

Spillover refers to the extent to which a message influences beliefs related to attributes that are not contained in the message. The authors find that when consumers are not familiar with a brand, negative information spills over to attributes that are associated with the target attribute but not mentioned in the message. However, positive information does not. When consumers like the brand, a spillover occurs for the positive information as well. When consumers are committed to the brand, the spillover of negative information is minimized, but positive information spills over more freely to other associated but unmentioned attributes.

## The Moderating Role of Commitment on the Spillover Effect of Marketing Communications

In recent years, marketers have increasingly focused on customer retention strategies as a means of ensuring long-term profitability for their products. The increased attention to customer retention, as opposed to acquisition, has given birth to several types of "loyalty" programs (e.g., frequent-shopper bonuses) and customer satisfaction programs (e.g., call centers) and a renewed interest in brand loyalty as an effective means of gaining and sustaining competitive advantage.

Consistent with this interest in loyalty, recent consumer behavior research has examined the concept of brand commitment (e.g., Dick and Basu 1994; Fournier 1998; White and Schneider 1998). Commitment is defined as the "psychological attachment" (Kiesler 1971) to a brand and is viewed as a close antecedent of behavioral loyalty (Beatty, Kahle, and Homer 1988). Building brand commitment or loyalty requires a heavy investment of marketers' resources. A major question, then, is What return can be expected from such an investment? That is, how does building commitment help a marketer in a competitive environment in which consumers are likely to be faced with all types of marketing communications?

In the research reported in this article, we focus on the "spillover" effects of communications and how brand commitment affects spillover. Spillover refers to the extent to which information provided in messages changes beliefs about attributes that are not mentioned in the messages. For example, a consumer who is exposed to a message that describes a detergent as strong and high in cleaning ability may infer that the detergent is harsh or harmful to delicate fabrics. If this belief change occurs even though there is no mention of harshness in the message, it can be said that the effect of the communication about detergent strength spilled over to another related but unmentioned attribute.

Because communications can affect beliefs about attributes that are not mentioned in a message, a full understanding of communication effects requires the study of spillover effects (Fishbein and Ajzen 1981). In one of the few studies to examine this phenomenon in a consumer research setting, Lutz (1975) finds that spillover effects explain more variance in attitude change than do changes in beliefs that are addressed by the message. Although this work clearly shows the importance of spillover, little is known about the conditions under which spillover will occur or the role played by commitment in moderating spillover effects. In the following section, we develop a framework for the understanding of spillover effects and address how spillover is moderated by a person's commitment to the brand about which the information is provided.

### CONCEPTUAL FRAMEWORK

The literature on missing information provides a starting point for understanding spillover effects. This literature has developed into two major streams. One focuses on factors that lead to the detection of missing information and the

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subsequent effects of such detection on overall evaluations (e.g., the omission detection model; Kardes 1988; Sanbonmatsu, Kardes, and Sansone 1991). The other (e.g., Broniarczyk and Alba 1994; Dick, Chakravarti, and Biehal 1990; Simmons and Lynch 1991) examines the rules people employ when inferring the value of missing information (e.g., probabilistic versus evaluative rules, intuitive notions versus data). To achieve these ends, researchers in this area typically provide subjects with information on multiple attributes for several fictitious brands and measure subjects' attitudes and/or beliefs to assess their inference generation.

A general conclusion of this research is that consumers either use their intuitive notions of interattribute correlations (e.g., Broniarczyk and Alba 1994; Kardes et al. 2001) or the correlational information gathered from the data given to them (e.g., Dick, Chakravarti, and Biehal 1990) to infer the values of missing attribute information. Therefore, in the detergent example discussed previously, if the brand claims strength but does not mention its ability to clean delicate clothes, consumers may conclude that it is harsh on the basis of their prior notions about how strength and gentleness are correlated or how the two attributes are correlated in other brands in the market. Thus, this literature suggests that the correlations or associations between attributes drive consumer inferences about attributes on which information is not available.

However, note that though this literature provides insight into the bases for generating inferences, it gives little direction regarding the "extent" of inference generation in response to positive versus negative information or in the context of known brands. In contrast, our research focuses on factors that determine the extent to which inferences are likely to be generated (spillover) or curtailed (isolation). That is, we examine the role of inferences as deliberate defensive processes, in contrast to the more neutral role in which prior research has examined them.

#### *Message Valence*

Persuasive appeals (e.g., publicity, advertising) can contain both positive and negative information about a brand. The previous person perception literature suggests that positive and negative information have asymmetric effects on persuasion (Skowronski and Carlston 1989). It has been repeatedly found that the overall evaluations of an unknown person or brand are affected to a greater extent by negative information than by positive information (e.g., Herr, Kardes, and Kim 1991; Homer and Batra 1994). This preponderant effect of negative information over positive information has been termed the "negativity effect" and has been attributed to the higher perceived diagnosticity of negative information than of positive information (Maheswaran and Meyers-Levy 1990; Skowronski and Carlston 1989).<sup>1</sup>

<sup>1</sup>The negativity effect has also been attributed to the perceived novelty of negative (versus positive) information (Fiske 1980). It has been argued that the salience of negative information results in greater attention to it, causing it to have more influence in evaluations. However, it is important to note that the diagnosticity of the negative information is the underlying driver of this explanation as well. Specifically, because attention to a piece of information results in increased weight only if it is diagnostic (Feldman and Lynch 1988), an important assumption underlying the novelty explanation is that novel or unexpected information is more diagnostic than expected information (Fiske 1980; Skowronski and Carlston 1989).

Diagnosticity refers to the perceived relevance or usefulness of the information in decision making. For example, when consumers are exposed to negative information about a product, they can categorize the product as low in quality. However, positive and neutral information about products is less useful in categorizing them, because positive and neutral features are commonly possessed by high, average, and low quality products (Herr, Kardes, and Kim 1991). Therefore, negative information may be seen as more useful or diagnostic in making decisions, and as a result, it is given greater weight than positive information.

The relatively high diagnosticity of negative (versus positive) information for judgments in general is likely to translate into its higher perceived diagnosticity for inference judgments as well. Because inferences are likely to be generated in the presence of diagnostic information, there should be greater spillover of negative than positive communications, at least insofar as unknown people or fictitious objects are used as stimuli.

H<sub>1</sub>: For a fictitious/unknown brand, consumers will exhibit greater belief change in the negative than the positive information condition for attributes that are not mentioned in the message but are associated with the target attribute.

#### *Biased Assimilation*

When people are familiar with an object, their initial attitude is expected to actively guide the processing of new information about that object (Petty and Cacioppo 1986). For example, people have been known to pay more attention to attitude-consistent information than attitude-inconsistent information (e.g., Frey 1986). They also exhibit a tendency to engage in biased processing by readily accepting attitude-consistent information (e.g., Kunda 1990; Petty and Cacioppo 1986) and perceiving it as more persuasive than attitude-inconsistent information (Edwards and Smith 1996; Petty and Cacioppo 1986). We expect this consistency bias to spill over to related attributes that are not mentioned in the message. Therefore, we expect that when consumers hold positive attitudes toward a brand, unlike in the scenario of the unknown brand, they will exhibit a spillover of attitude-consistent positive information to correlated attributes.

We also expect that when consumers are exposed to strong and credible negative information about a brand they like but toward which they are uncommitted, they will yield to it. That is, their attitude and beliefs will change in a message-consistent direction. This is because even though the negative information is inconsistent with their prior attitude, the message should be perceived as diagnostic because of its negative valence. As a result, we expect that the effects of the message will spill over to correlated but unmentioned attributes.

Therefore, unlike the scenario of an unknown brand, in which consumers have a positive prior attitude toward a brand but are not committed to it, they are likely to exhibit a spillover effect for correlated or associated attributes in response to strong and credible negative as well as positive information about a target attribute. This is because of both the inherent diagnosticity of negative information and the attitude consistency of the positive information. Therefore,

H<sub>2</sub>: For a well-liked brand, consumers whose commitment is low will exhibit belief change for attributes that are not mentioned in the message but are associated with the target attribute, and this effect will hold in both the positive and the negative information conditions.

### Defense Motivation

Commitment is expected to lead a person into a state of "defense motivation" (Eagly and Chaiken 1995). The defense motivation engendered by high levels of commitment is expected to foster selective cognitive processing of information that is threatening to the person's attitude (Chaiken, Liberman, and Eagly 1989; Pomerantz, Chaiken, and Tordesillas 1995). Committed consumers have been shown to perceive attitude-inconsistent negative information as lower in its perceived diagnosticity than attitude-consistent positive information (Ahluwalia, Burnkrant, and Unnava 2000). The motivation to defend attitudes and associated beliefs has been shown to occur even at the cost of accuracy (e.g., Pomerantz, Chaiken, and Tordesillas 1995). However, even committed consumers are likely to yield to communications that are strong and credible (Petty, Ostrom, and Brock 1981).

Therefore, although defense-motivated consumers may yield to the message and change their beliefs about the target attribute when provided with a credible and strong message, they may prevent it from affecting other beliefs that are associated with the target attribute but are not mentioned in the message and thereby exhibit lower levels of attitude change. A major consequence of attitudinal commitment, then, is likely to be the ability it gives the committed consumer to isolate the impact of counterattitudinal (negative) information to the target attribute, restraining it from spilling over to other related attributes.

As a corollary, the selective cognitive processing induced by commitment is expected to lead consumers to perceive the diagnosticity of positive brand-related information as relatively high and therefore to exhibit spillover effects to associated attributes. Therefore,

- H<sub>3</sub>: When commitment is high, belief change for attributes that are not mentioned in the message but are associated with the target attribute will depend on the valence of the message; belief change will occur if the information is positive but not if it is negative.

### PRETESTS

All experiments used the same materials, described subsequently.

#### Target Messages

Athletic shoes were selected as the target product category. The positive and negative target messages were developed in the format of newspaper articles. They contained either positive or negative statements about the shock absorption ability of a fictitious brand of shoes, Avanti. The positive (negative) message reported the findings of a recent study that found Avanti shoes to be superior (inadequate) in their level of shock absorption. The messages were adapted from Ahluwalia, Burnkrant, and Unnava (2000). In a pretest, subjects were exposed to either the positive or the negative message and asked to rate "How favorable or unfavorable was the presented article toward the target brand?" on an 11-point scale (-5 to +5). The messages were rated as significantly different in their valence ( $\bar{x} = -3.4$  versus  $+3.8$ ,  $F = 95.6$ ,  $p < .01$ ), but not in their extremity ( $\bar{x} = 3.4$  versus  $3.8$ ,  $p > .50$ ) or believability ( $\bar{x} = 5.3$  versus  $5.1$ ,  $p > .80$ ).

In another pretest, 30 subjects read either the positive or the negative target message and then listed their cognitive

responses and filled out a dependent variables booklet. They assessed the diagnosticity of the information on three seven-point scales anchored by "extremely relevant"/"extremely irrelevant," "not at all useful"/"of very great use," and "not at all indicative"/"very indicative" based on Klar (1990). Consistency of the information with expectations was measured on two seven-point scales anchored by "extremely inconsistent"/"extremely consistent" and "extremely unexpected"/"extremely expected" adapted from Loken and John (1993). The subjects' level of involvement during message processing was assessed on three seven-point scales anchored by "very uninvolved"/"very involved," "concentrating very little"/"concentrating very hard," and "paying very little attention"/"paying a lot of attention" (Miniard, Bhatla, and Rose 1990). Subjects were also asked to assess the novelty of the information on a seven-point scale anchored by "not at all novel"/"very novel."

The results revealed that subjects considered the negative information more diagnostic than the positive information ( $\bar{x} = 4.98$  versus  $3.67$ ,  $F_{(1,28)} = 5.82$ ,  $p < .05$ ), exhibiting a difference of 1.31 points on a seven-point scale. However, there was no difference in the negative versus positive information in terms of its expectedness ( $\bar{x} = 3.73$  versus  $3.54$ ,  $F_{(1,27)} = .32$ , n.s.), novelty ( $\bar{x} = 4.33$  versus  $3.79$ ,  $F_{(1,27)} = 1.01$ , n.s.), and message involvement ( $\bar{x} = 4.89$  versus  $4.76$ ,  $F_{(1,28)} = .11$ , n.s.). Furthermore, subjects had the same number of cognitive responses in both conditions ( $\bar{x} = 4.18$  versus  $3.80$ ,  $F_{(1,28)} = .33$ , n.s.). Thus, the messages were equivalent in terms of their novelty and unexpectedness and received similar amounts of attention and processing, but they differed in their perceived diagnosticity.

#### Attributes

A pretest was conducted to identify the important or primary attributes in the evaluation of athletic shoes. Thirty-eight subjects were asked to rate a list of attributes on a seven-point scale anchored by "not at all important"/"extremely important" for evaluating an athletic shoe. Eight attributes (support, stability, comfort, durability, breathability, flexibility, technological innovativeness, and style) that were rated 5 or above on this scale were selected for inclusion in the next pretest, which focused on the perceived correlation between shock absorption and other attributes.

In the next pretest, subjects ( $n = 45$ ) were asked to provide one of two ratings on a nine-point scale anchored at +4 ("very likely")/-4 ("very unlikely"), with a midpoint of 0 ("can't say"). They rated either the likelihood that a shoe with a high level of shock absorption would have a high level of the other attributes or the likelihood that a shoe with a low level of shock absorption would also have a low level of the other specified attributes. Because the perceived inter-attribute associations were similar for the low (negative) versus the high (positive) shock absorption conditions for all the attributes considered except style, the data from these conditions were combined. The attributes were then grouped into three categories on the basis of their relative likelihood of association with shock absorption. Support ( $\bar{x} = 2.86$ , standard deviation [S.D.] = .97) and comfort ( $\bar{x} = 2.75$ , S.D. = .71), which had the highest association scores, were assigned to the high-association category, whereas breathability ( $\bar{x} = .28$ , S.D. = .84) and durability ( $\bar{x} = .47$ , S.D. = 1.04), which had the lowest association scores, were labeled low-association attributes. Stability ( $\bar{x} = 2.20$ , S.D. = 1.25)

and technological innovativeness ( $\bar{x} = 2.13$ , S.D. = 1.01) were assigned to the moderate-association category. For the sample averages and the 95% confidence intervals for the population means of these attributes, see Figure 1. Because flexibility did not clearly fall in any of the categories ( $\bar{x} = .95$ , S.D. = .98) and the associations were asymmetric in the positive and negative conditions for style, these attributes were not included in the experiments. Thus, there were two attributes nested within each association condition.

The final pretest was conducted to examine whether the target newspaper articles allowed a test of the spillover hypotheses. Specifically, if the articles were perceived as providing relevant information about the associated attributes in addition to the attribute of shock absorption, then the spillover argument would not be justified. Thirty-eight students read either the positive or the negative target article and were asked to assess the perceived relevance of the article for each of the seven attributes. As in an earlier pretest, relevance of information was assessed on three seven-point scales anchored by "extremely relevant"/"extremely irrelevant," "not at all useful"/"of very great use," and "not at all indicative"/"very indicative." The results revealed a statistically significant main effect of attribute,  $F_{(6,31)} = 37.93$ . Specifically, subjects considered the articles as conveying relevant information only regarding the target attribute of shock absorption ( $\bar{x} = 4.54$ , S.D. = 1.19). Scores for all other attributes were not only lower than those for shock absorption ( $p < .05$ ) but also too low to be perceived as relevant (support,  $\bar{x} = 2.36$ , S.D. = .99; comfort,  $\bar{x} = 2.20$ , S.D. = .75; technology,  $\bar{x} = 2.19$ , S.D. = .84; stability,  $\bar{x} = 2.13$ , S.D. = .81; breathability,  $\bar{x} = 1.29$ , S.D. = .53; durability,  $\bar{x} = 1.66$ , S.D. = .81).

### EXPERIMENT 1

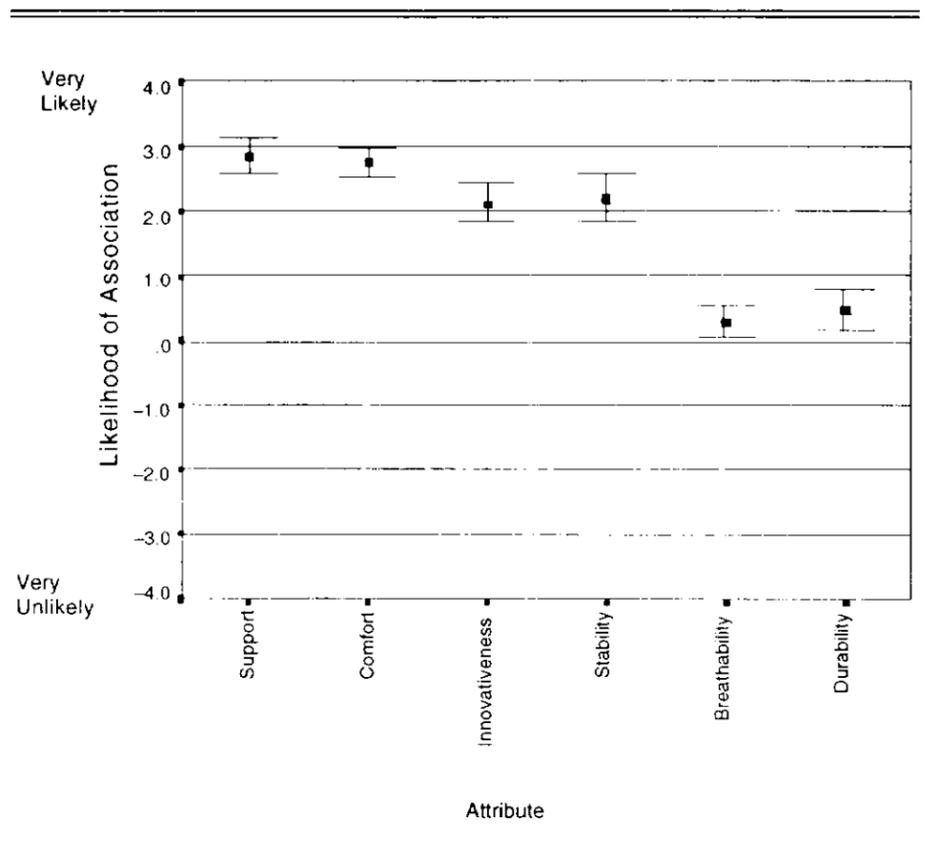
#### Methodology

**Design and subjects.**  $H_1$  was tested in a 3 (information: positive, negative, none)  $\times$  3 (association to the target attribute: high, moderate, low) mixed factorial, in which the former factor was between subjects and the latter was within subjects. In addition, two attributes were nested within each level of attribute association, as described previously.

Subjects were exposed to either a positive or a negative message about a fictitious brand of athletic shoes (Avanti) in the experimental conditions. In the control (no-information) condition, subjects were not exposed to any information about Avanti shoes but only completed the dependent measures booklet, which contained measures related to the high-, moderate-, and low-association attributes. Fifty-nine undergraduate students participated in the study for extra credit.

**Procedure and dependent variables.** Upon entering the experiment location, experimental subjects were given a booklet containing either the positive or the negative newspaper article about Avanti athletic shoes. The instructions specified that the researchers were interested in the subjects' impressions of a new brand of athletic shoes based on the information that was made available to them. After reading the article, subjects completed a booklet of dependent measures. In the experimental conditions, subjects' beliefs about the target attribute as well as six other attributes described previously were assessed. In the control condition, subjects were asked to provide their expectancies related to the same attributes for Avanti athletic shoes. Attribute beliefs were measured on seven-point scales anchored by "likely"/"unlikely."

Figure 1  
LIKELIHOOD OF ATTRIBUTE ASSOCIATION WITH SHOCK  
ABSORPTION: SAMPLE AVERAGES AND 95% CONFIDENCE  
INTERVALS



#### Results and Discussion

The analysis of variance (ANOVA) on beliefs related to the target attribute of shock absorption revealed only a statistically significant effect of the information condition ( $F_{(2,56)} = 53.47$ ,  $p < .01$ ). Contrasts of the experimental conditions with the control attested to the effectiveness of the message. Compared with the control condition, subjects in the positive information condition had more positive beliefs ( $\bar{x} = 4.8$  versus 5.75,  $p < .01$ ), and subjects in the negative information condition had less positive beliefs ( $\bar{x} = 4.8$  versus 2.53,  $p < .01$ ) about Avanti's shock absorption ability. Thus, the message employed in this study was successful in altering subjects' beliefs about the featured attribute. The magnitude of the effect, however, was much larger in the negative (2.27 points) than the positive condition (.95 points).

A mixed ANOVA model including all factors (information valence, subjects nested in information valence, attribute association, and attributes nested in each association condition) and all estimable interactions, treating attributes as well as subjects as random, was run. The interaction between attributes and information valence ( $F_{(6,167)} = 1.36$ ,  $p > .23$ ) was not statistically significant, which indicated that the effects did not vary by the different attributes in each association condition. The interaction between information valence and attribute association was statistically significant (quasi- $F_{(4,8,46)} = 10.63$ ,  $p < .01$ ), which suggested differences in spillover of positive versus negative information by attribute association.

$H_1$  predicts that spillover effects to associated attributes should be greater for the negative than the positive message. We assessed spillover by contrasting experimental conditions with the control group. We performed 12 planned contrasts, two for each attribute (positive versus control, negative versus control). For sample averages and 95% confidence intervals for the population means, see Figure 2.

The contrasts revealed that though the two high- and two moderate-association attributes were undermined by an average of 1.38 points on a seven-point scale in the negative information condition ( $p < .05$ ), no enhancement was evident in the positive information condition ( $p > .10$ ) for these attributes. Furthermore, as expected, there was no difference between positive and negative message conditions ( $p > .10$ ) for the two low-association attributes. However, surprisingly, beliefs in the control condition for both of the low-association attributes were somewhat higher (.85 points,  $p < .05$ ) than the beliefs in the experimental conditions. Although this finding was unexpected, it is consistent with prior research in the inferencing literature and does not affect the main conclusions of this study. Specifically, prior literature (e.g., Sanbonmatsu et al. 1997) has shown that people exhibit a tendency toward belief moderation (less favorable beliefs) when the decision context highlights the limited nature of information available for inference generation. More important, the presence of nondiagnostic information about a judgment is more likely to make people aware of the information deficiency than the absence of any information. In the current study, the experimental conditions provided nondiagnostic information about these attributes, and the control condition did not provide any. Therefore, the former context was more likely than the latter to tune the subjects in to the lack of information about the low-association attributes, which led to belief moderation for these attributes. This belief moderation effect, however, is likely to be limited to situations in which subjects are not familiar with the target brand. Familiar subjects are less likely to believe that they have insufficient information to make judgments.

Thus,  $H_1$  was supported. When subjects were exposed to strong and credible negative information about an unknown brand, they changed their beliefs about the target attribute as well as other associated attributes. In contrast, when sub-

jects were exposed to an equally strong and credible positive message about the same brand, their beliefs about the target attribute showed positive changes, but there were no changes in their beliefs about other associated attributes. Therefore, spillover effects appear to be more likely for negative information than for positive information when the target brand is unknown.

## EXPERIMENT 2

### Methodology

**Design.** The moderating effect of attitudinal commitment on spillover was investigated through a 3 (information condition: positive, negative, none)  $\times$  2 (commitment of the individual: high, low)  $\times$  3 (attribute association: high, moderate, low) mixed factorial. The first two factors were between subjects, and the last was within subjects. Two attributes were nested within each association condition. Subjects, whose initial attitudes were equally extreme, were randomly assigned to either high or low levels of attitudinal commitment and then given positive, negative, or no information about the target brand.

**Target brand.** We conducted a pretest to identify a low-share target brand in the athletic shoes category so that we could manipulate prior attitude and commitment in an experimental setting. An alternative to manipulating commitment is to choose people on the basis of their existing levels of commitment to a brand. However, the risk with measuring commitment is that other unmeasured factors associated with different levels of commitment may provide alternative explanations for the results. For example, attitude extremity is often correlated with attitude commitment. We decided to manipulate commitment to avoid these confounds.

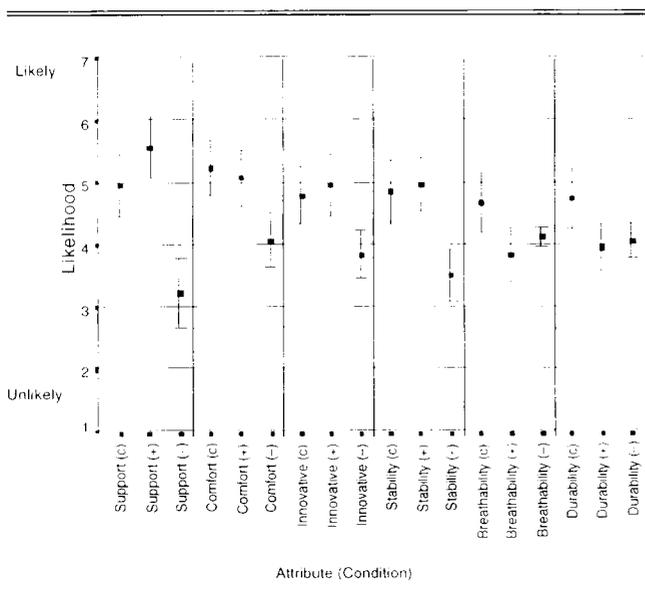
Students ( $n = 390$ ) from an introductory business class filled out a survey related to various brands. On the basis of the results, Mizuno was chosen as the target brand: Subjects were relatively unfamiliar with it ( $\bar{x} = 3.07/9$ ), had low levels of prior commitment ( $\bar{x} = 2.18/9$ ), and had moderately positive attitudes toward it ( $\bar{x} = 5.13/9$ ).

**Subjects.** Subjects were local area residents ( $n = 108$ ) who were recruited to participate in a market research study conducted in local shopping areas ( $n = 72$ ) or in local schools through the Parent Teacher Associations ( $n = 36$ ). In exchange for their participation, subjects received either cash or a donation toward a chosen organization. Mean age of the respondents was 32.5 years, 47% had a college degree, 33% were men, and 67% were women.

**Procedure.** Subjects were run individually in this experiment. On arrival, the subjects were informed that they were participating in a consumer survey being conducted by a market research company in collaboration with the business school. The survey was intended to collect consumer opinions regarding two products that were planned for introduction in the local area in the near future. Subjects were then handed a folder containing materials related to two products, a camera and an athletic shoe. As is described subsequently, information on the camera was provided to facilitate the manipulation of commitment. The folder included, for each product, some background information, a *Consumer Reports* article, and draft copies of advertisements. After the subjects reviewed the materials at a self-directed pace, the experimenter asked them to provide their thoughts about the two products on an audio tape. They were asked to point out

Figure 2

ATTRIBUTE BELIEFS BY CONDITION IN EXPERIMENT 1:  
SAMPLE AVERAGES AND 95% CONFIDENCE INTERVALS



the positive qualities of the brand that the company may be able to use in its advertising and to come up with a potential endorsement or slogan for each product.

The manipulation for commitment was administered after the subjects had tape-recorded their thoughts. In the high-commitment condition, the subjects were asked if the Mizuno Corporation could use their taped thoughts about the brand along with their photographs in its advertising and publicity campaigns. The subjects were photographed and asked to sign a release statement to this effect. This induction follows the procedure used in prior commitment studies, which have shown that public attachment of self to the target results in increased commitment toward it (e.g., Halverson and Pallak 1978; Kiesler 1971). Presumably, this procedure is based on the definition of commitment as "the pledging or binding of the individual to behavioral acts" (Kiesler 1971) and refers to the associations between people's attitudes and their overt, often public behaviors in support of that attitude.

The subjects in the low-commitment condition underwent the same procedure but were asked to release their thoughts related to the filler camera brand. Therefore, subjects in both the high- and low-commitment conditions went through exactly the same set of procedures and provided thoughts for both products. The only difference was the brand for which they signed the release and were photographed. The use of a second product thus ensured equivalence in the types of tasks subjects performed as they underwent the critical manipulation.

The manipulation of valence of information was accomplished after the commitment manipulation. After obtaining the release signature, the experimenter went to his desk to get a questionnaire for the subject. He then acted surprised to find a loose-leaf page on the desk and inquired whether the subject had read the page before. After receiving the expected negative response, the experimenter apologized and told the subject that the page had apparently slipped out of the folder unnoticed, and he requested that the subject read it before he or she filled out the questionnaire. The binder holes in the "slipped-out page" were deliberately torn so that the mishap could be easily explained. The manipulation of valence of information was introduced at this point. The slipped-out page, which the subject read after the commitment manipulation, was the same positive or negative newspaper article used in Experiment 1, but it featured Mizuno as the brand name. After reading the article, the subject filled out the dependent measures questionnaire. This procedure enabled us to test the effects of positive or negative information about a brand on subjects who differed in their attitudinal commitment.

Two no-information control groups (high- and low-commitment) were used to assess the effectiveness of the manipulation and other confound checks (brand attitude) and to provide the baseline ratings of the various attributes after exposure to the background materials but before reading the target message. The spillover effect was computed in subsequent analyses as the difference in beliefs between the control and the experimental conditions. Subjects in the control group performed the same tasks as those in the experimental group but did not see the target article. That is, they did not go through the mishap of the slipped-out page.

All subjects were thoroughly debriefed on the cover story. They were informed of the purpose of the study, told that the

information in the experiment was fictitious, and quizzed for potential hypotheses guessing. Three subjects (one high-commitment negative, one low-commitment negative, and one low-commitment positive) reported being suspicious about the article slipping out, and one (high-commitment positive) was very familiar with the target brand. These subjects plus another (low-commitment positive) who refused to sign the release statement were dropped from the analysis.

*Dependent variables.* We measured beliefs about the high-, moderate-, and low-association attributes as in Experiment 1. We measured attitude toward the target brand using four nine-point semantic differential scales ("good"/"bad," "beneficial"/"harmful," "desirable"/"undesirable," and "nice"/"awful") ( $\alpha = .97$ ). On the basis of Beatty, Kahle, and Holmer's (1988) work, we assessed subjects' commitment toward the brand by measuring their agreement with the following statements (nine-point scale, "disagree"/"agree"): "If brand X athletic shoes were not available at the store, it would make little difference to me if I had to choose another brand"; "I could see myself being highly loyal to X brand athletic shoes"; "When another brand is on sale, I am likely to purchase it rather than X brand" ( $\alpha = .62$ ).

### Results

*Manipulation checks.* In the control groups, high- versus low-commitment subjects reported a higher level of commitment ( $\bar{x} = 3.69$  versus 2.23,  $F_{(1,27)} = 14.15$ ,  $p < .01$ ) but equivalent attitudes ( $\bar{x} = 5.73$  versus 5.45,  $F_{(1,26)} = 1.08$ , n.s.) toward the target brand.

*Target attribute.* A 3 (information condition)  $\times$  2 (commitment) ANOVA on the attribute of shock absorption revealed only a main effect of information condition ( $F_{(2,96)} = 47.77$ ,  $p < .01$ ). As compared with the control condition, subjects evaluated the shock absorption of the shoe to be higher in the positive ( $\bar{x} = 6.26$  versus 5.38,  $p < .01$ ) and lower in the negative ( $\bar{x} = 3.88$  versus 5.38,  $p < .01$ ) condition. Again, the magnitude of change was greater in the negative (1.50 points) than the positive condition (.88 points).

*Analysis of variance: belief change.* We ran a mixed ANOVA model including all the factors and all estimable interactions, treating attributes as well as subjects as random. A commitment  $\times$  information  $\times$  attribute association interaction, as well as two-way interactions between information and attribute association, would be consistent with the predictions. However, none of the interactions were statistically significant at  $p < .05$ . Next, we tested the planned comparisons implied in the hypotheses. Because subjects in the low- and high-commitment control conditions did not differ in their beliefs about the target brand (see Table 1), for the purpose of contrasts with the experimental groups, we combined the attribute beliefs of the two control groups. We assessed the spillover effect by contrasting the beliefs of the experimental groups with the combined control group.

*Spillover effects: low commitment.*  $H_2$  predicts a spillover effect on associated attributes for the low-commitment subjects in both positive and negative information conditions. The data from the low-commitment subjects were subjected to planned contrasts between the experimental and no-information control conditions for the six attributes. Table 1 displays the cell means. Figure 3 plots the sample averages and 95% confidence intervals for the population means.

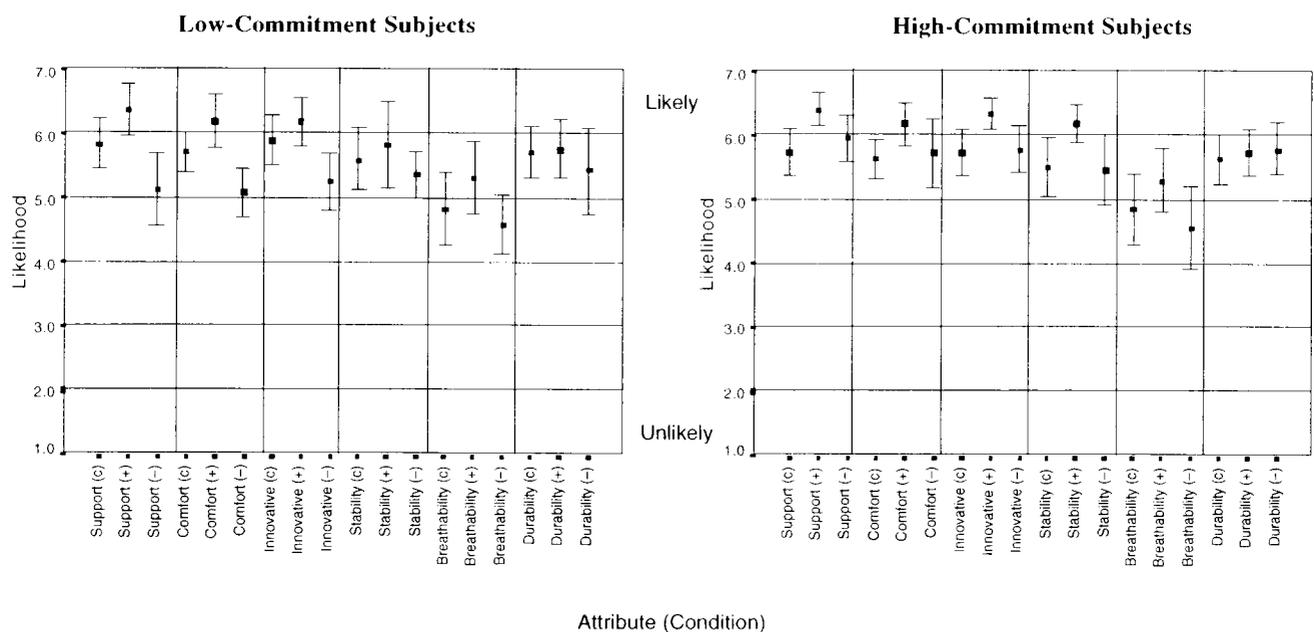
Table 1  
CELL MEANS (STANDARD DEVIATION) FOR BELIEFS RELATED TO SPILLOVER EFFECTS: EXPERIMENTS 2 AND 3

Attribute (Correlation)	Negative Article		Positive Article		Control		
	High Commitment (1)	Low Commitment (2)	High Commitment (3)	Low Commitment (4)	High Commitment (5)	Low Commitment (6)	Combined (7)
<i>Experiment 2</i>							
Support (high)	5.94 (.71)	5.12* (1.13)	6.45* (.51)	6.39* (.78)	5.80 (.77)	5.79 (.80)	5.79 (.77)
Comfort (high)	5.67 (1.11)	5.05* (.75)	6.25* (.72)	6.22* (.81)	5.67 (.62)	5.57 (.85)	5.62 (.73)
Technology (moderate)	5.78 (.73)	5.24* (.90)	6.40* (.50)	6.22* (.73)	5.80 (.77)	5.71 (.73)	5.76 (.74)
Stability (moderate)	5.44 (1.07)	5.35 (.70)	6.20* (.62)	5.89 (1.31)	5.53 (.92)	5.43 (.94)	5.48 (.91)
Durability (low)	5.78 (.81)	5.41 (1.33)	5.80 (.77)	5.89 (.92)	5.67 (.89)	5.51 (.85)	5.59 (.87)
Breathability (low)	4.56 (1.29)	4.59 (.87)	5.25 (1.01)	5.39 (1.14)	4.93 (.88)	4.93 (1.14)	4.93 (.99)
<i>Experiment 3</i>							
Support (high)	5.62 (.92)	4.63* (1.21)	6.25* (.44)	6.31* (.48)	5.83 (.62)	5.79 (.63)	5.81 (.62)
Comfort (high)	5.62 (.97)	4.89* (1.05)	6.20* (.70)	6.05* (.78)	5.56 (.78)	5.47 (.84)	5.51 (.80)
Technology (moderate)	5.57 (1.08)	5.11* (.88)	6.10* (.72)	5.82 (.77)	5.61 (.61)	5.58 (.61)	5.59 (.60)
Stability (moderate)	5.62 (.74)	5.26 (.56)	6.15* (.59)	5.40 (.90)	5.56 (.92)	5.53 (.90)	5.54 (.90)
Durability (low)	5.71 (.90)	5.57 (1.22)	6.00 (.73)	5.79 (.86)	6.00 (.84)	5.47 (.90)	5.73 (.90)
Breathability (low)	5.43 (.87)	4.89 (1.10)	5.50 (.95)	4.95 (.71)	5.22 (.94)	5.22 (.85)	5.22 (.89)

\*Cell mean is significantly different from the combined control mean at  $p < .05$ .

Notes: Experiment 2 cell sizes: (1) = 19, (2) = 17, (3) = 20, (4) = 18, (5) = 15, (6) = 14. Experiment 3 cell sizes: (1) = 20, (2) = 21, (3) = 18, (4) = 19, (5) = 19, (6) = 19.

Figure 3  
ATTRIBUTE BELIEFS BY CONDITION IN EXPERIMENT 2: SAMPLE AVERAGES AND 95% CONFIDENCE INTERVALS



Planned contrasts with the control group revealed a degradation in subjects' beliefs related to the two high-association attributes in the negative condition and a belief enhancement for these attributes in the positive condition ( $p < .05$ ). The magnitude of belief change in these cells averaged .60 points on a seven-point scale. This finding supported  $H_2$ . The planned contrasts for the moderate association attributes revealed a mixed pattern of results: One attribute (technological innovativeness) experienced a small (.49 points) but statistically significant belief change in both valence conditions ( $p < .05$ ), but the other (stability) did not

( $p > .10$ ).<sup>2</sup> Thus, weak support was obtained with moderate-association attributes. Finally, planned contrasts for the two low-association attributes revealed no differences between experimental and control conditions ( $p > .10$ ) or no spillover, which is consistent with our expectations and

<sup>2</sup>Even though our pretest data did not indicate a significant difference in the correlation of the two moderately correlated attributes with the target attribute of shock absorption, subjects may have perceived the target information to be more diagnostic for technological innovativeness than stability, on the basis of correlational dimensions not measured by us.

Experiment 1. As Figure 3 reveals, the spillover effects were relatively weak in the positive condition.

*Spillover: high commitment.*  $H_3$  states that consumers who have a positive attitude toward a brand and are committed to it should exhibit a spillover effect with the positive but not with the negative information. This is because the defense motivation of committed consumers is likely to trigger selective processing of the information. For the cell means, see Table 1, and for sample averages and 95% confidence intervals for the population means, see Figure 3.

Planned contrasts for the high-association attributes revealed that, as expected, there was a spillover with an average magnitude of .64 points with the positive ( $p < .05$ ) but not with the negative information ( $p > .10$ ). The exact same pattern of spillover was observed for the moderate-association attributes, but there were no spillover effects in the positive or negative condition for the low-association attributes. Figure 3 supports these conclusions, demonstrating a consistent effect in the positive condition for the high- and moderate-association attributes, but no effect in the negative condition.

*Attitude change.* The information condition  $\times$  commitment ANOVA on brand attitudes resulted in statistically significant main effects only of information condition ( $F_{(2,96)} = 29.14$ ,  $p < .05$ ) and commitment ( $F_{(1,96)} = 5.73$ ,  $p < .05$ ). Because there was no difference in the attitudes of the two control groups ( $p > .10$ ), they were combined for the contrasts. Negative information led to less favorable attitudes than the control situation for low-commitment subjects ( $p < .05$ ) but with a small difference of .9 points on a nine-point scale. However, there was no significant difference between the attitude of the high-commitment subjects and the control group ( $\bar{x} = 5.33$  versus 5.59). Both high- ( $\bar{x} = 6.25$ ) and low-commitment ( $\bar{x} = 6.05$ ) subjects exhibited a small attitude enhancement in the positive condition (.66 and .46 points, respectively,  $p < .05$ ).

### Discussion

Taken together, the results of Experiment 2, which employed a brand about which subjects held prior attitudes and to which they had different levels of commitment, were remarkably different from those of Experiment 1. Although the negative information spilled over freely to the high- and moderate-association attributes in Experiment 1 (unknown brand), Experiment 2 demonstrated that the existence of a positive prior attitude curtailed the negative information's ill effects somewhat, making them weaker. Furthermore, positive attitudes held with higher levels of commitment completely curtailed the negative spillover.

The effects were markedly different with positive information. Whereas in Experiment 1 there was a lack of spillover effects in response to positive information, in Experiment 2 consumers with a positive prior attitude exhibited a weak spillover to both of the high- and one of the moderate-association attributes. When commitment was high, stronger spillover effects of positive information were observed for all the high- and moderate-association attributes. In other words, the negativity effect detected in Experiment 1 (unknown brand) was completely eliminated, and the positive spillover that was absent in Experiment 1 was obtained for all associated attributes for high-commitment subjects in Experiment 2.

Note that both high- and low-commitment subjects yielded to strong and credible negative and positive information, exhibiting a change of similar magnitude in their

beliefs related to the target attribute. However, compared with low-commitment subjects, high-commitment subjects exhibited a lower magnitude of attitude change in the negative condition and a higher magnitude of attitude change in the positive condition. Therefore, the results suggest that even though committed consumers may change their beliefs related to the target attribute, they may be able to resist attitude change effectively by containing the impact or spillover of this information. At the same time, they may be able to enhance the effect of positive information by letting it spill over to other attributes.

This experiment, however, did not measure the posited mediating mechanisms underlying spillover. For example, perceived diagnosticity of the information was not measured. More important, the pattern of results is consistent with two underlying mechanisms. First, it is possible that committed subjects selectively avoided the negative information while engaging in detailed processing of the positive information. Specifically, the amount of elaboration is also expected to influence the accessibility and perceived diagnosticity of the information (Menon and Raghurir 2000). Second, the pattern of results could also be explained by the extent to which the high- and low-commitment groups engaged in biased elaboration, counterarguing negative information while supporting positive information. Biased elaboration is also known to result in inferential biases such as underestimation of the perceived diagnosticity of negative information (e.g., Ahluwalia, Burnkrant, and Unnava 2000). In other words, it is not clear whether spillover is a consequence of the amount of processing (attention) or the direction of processing (biased processing). In addition, potential self-presentation pressures in the high-commitment condition could also explain the data obtained in Experiment 2. Specifically, because of the public nature of the endorsement opportunity, subjects may have felt compelled to demonstrate attitude-consistent behaviors in the high-commitment condition. Experiment 3 was conducted to examine the underlying explanation for spillover effects obtained in Experiment 2.

### EXPERIMENT 3

#### Design and Subjects

As in Experiment 2, a 3 (information: positive, negative, none)  $\times$  2 (commitment: high, low)  $\times$  3 (attribute association: high, moderate, low) factorial design was run. Subjects, whose initial attitudes were equivalent on extremity, were randomly assigned to either high or low levels of commitment and were then given positive, negative, or no information about the target brand (Mizuno). Subjects ( $n = 120$ ) were recruited from an undergraduate business class. Four subjects were dropped from the analysis: One did not sign release statement (high-commitment control), one was suspicious about the article dropping out (low-commitment negative), and two were very familiar with the target brand (low-commitment positive, high-commitment control).

#### Procedure

Subjects were run individually. The procedure was similar to that of Experiment 2. The only change was that before filling out the dependent variables questionnaire, subjects were specifically instructed not to put their name on the questionnaire and told that their responses were anonymous. Furthermore, the written instructions as well as the experi-

menter asked them to drop the completed questionnaire in a collection box placed in the room. This was expected to remove any self-presentation pressures (e.g., Lindskold and Propst 1981; Zimbardo 1970).<sup>3</sup>

### Dependent Variables

Beliefs, attitude, and commitment measures followed Experiment 2. Additional process measures were included in the experimental (positive and negative information) conditions.<sup>4</sup> Subjects were asked to list all the thoughts they had while reading the target article. These thoughts were coded by two judges into three categories: counterarguments, support arguments, and other thoughts. Support (counter) arguments in the negative article condition included negative (positive) thoughts about Mizuno, and in the positive article condition they included positive (negative) thoughts about the target brand. There was 91% agreement between the judges. Disagreements were resolved by discussion. Experimental condition subjects also assessed the diagnosticity of the information on three seven-point scales anchored by "extremely relevant"/"extremely irrelevant," "not at all useful"/"of very great use," and "not at all indicative"/"very indicative" ( $\alpha = .70$ ). Their involvement with and attention to the message was assessed on three seven-point scales anchored by "very uninvolved"/"very involved," "concentrating very little"/"concentrating very hard," and "paying very little attention"/"paying a lot of attention" ( $\alpha = .85$ ). Consistency of the information with expectations was measured on two seven-point scales anchored by "extremely inconsistent"/"extremely consistent" and "extremely unexpected"/"extremely expected" ( $\alpha = .89$ ).

### Results

**Manipulation and confound checks.** In the control groups, as expected, high-commitment subjects reported a higher level of commitment toward the target brand than the low-commitment subjects did ( $\bar{x} = 3.98$  versus 2.84,  $F_{(1,35)} = 7.98$ ,  $p < .01$ ) but had equivalent attitudes ( $\bar{x} = 5.28$  versus

4.92,  $F_{(1,35)} = 1.89$ , n.s.).<sup>5</sup> The two-way commitment  $\times$  valence interaction was not statistically significant ( $F_{(1,75)} = .54$ , n.s.) for the perceived inconsistency data, but the main effect of information condition was significant ( $F_{(1,75)} = 116.00$ ,  $p < .01$ ), which indicated that negative information ( $\bar{x} = 5.57$ ) was perceived to be more inconsistent than positive information ( $\bar{x} = 2.82$ ) by both high- and low-commitment subjects.

**Spillover effects.** The findings of Experiment 2 related to attribute beliefs were supported. Again, none of the interactions were significant; however, high-commitment subjects isolated the effect of negative information but freely drew inferences about the associated attributes on the basis of positive information. The low-commitment subjects demonstrated a spillover of negative and positive information to the high-association attributes but had mixed effects for moderate-association attributes and no spillover to low-association attributes. For cell means, standard deviations, and significance levels, see Table 1.

**Attitude.** The attitude results from Experiment 2 were replicated. Specifically, the two-way interaction was not significant ( $F_{(2,104)} = .30$ , n.s.), but planned contrasts revealed that compared with the control group, negative information led to a small drop in the attitudes of the low-commitment ( $\bar{x} = 5.11$  versus 4.50,  $p < .05$ ) but not the high-commitment ( $\bar{x} = 5.11$  versus 5.17, n.s.) subjects. Both the high-commitment ( $\bar{x} = 5.73$ ) and the low-commitment ( $\bar{x} = 5.81$ ) groups exhibited a small attitude enhancement compared with the control group ( $\bar{x} = 5.11$ ) in the positive condition ( $p < .05$ ).

**Information processing.** We analyzed the data from the three-item measure of subjects' involvement with and attention to the target messages using a commitment  $\times$  information valence ANOVA. The analysis revealed no statistically significant effects (all  $p > .10$ ), which suggested no differences among the high- and low-commitment subjects in their level of motivation to process the positive versus negative information related to the target brand.

Next, the total number of message-related thoughts were analyzed. Consistent with the involvement results reported previously, the commitment  $\times$  valence interaction was not significant ( $F_{(1,75)} = 1.34$ , n.s.). However, the main effect of information valence emerged as statistically significant ( $F_{(1,75)} = 4.38$ ,  $p < .05$ ), which suggested that a few more thoughts were elicited in the negative ( $\bar{x} = 4.25$ ) than in the positive information condition ( $\bar{x} = 3.59$ ).

The message-related thoughts were further analyzed as counter and support arguments. Because the two messages (positive and negative) were equally strong and credible, objective processing would be consistent with (1) equivalent level of counterargumentation in both conditions and (2) given the strength of the messages, more support (versus counter) arguments in both conditions (Petty and Cacioppo

<sup>3</sup>In addition, a measure of self-presentation effects based on Cioffi and Garner's (1996) work was administered in all conditions. Subjects were asked to indicate the degree to which their answers were influenced by what others may think of them on a seven-point scale anchored by "not at all"/"to a very great extent." The change in procedure as well as the self-presentation manipulation check aimed at ruling out this potential alternative explanation.

<sup>4</sup>The control (no positive or negative article) conditions included measures to assess equivalence of the two commitment conditions on two other dimensions: mood and attitudinal ambivalence. Subjects' mood was assessed on a four-item scale based on Peterson and Wilson's (1992) work. Subjects indicated their agreement with the following statements on a five-point scale ("strongly agree"/"strongly disagree"): (1) "Currently, I am in a good mood"; (2) "As I answer these questions I feel very cheerful"; (3) "For some reason I am not very comfortable right now"; (4) "At this moment I feel 'edgy' or irritable." The attitudinal ambivalence measure was based on Kaplan's (1972) technique. Respondents were asked to rate on a four-point scale (0 = "not at all," 3 = "extremely") the extent to which they had positive feelings toward the target brand (e.g., 3) and then, separately, the extent to which they had negative feelings toward it (e.g., 2). The subject's degree of ambivalence was computed by taking the sum of the positive and negative ratings (e.g., 3 + 2 = 5) of the attitude toward the object (this represents the total amount of affect toward the object, regardless of valence) and then subtracting the absolute value of the difference between the two scales (e.g., 3 - 2 = 1). In our example ambivalence would be calculated as 5 - 1 = 4. The ambivalence rating can range from 0 (no ambivalence) to 6 (very high ambivalence).

<sup>5</sup>Subjects in both control groups (high versus low commitment) demonstrated equivalent levels of attitudinal ambivalence ( $\bar{x} = 1.65$  versus 1.89,  $F_{(1,35)} = .41$ , n.s.) and did not differ in their mood after the administration of the commitment manipulation ( $\bar{x} = 3.11$  versus 3.14,  $F_{(1,35)} = .09$ , n.s.). We analyzed the self-presentation behavior data, collected in the control as well as experimental conditions, using a 3  $\times$  2 ANOVA. No effects approached significance (all  $p > .10$ ), which indicated that subjects in the different conditions did not vary in their susceptibility to self-presentation effects. The overall level of self-presentation behavior was very low ( $\bar{x} = 2.00$ ).

1977). Biased assimilation, however, would lead to (1) greater counterargumentation of the preference-inconsistent negative (versus preference-consistent positive) information and (2) fewer support (versus counter) arguments in the negative condition, but more support (versus counter) arguments in the positive condition.

The commitment  $\times$  valence interaction was statistically significant for both counter ( $F_{(1,75)} = 3.96, p < .05$ ) and support ( $F_{(1,75)} = 12.84, p < .01$ ) arguments. Exhibiting biased assimilation, high-commitment subjects generated two more counterarguments in the negative than in the positive condition ( $\bar{x} = 2.62$  versus  $.60, p < .01$ ). In addition, they had 1.30 more counter (versus support) arguments in the negative condition ( $\bar{x} = 2.62$  versus  $1.33, p < .01$ ) and 2.45 more support (versus counter) arguments in the positive condition ( $\bar{x} = 3.05$  versus  $.60, p < .01$ ). Given that the average number of total thoughts generated by the subjects was 5.30, these differences represent fairly substantial effects and strongly support the conclusion of biased assimilation by high-commitment subjects.

The low-commitment subjects, in contrast, had more support (versus counter) arguments in both the negative ( $\bar{x} = 2.84$  versus  $1.74, p < .01$ ) and the positive ( $\bar{x} = 2.53$  versus  $1.00, p < .01$ ) conditions. However, they demonstrated a tendency toward biased assimilation by generating a few more counter arguments in the negative than in the positive condition ( $\bar{x} = 1.74$  versus  $1.00, p < .05$ ).

*Perceived diagnosticity.* The commitment  $\times$  valence interaction for diagnosticity approached statistical significance ( $F_{(1,74)} = 3.42, p < .07$ ). Consistent with the defensive processing observed for high-commitment subjects, they perceived the positive information to be somewhat more diagnostic than the negative information ( $\bar{x} = 5.42$  versus  $4.62, p < .02$ ). The low-commitment subjects, in contrast, did not exhibit any difference in the perceived diagnosticity of positive versus negative information ( $\bar{x} = 5.47$  versus  $5.44, n.s.$ ).

### Discussion

The findings of Experiment 2 were replicated in this study, increasing our confidence in the obtained effects. More important, however, this study provided insight into the processes underlying spillover effects obtained for high- and low-commitment subjects. The data indicate that the finding of an isolation effect with negative information and a spillover effect with positive information for the high-commitment subjects cannot be explained by a differential amount of attention or processing. There were no differences in the reported level of involvement and attention paid to the positive and negative messages. Indeed, subjects had more thoughts in the negative than in the positive condition.

Similarly, the perceived inconsistency of the information cannot explain the pattern of spillover data. Subjects in all conditions perceived negative information to be more inconsistent than positive information. However, only low-commitment subjects exhibited spillover effects with negative information.

The cognitive response data reveal that the high-commitment subjects engaged in defensive processing of the target information. They actively counterargued the preference-inconsistent negative information and supported the preference-consistent positive information. Consistent with their defensive processing, they rated the negative information as

less diagnostic than the positive information. This reversal in perceived diagnosticities attests to the defense motivation of these subjects and is consistent with prior literature (Feldman and Lynch 1988; Herr, Kardes, and Kim 1991), which suggests that a person's goals are likely to determine the perceived diagnosticity of a piece of information. This mechanism explains the isolation of the negative information and the spillover with positive information observed for these subjects.

The low-commitment subjects, though equally motivated to process the negative and positive information, also exhibited some level of processing bias or a consistency motivation. Because they were less attached to the brand, their level of bias was much less than that observed for the high-commitment subjects. They supported both messages (positive and negative) more than they countered them; however, their consistency motivation led them to counterargue the negative message a little more than the positive message. Furthermore, they not only rated the negative information as high in diagnosticity but also perceived the diagnosticity of goal-consistent positive information to be high. That is, they perceived both positive and negative information to be high in their diagnosticity. Thus, their level of motivation was not high enough to lower the perceived diagnosticity of negative information or generate more counter (versus support) arguments in the negative information condition, but it led to the more moderate outcomes noted previously. In summary, the consistency motivation of the low-commitment subjects combined with the high diagnosticity of negative information can explain the pattern of spillover obtained for these subjects.

Thus, the data indicate that high- and low-commitment consumers do not vary in their reception of brand-related information but differ in the extent to which they yield to it. More important, differences in biased elaboration can explain the pattern of spillover better than differences in message attention.

### GENERAL DISCUSSION

The research presented in this article suggests that the return on investment for building brand commitment is evident in its information-processing benefits. Stated simply, the value of committed customers can be measured in terms of the defensive processes they exhibit in the face of negative versus positive information about the target brand, therein resisting persuasion attempts and exhibiting repeat purchase behavior.

Our data suggest that commitment helps a marketer by limiting the impact of negative brand-related information to the target attribute and by enhancing the impact of brand-related positive information to other related attributes. More important, the relative processing of negative versus positive information by these consumers denotes a reversal of the natural tendencies of people in processing such information. The isolation of the negative information by committed consumers occurred in the face of people's natural tendency to generalize negative information to other related attributes. In contrast, committed consumers generalized the impact of positive brand-related information to other related attributes in the face of a natural tendency to isolate its effect to the target attribute (as demonstrated in Experiment 1).

Our research demonstrates the additional benefits obtained by building commitment over and above a favor-

able brand evaluation. Favorable brand evaluation reduced the spillover of negative information; however, commitment completely curtailed it. Similarly, favorable brand evaluation enabled positive information to spill over to high-association attributes; commitment enhanced not only the strength but also the extent of this effect, enabling it to spill over to even moderate-association attributes. Therefore, defensive information processing of committed customers is likely to restrain them from succumbing to switching inducements (positive information about competition/low-commitment brands, negative information about target), leading to repeat purchase behavior. This, from an information-processing perspective, is the value of brand loyalty.

Our research also demonstrates the importance of spillover effects in the design of marketing communications. For example, our findings related to the spillover effects for low-commitment consumers suggest that in responding to negative attacks, companies need to address not just the main issues in the negative message but also other correlated attributes. However, a response strategy focusing on the target attributes may be adequate for the committed consumers who tend to isolate the effect of negative information.

More important, our research demonstrates the critical role that spillover plays in resistance to persuasion. Defensive processing has been measured in terms of denial of message content (Petty and Krosnick 1995). This focus on yielding has led to some unresolved findings in the literature. For example, even though smokers appear to accept the negative messages related to smoking, they are able to maintain fairly positive attitudes of their own smoking behavior. Spillover effects offer a potential resolution to this inconsistency. It is possible that highly committed smokers are persuaded by strong messages about how smoking adversely affects their health but do not let this information spill over to other beliefs they consider important (e.g., how it affects their families). Thereby, they maintain a favorable overall evaluation of smoking. In other words, committed consumers may be able to minimize the impact of information that is difficult to counterargue by isolating its effect to the target attribute. Therefore, our research tests and proposes a new set of defensive mechanisms. Yet another defensive mechanism, not examined in our research, is the reduced weighting of the negative information by committed consumers. In other words, it is also likely that though committed consumers accept the strong negative information, they reduce its relative weight in attitude formation and are thereby able to resist attitude change.

The concept of spillover not only builds on the prior research in the area of missing information inferences but also extends it. The missing-information research has focused on the mechanics of inference generation when brands are fictitious. Our research examines the use of inference generation as a deliberate defensive process when consumers are familiar with a brand and/or committed to it. It clearly demonstrates the differences in inference generation for an unknown brand (Experiment 1) versus a known brand (Experiments 2 and 3).

In addition, our research highlights the subjective nature of perceived diagnosticity assessments. Specifically, it demonstrates that these assessments tend to be determined by the goals of the perceiver (Feldman and Lynch 1988).

For example, in the pretest for Experiment 1, consistent with prior literature, subjects who were unfamiliar with the target brand perceived the negative article to be more diagnostic than the positive article. However, when subjects were familiar with the brand and had a positive prior attitude toward it (low-commitment subjects in Experiment 3), they engaged in biased processing of the articles, perceiving the goal-consistent positive information to be as diagnostic as the negative information. In contrast, the goal of defense motivation led the high-commitment subjects to lower the perceived diagnosticity of attitude-inconsistent negative information while upholding the diagnosticity of goal-consistent negative information, which resulted in a reversal of the pattern obtained in the unfamiliar brand scenario.

Also note that the perception of attribute associations in this research is similar to the concept of illusory correlation, which refers to people's tendency to overestimate the occurrence of expectancy-congruent behaviors (e.g., Garcia-Marques and Hamilton 1996). Therefore, it is possible that both high- and low-commitment consumers exhibit illusory correlation effects when estimating their beliefs related to the high- and moderate-association attributes in the positive information condition.

#### *Limitations*

Some caveats are in order as we attempt to generalize the results of this study to practical situations. First, even though the high-association attributes selected in our study had fairly high association with the target attribute ( $\bar{x} = 2.80$  on a 0–4 scale), they were not perfectly associated. For attributes with near-perfect association, the belief change may be expected to mirror that obtained for the target attribute, given the latter's high diagnosticity for generating inferences related to these attributes (Dick, Chakravarti, and Biehal 1990). Furthermore, because generating inferences is risky and effortful, they are unlikely to be elicited spontaneously unless subjects are motivated to generate them (Kardes 1988). Prior research indicates that spontaneous inferences are likely to be generated in a choice (versus a judgment) task (Broniarczyk and Alba 1994), by knowledgeable consumers (Sanbonmatsu, Kardes, and Herr 1992), for important attributes (Huber and McCann 1982), and for contextual information that supports the inference (Broniarczyk and Alba 1994). Spillover effects may be more likely to occur in these and other situations in which consumers are involved in processing the target information. Such situations are likely to be fairly common, particularly for consumers in the brand's target market.

We manipulated commitment in the lab in the interest of internal validity. Although our commitment induction has been validated by prior research (e.g., Kiesler 1971) and is well accepted in the commitment literature, it was not based on product experience, which, though difficult to manipulate in the lab setting, is likely to influence brand commitment in the marketplace. In general, product experience increases the strength of a consumer's brand evaluation and commitment (Fazio 1989; Kiesler 1971). Therefore, we speculate that when commitment is based on product experience, it is likely to result in even higher levels of defensive processing and thereby lead to stronger effects (e.g., see Pomerantz, Chaiken, and Tordesillas 1995).

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