces} = 3.85, F (1, 100) = 17.02, p < 0.001). There was therefore strong evidence that the claims presented in the challenge receive greater weight in post challenge evaluations under comparative format than under direct format. Together with the findings of Experiment 3, these results indicate that, because of their high perceived diagnosticity, challenges framed a comparative format decrease the weight of prior target information and increase the weight of information conveyed by the challenge itself.

[Insert Table 4 about Here]

**EXPERIMENT 5**

Experiments 3 and 4 indicate that the influence of prior information on post-challenge brand evaluations depends on the relative diagnosticity of the challenging information. The first objective of this experiment was to provide triangulated evidence of the effects of information diagnosticity, by using a different manipulation of this construct. In the previous experiments, the diagnosticity of the challenging information was manipulated by varying its comparative versus noncomparative format. In this experiment, the diagnosticity of the challenging information was manipulated by varying its commensurability with the target brand information. Prior research has shown that high commensurability increases the diagnosticity of an input in judgment tasks (e.g., Slovic and MacPhillamy 1974; Markman and Medin 1995).

The second objective of this experiment is to test an important boundary condition of the "elaboration-resistance hypothesis" (Petty et al. 1995). This hypothesis holds that elaboration of the target information enhances subsequent resistance to counterattitudinal challenges. This is because elaboration is expected to increase the internal consistency of the attitude structure (e.g., Eagly and Chaiken 1995) as well as confidence in the attitude (e.g., Petty et al. 1995). In contrast, we suggest that in certain circumstances elaboration of the target information may actually harm subsequent resistance to counterattitudinal challenges. Consider a situation in which the challenge takes the form of a noncomparative exposure to a competitor whose attributes are objectively
superior to those of the target. Further assume that there is high commensurability between the two brands' sets of attributes. Elaboration of the target brand information should enhance the accessibility of the target's specific attribute values. This should facilitate an attribute-by-attribute comparison between the two brands, which would reveal the superiority of the competitor. In this situation, one would therefore expect elaboration to lower post-challenge evaluations of the target, and hence its resistance to attack. This prediction thus qualifies the elaboration-resistance hypothesis.

In this experiment, elaboration of the target's information was manipulated in session 1 by varying simultaneously its personal relevance and its exposure time (cf. Petty and Cacioppo 1986). Commensurability was manipulated in session 2 by varying the format of the challenging competitor information, which was objectively superior to that of the target. It was predicted that, in the high commensurability condition, high elaboration would result in lower post-challenge brand evaluations compared to low elaboration. This effect would not occur in the low commensurability condition.

Method

Subjects and Design. Two-hundred and twenty-five subjects were randomly assigned to one of four conditions of a 2 (commensurability) x 2 (elaboration) between-subjects design. Data from nine subjects who did not complete all the experimental tasks were excluded.

Procedure. The experiment was conducted in two parts separated by 90 minutes of a regular class lecture. The experiment was introduced as a study on consumers' evaluation of cameras. This product category was selected for two reasons. First, the elaboration manipulation required a certain level of product complexity. Second, the commensurability manipulation required a product that could be described by numerical attributes. In the first part, subjects saw an advertisement for the target brand, Camera X, under conditions of either high or low elaboration. Subjects then reported their initial evaluation of the target.
Ninety minutes later, as a challenge to the target brand, subjects saw an advertisement for a competitor brand, Camera Y. The Camera Y ad provided information that was either commensurable or noncommensurable with the target brand X information. After seeing the competitor's ad, subjects were administered a questionnaire that assessed their post-challenge evaluation of the target Camera X and the perceived difficulty of comparing the two brands.

**Elaboration.** In the high elaboration condition, subjects were led to believe that the camera would soon be available at a trade show organized by the student union. Further, subjects in this condition were given four minutes to process the instructions and the content of the advertisement. As established by a number of studies in the ELM paradigm, both manipulations enhance the likelihood of elaboration by increasing personal relevance and processing opportunity, respectively. In the low elaboration condition, subjects were told that the product would be available next year in a distant city and were given only one minute to process the instructions and the ad content.

**Commensurability.** The target ad shown in the first part of the study stated Camera X's country of origin as well as numerical information about the camera's weight (320 grams), and focus length range (35-60), shutter speed (1/3000), and exposure accuracy (experts' rating of 3 out of 5). A pretest had shown that these attributes, along with price, were considered to be the most important attributes in the choice of a camera. Commensurability of information was manipulated by varying the format of information provided in the competitor ad. In the high commensurability condition, Camera Y's attributes were described in the exact same format as Camera X's. Although the two brands share the same country of origin, Camera Y's numerical attributes (e.g., "weight: 280 grams") were clearly superior to those of Camera X. In the low commensurability condition, Camera Y's attributes were described using verbal labels (e.g., "weight: light") that were calibrated via a pretest to match the corresponding numerical values used in the high commensurability condition. Hence, the evaluative strength of the challenge did not vary across
commensurability conditions.

Results

Manipulation Checks

Memorability. It was expected that the elaboration manipulation would influence memory for the specific values of the target brand’s attributes. This assumption was examined in a pretest involving 49 subjects. The procedure closely paralleled that of the main experiment. In the first part of the pretest, subjects were exposed to the target ad under either high or low elaboration. In the second part of the pretest, subjects were exposed to an ad for the competitor brand described in a commensurable format. High commensurability provides a conservative estimate of the differences across elaboration groups. Instead of reporting their post-challenge evaluations of the target, subjects were asked to recall the values of the numerical attributes of the target brand. The attribute dimensions (e.g., “weight” and “focus length”) were provided as retrieval cues. The recall for each attribute was classified as accurate and inaccurate by a judge who was blind to the experimental conditions. As expected, an ANOVA revealed that the total number of attributes accurately recalled was significantly higher in the high elaboration condition (X = 2.17) than in the low elaboration condition (X = 1.12; F(1, 47) = 12.62, p < 0.01).

Commensurability and Diagnosticity. As expected, in the main study, subjects in the low commensurability condition perceived the comparison between the two brands to be more difficult than did subjects in the high commensurability condition (X_{low} = 4.62, X_{high} = 3.44, F(1,214) = 8.3, p < 0.01). Another pretest further examined how commensurability affected the perceived diagnosticity of the information contained in the competitor ad. In this pretest (n = 48), both the presentation format of the competitor’s attributes and the presentation format of the target’s attributes were factorially manipulated: verbal or numerical. The general procedure was the same as that of the main experiment. Subjects were first exposed to the target’s (Camera X) attributes, provided either as numerical values (e.g., “Weight: 320 grams”) or as verbal labels (e.g.,
"somewhat light"). The verbal labels corresponding to the specific numerical values were determined based on an earlier pretest. As in the main study, subjects were subsequently exposed to the competitor’s (Camera Y) objectively superior attributes also provided either in a numerical or verbal label format. Subjects were asked to assess how useful the information about Camera Y was for reevaluating Camera X (1 = "not at all useful:" 9 = "extremely useful"). As expected, a 2-way ANOVA revealed a significant interaction between the presentation formats of Camera X and Camera Y (F (1, 44)=4.66, p < 0.04). Specifically, information about Camera Y was perceived to be more useful when its presentation format matched that of the target Camera X (mean for verbal X-verbal Y = 6.18; mean for numerical X-numerical Y = 6.45 respectively) than when the presentation formats did not match (mean for verbal X- numerical Y= 5.08; mean for numerical X-verbal Y= 4.71). Therefore, the commensurability manipulation altered the diagnosticity of the information as intended.

**Post-Challenge Brand Evaluations**

Table 5 presents the mean post-challenge evaluations across levels of comparability and elaboration. A two-way (elaboration by commensurability) ANCOVA, with prior evaluation as a covariate uncovered a strong main effect of commensurability (F(1, 211) = 35.67, p<0.0001).

Post-challenge evaluations were higher in the low commensurability condition (X = 5.41) than in the high commensurability conditions (X = 4.37). In addition, there was a significant interaction between commensurability and elaboration (F(1,211) = 5.12, p < 0.03). In the low commensurability condition, elaboration did not have a significant influence on post-challenge evaluations (X_{Low Elab} = 5.30, X_{High Elab} = 5.52; F < 1). However, in the high commensurability condition, high elaboration resulted in significantly lower post-challenge evaluations (X_{Low Elab} = 4.65, X_{High Elab} = 4.09; F(1, 211) = 5.11, p<0.03). This result is consistent with the proposition that, under conditions of high dimensional commensurability, initial elaboration of the target's information may actually decrease subsequent resistance to noncomparative challenges from
superior competitors.

[Insert Table 5 about Here]

Discussion

The elaboration-resistance hypothesis holds that elaboration of the target information enhances resistance to counterattitudinal challenges (Petty et al. 1995). This experiment identifies an important boundary condition of this hypothesis. Elaboration of the target’s information can hurt subsequent resistance if the challenge comes from an objectively superior brand that is described in commensurable terms. This is because, as demonstrated by our pretest, elaboration increases the memorability of the brand’s specific attributes’ values. The recalled attributes can then more easily be compared with the competitor’s attributes if they are described in commensurable terms.

It is interesting that even in the low commensurability condition, high elaboration did not enhance post-challenge evaluations. This may perhaps be explained by the fact that in this experiment, unlike in previous research, the attack focused on the competitor’s attributes rather than those of the target. As a result, subjects in the low commensurability condition may not have felt compelled to retrieve the target brand’s information to form their post-challenge brand evaluation-challenge evaluations.

Again, our results can be explained within an accessibility-diagnosticity framework. As shown by our manipulation check and pretest, commensurability appears to be an important determinant of the diagnosticity of the inputs during post-challenge evaluation. High commensurability increases the diagnosticity of the challenging information because it facilitates the mapping—or “alignment” (Markman and Medin 1995)—between this information and previously learned information about the target. The results also intimate a possible refinement of the Feldman and Lynch (1988) framework, which treats accessibility and diagnosticity as separate determinants of an input’s utilization. However, this experiment’s results suggests that the
diagnosticity of an input can itself be determined by the accessibility of another. In the high
commensurability condition, the superiority of the competitor's attributes was most influential
when subjects were able to recall the target brand's specific attributes values (in the high
elaboration condition).

The main effect of commensurability in this experiment, together with the results in the
competitor praise condition of Experiment 3, suggest that under low commensurability, praising
the competitor may not seriously challenge existing evaluations toward the target. As a result,
subjects appear to have anchored upon their initial evaluations regardless of the extent of
elaboration (time one evaluation means are 5.36 and 5.28 in the low comparability-low elaboration
and low comparability-high elaboration conditions, respectively

**GENERAL DISCUSSION**

Given the competitiveness of today's marketplace, it is important to understand how
consumers evaluate brands that they previously liked when they are challenged. The attitude
strength literature (e.g., Eagly and Chaiken 1993; Petty and Krosnick 1995) suggests that the
answer lies essentially in the conditions that underlie the formation of the prior evaluations, and
thus in factors that precede the occurrence of the challenge. This stream of research suggests that
an increase in information acquired and in elaboration at the attitude formation stage, results in
greater resistance to counter-attitudinal challenges. The present research demonstrates why this
may not always be the case.

Evaluative resistance to challenges also rests on processes that occur after the challenge has
taken place. As work in the judgment literature has shown (e.g., Kardes 1994; Wilson and Hodges
1992), prior evaluations are only one of several inputs that may be used in forming post-challenge
evaluations. Which inputs will eventually be used depends on their relative accessibility and
diagnosticity at the time the post-challenge evaluations are computed (e.g., Feldman and Lynch
1988). The findings of experiments 1A, 1B, and 2 indicate that the favorability of post-challenge
evaluations is largely driven by the part-worth of the subset of the target information that can be accessed at the time of the challenge. The more compelling this subset, the more favorable the post-challenge evaluations.

This "part-worth accessibility" principle delineates conditions under which initial learning of a large amount of information may actually harm post-challenge evaluations. Such conditions arise when there is heterogeneity in the perceived importance of the various pieces of target information. Experiments 1A and 1B show that embedding very compelling pieces of information among less compelling ones is likely to decrease the more compelling pieces' subsequent accessibility, thereby diluting their influence on post-challenge evaluations. This finding is very congenial with the notion of "unique selling proposition" (USP) often advocated in positioning and communication strategy. Our research suggests that a USP can help not only in breaking through the communication clutter, but also in providing a compelling and accessible reason to resist a counter-attitudinal challenge. Along the same lines, Experiment 2 shows that, because of their intrinsic memorability and seductiveness, single puffery claims may result in more favorable post-challenge evaluations than several factual claims. Again, a lesser amount of substantive information appeared to lead to greater resistance. It is important to note that these findings were observed controlling for the favorability of the initial evaluations. Sheer persistence over time of the initial evaluations cannot account for the results either.

The principle of part-worth accessibility can also accommodate previous findings showing that initial learning of a large amount of target information does help resistance to counter-attitudinal challenges (e.g., Wood 1982; Haugtvedt et al. 1994). One would expect it to be the case when the target information is homogeneous in its compellingness. It this case, the part-worth of the accessible subset of target information will depend essentially on the number of pieces of information that are accessed, not on which pieces can be accessed (see Erber et al. 1995 for a related discussion). This prediction is consistent with results obtained in experiment 3. Recall that
in this experiment—unlike in experiment 1A and 1B—the claims in the high and low amount of information conditions had comparably average levels of compellingness. Consistent with previous findings, it was found that under direct attack, a high amount of information indeed resulted in more favorable post-challenge evaluations. The process tests further revealed that this effect was mediated by recall of claims learned prior to the challenge. Therefore, the principle of part-worth accessibility helps identify both conditions under which learning of a high amount of target information can be beneficial to subsequent resistance and conditions under which it can be detrimental.

The relative diagnosticity of the inputs also plays a crucial role in shaping post-challenge evaluations. Our research suggests that challenges vary not just in terms of the negativity of the information that they convey, but also in terms of the perceived diagnosticity of their content. This point has been previously overlooked. The results of experiments 3 and 4 indicate that equally negative information about a target is more likely to damage people's evaluations of the target when the challenging information is presented in a comparative—as opposed to a noncomparative—format. This is because a comparative framing of the challenge prompts people to place a greater weight on the challenge's content (experiment 4) and a lesser weight on previously learned target information (experiments 3). Thus, information about the target can be expected to enhance subsequent resistance only to the extent that, at the time of the challenge, this information is still perceived to be diagnostic. This was apparently the case in the direct (noncomparative) attack condition of experiment 3. Interestingly, previous work on attitude resistance (e.g., Haugtvedt et al. 1994) may have unintentionally confined itself to such conditions by using only direct noncomparative attacks on the target. The results of experiment 5 show that the diagnosticity of the challenging information also depends on its commensurability with the information that can be accessed about the target. High commensurability facilitates the recognition of the target's superiority or inferiority, provided that people have adequate memory for the target's attributes.
Exploring other determinants of the inputs' diagnosticity in post-challenge evaluation is worthy of further research. In conclusion, to understand how information really influences post-challenge brand evaluations—and a brand's resistance to counter-attitudinal challenges—one should look beyond consumers' initial evaluations. There is more to a post-challenge evaluation than the retrieval of a weak or strong prior evaluation. This views echoes recent theorizing about the constructive nature of evaluative judgments (e.g., Wilson and Hodges 1992). Our results indeed suggest that subjects' post-challenge evaluations of the target were largely dependent on the relative accessibility and diagnosticity of prior target information and information contained in the challenge. Perhaps, resistance to counter-attitudinal challenges should be regarded as contingent in nature, rather than a given property of prior evaluations.
The results were also analyzed by treating prior brand evaluations and post-challenge brand evaluations as repeated factor in a mixed ANOVA, where the experimental factors were between-subjects. A statistically equivalent analysis was to submit the difference between prior brand evaluation and post-challenge brand evaluation to a completely between-subject ANOVA. The substantive results of both analyses converged those of the ANCOVA. Therefore, we only report the ANCOVA results, both for the sake of exposition, simplicity, and to be consistent with our emphasis on post-challenge evaluations.
REFERENCES


### Table 1

**Recall and Evaluation as a Function of Learning Conditions**

<table>
<thead>
<tr>
<th></th>
<th>Exp. 1 A (N=51)</th>
<th>Exp. 1 B (N=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number of “high part-worth” claims recalled</td>
<td>Isolated 0.92  Embedded 0.48</td>
<td>Isolated 0.94  Embedded 0.43</td>
</tr>
<tr>
<td>Initial Evaluation</td>
<td>5.96</td>
<td>5.21</td>
</tr>
<tr>
<td>Post-Challenge Evaluation</td>
<td>4.78</td>
<td>4.14</td>
</tr>
<tr>
<td>(Unadjusted post-challenge eval.)</td>
<td>(4.52)</td>
<td>(4.37)</td>
</tr>
</tbody>
</table>

### Table 2

**Initial and Post-challenge Evaluations as a Function of Type of Claim and Type of Attack (N=73)**

<table>
<thead>
<tr>
<th></th>
<th>Direct Attack</th>
<th>Competitor Praise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3-claims</td>
<td>Puffery</td>
</tr>
<tr>
<td>Initial Evaluation</td>
<td>5.32</td>
<td>5.38</td>
</tr>
<tr>
<td>Post-Challenge Evaluation</td>
<td>3.02</td>
<td>3.77</td>
</tr>
<tr>
<td>(Unadjusted post-challenge eval.)</td>
<td>(3.06)</td>
<td>(3.84)</td>
</tr>
</tbody>
</table>

### Table 3

**Recall and Initial and Post-challenge Evaluations as a function of Amount of Information and Format of Attack (Experiment 3 N=102)**

<table>
<thead>
<tr>
<th></th>
<th>Direct</th>
<th>Compar.</th>
<th>Direct</th>
<th>Compar.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of claims recalled</td>
<td>0.97</td>
<td>1.41</td>
<td>0.44</td>
<td>0.52</td>
</tr>
<tr>
<td>Initial Evaluation</td>
<td>5.54</td>
<td>5.73</td>
<td>5.23</td>
<td>5.03</td>
</tr>
<tr>
<td>Post challenge evaluation</td>
<td>3.87</td>
<td>4.66</td>
<td>3.36</td>
<td>3.94</td>
</tr>
<tr>
<td>(Unadjusted post-challenge eval.)</td>
<td>(3.84)</td>
<td>(4.69)</td>
<td>(3.33)</td>
<td>(3.75)</td>
</tr>
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</table>
### Table 4

**Initial and Post-challenge Evaluations as a Function of Amount of Challenging Information and Comparability**  
(Experiment 4 N=114)

<table>
<thead>
<tr>
<th>Attack</th>
<th>Comparative</th>
<th>Direct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Challenging Information:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Evaluation</td>
<td>6.95</td>
<td>6.96</td>
</tr>
<tr>
<td>Post-Challenge</td>
<td>5.14</td>
<td>3.85</td>
</tr>
<tr>
<td>(Unadjusted mean)</td>
<td>5.20</td>
<td>3.92</td>
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### Table 5

**Mean Attitude at Initial and Post-challenge evaluations with varying levels of Elaboration and Commensurability of Attack**  
(Experiment 5 N=251)

<table>
<thead>
<tr>
<th>Elaboration level:</th>
<th>High Commensurability</th>
<th>Low Commensurability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Initial Evaluation</td>
<td>5.24</td>
<td>5.23</td>
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<tr>
<td>Post-Challenge</td>
<td>4.65</td>
<td>4.09</td>
</tr>
<tr>
<td>(Unadjusted mean)</td>
<td>4.64</td>
<td>4.07</td>
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</tbody>
</table>
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