

Studies examining message framing effects on persuasion have produced mixed results. Some studies show positively framed messages, which specify attributes or benefits gained by using a product, to be more persuasive than negatively framed messages, which specify attributes or benefits lost by not using a product. Reverse outcomes have been obtained in other studies. The authors explore a theoretical explanation for such findings by investigating whether differences in the degree to which people engage in detailed message processing account for the mixed results. The findings support the view that positively framed messages may be more persuasive when there is little emphasis on detailed processing, but negatively framed messages may be more persuasive when detailed processing is emphasized.

## The Influence of Message Framing and Issue Involvement

Inspired by Kahneman and Tversky's (1979, 1982) prospect theory, a substantial stream of literature has explored the effect of framing on people's choices between discrete options (Puto 1987; Qualls and Puto 1989). This research reveals that people are largely risk averse when alternatives are framed positively and thus described in terms of benefits gained (e.g., lives saved), but they are risk seeking when options are framed negatively and discussed in terms of benefits lost (lives lost).

The issue of how people's attitudes and behaviors toward a single product or issue are affected by message framing has received less attention. Message framing has been operationalized either by focusing on positive product attributes or benefits gained through product use or by focusing on negative product attributes or benefits lost by not using the product (Levin 1987; Meyerowitz and Chaiken 1987; but see Edell and Staelin 1983 for different framing manipulations).

Research exploring this issue has led to opposing findings. Levin and Gaeth (1988; Levin 1987) found that people evaluated beef more favorably when it was de-

scribed positively as 75% lean than when it was described negatively as 25% fat. If one assumes that evaluations or attitudes are indicative of the persuasiveness of a message, these findings suggest that positive framing may be more persuasive than negative framing. Yet Meyerowitz and Chaiken (1987) report opposite message framing effects in an investigation of young women's compliance with an advocacy for breast self-examination (BSE). When the same message was framed either positively by focusing on benefits gained (e.g., "Women who do BSE have an increased chance of finding a tumor in the early, more treatable stage of the disease") or negatively by focusing on benefits lost (e.g., "Women who do not do BSE have a decreased chance of finding a tumor in the early, more treatable stage of the disease"), the women were found to be more persuaded when they received the negatively rather than the positively framed message.

In our research, we seek a theoretical explanation for such opposing findings. Because substantial research suggests that variations in people's involvement with an issue can affect how they process and respond to it (Greenwald and Leavitt 1984; Kardes 1988), we begin by exploring relevant theory. This theory leads to the hypothesis that negatively framed messages should be more persuasive than positively framed ones when issue involvement is high, but the reverse outcome should emerge when issue involvement is low. Thus, we attempt to go beyond just a simple demonstration that people respond differently to alternative message framing

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and to show instead how either positive or negative message framing can be more persuasive, depending on issue involvement.

To test this theorizing, we examined how message framing and issue involvement might jointly influence people's attitudes toward and compliance with a preventive health behavior advocacy. This context was selected because advocacies on preventive health issues (e.g., interventions aimed at reducing the risk of high cholesterol, AIDS, substance abuse) are increasing in number, suggesting that they are of considerable relevance and practical importance to marketers and consumers. Further, the effectiveness of such advocacies appears to be very mixed (Atkin 1979), presumably because of an inadequate understanding of the basic processes that mediate persuasion and adaptive responses (Kirscht 1983). Hence enhancing understanding of message framing effects in this context would contribute simultaneously to marketing theory and marketing practice.

#### INVOLVEMENT, MESSAGE FRAMING, AND PERSUASION

Models of persuasion found in the marketing and consumer literatures suggest that people who are highly involved with an issue are likely to process relevant messages in detail (Chaiken 1980; Petty and Cacioppo 1983). They are thought to rely on careful scrutiny of message content and their knowledge of the merits of the issue to judge the validity of an advocacy. Accordingly, under high involvement, how people combine or integrate message-relevant information into a unitary attitude plays an important role in persuasion (Petty, Cacioppo, and Schumann 1983).

A variety of studies suggest that during integration, negative information often receives greater weight and influence than does positive information (Kanouse 1984; Lau 1985; Weinberger, Allen, and Dillon 1981). Wright (1974, 1981) ties this overweighting to conditions of high involvement. As he explains, "overweighting may only occur when an audience member is sufficiently concerned over the message content to bother generating reactions and integrating those into an overall impression, and to worry about making errors in this" (1981, p. 279-80). Consistent with this view, Wright and Weitz (1977) found that women exhibited greater aversion toward undesirable features of birth control devices when they considered purchase of such a device imminent (high involvement) than when purchase was distant (low involvement).

The implication of such findings is that when issue involvement is high, messages relevant to the issue not only should be processed in detail but also should be more persuasive when they are negatively rather than positively framed. Indeed, the previously discussed findings of Meyerowitz and Chaiken (1987) support this general prediction, if one assumes that informing the women subjects that "cancer is the leading cause of death

in 15 to 34 year old women" elevated the women's involvement with the issue.

Note that though the valence of a message frame represents a superficial cue that should not be germane to involved detailed processors, the content of the negative information should be both highly informative and of high perceived consequence. Hence, highly involved processors should devote considerable attention to such negative information, which could result in overweighting.<sup>1</sup> Research by Fiske (1980) is consistent with this view that negative information tends to be highly informative and thus may be assigned extra weight. The implication is that overweighting may be justifiable or rational.

However, issue involvement is not always high. For example, because people frequently are overly optimistic in assessing their susceptibility to health risks (Burger and Burns 1988), low involvement often may prevail in the context of health-related issues. It is therefore important to consider whether the effect of message framing is constant regardless of involvement.

Insight on this issue is offered by the persuasion literature (Chaiken 1980; Petty and Cacioppo 1983), which suggests that under low involvement conditions, people are unlikely to scrutinize message arguments diligently and integrate their related thoughts and beliefs into an overall attitude. Instead, people tend to form attitudes on the basis of simple inferences derived from peripheral cues in the persuasion context, such as whether "the attitude issue or object is associated with positive or negative cues . . ." (Petty, Cacioppo, and Schumann 1983, p. 135).<sup>2</sup> Thus, under low involvement, the persuasiveness of an advocacy may be based on the valence of peripheral cues. Indeed, message persuasiveness has been found to be greater when a communicator has high rather than low expertise (Petty, Cacioppo, and Schumann 1983) and when extraneous cues in the context are positive rather than negative (Sternthal and Craig 1974).

The implication of these findings is that in low involvement situations, advocacies should be more persuasive when message information is framed positively

<sup>1</sup>The overweighting of negative information typically has been examined in studies where each individual receives both positive and negative information in a within-subject design. We extend this notion by using a between-subjects design and suggest that when information is negatively framed, individuals will assign greater weight to it than when the same (factually equivalent) information is positively framed. Hence, this extension examines the overweighting notion under more rigorous conditions because, in contrast to the within-subject case, the negative information is not presented in a context containing contrasting oppositely valenced material, which itself could enhance the salience of the negative information.

<sup>2</sup>Though various terms have been used to describe the nondetailed processing that occurs under low involvement conditions (e.g., peripheral processing, heuristic processing, category processing), we use the term "simple inferential processing." Further, consistent with Chaiken (1980), we assume that detailed and simple inferential processing are separate, independent processing modes that can co-occur.

than when it is framed negatively. The previously discussed findings of Levin and Gaeth (1988; Levin 1987) support this deduction if one assumes that the student subjects who were queried did not find the focal issue (beef) highly involving.<sup>3</sup>

On the basis of the preceding theorizing, we anticipate the following interaction of involvement and message framing.

- H<sub>1</sub>: Under high involvement conditions, an advocacy is more persuasive when the message is framed negatively than when it is framed positively. However, under low involvement conditions, persuasion is greater when the message is framed positively than when it is framed negatively.

The extent to which detailed message processing mediates such persuasion outcomes should be evident in the types of thoughts people generate in response to the message and their recall of the material. Generation of message-related thoughts and recall have been found to serve as indicators of detailed processing (Chaiken 1980), whereas generation of simple evaluative thoughts has been taken as evidence of simple inferential processing (Sujan 1985). Because detailed processing is expected to prevail when issue involvement is high, it follows that message-related thoughts and recall should be elevated under conditions of high issue involvement. Because simple inferential processing is expected to dominate when issue involvement is low, simple evaluative thoughts should be prevalent under low involvement conditions. Support for these predictions also would lend credence to the effective manipulation of involvement.

- H<sub>2</sub>: Generation of message-related thoughts and recall is greater when issue involvement is high than when it is low, and the generation of simple evaluative thoughts is greater when issue involvement is low than when it is high.

### METHOD

Ninety-eight undergraduate students participated in an experiment for extra course credit. Subjects were run in small groups of five to seven individuals and were told that the study pertained to their attitudes toward health-related issues. Booklets were randomly distributed that

contained the stimulus materials and manipulated involvement (low vs. high) and message framing (positive vs. negative).

The first page of the booklet varied issue involvement. Subjects assigned to the high issue involvement condition learned that, according to a recent study conducted by Harvard Medical School, "even people under 25 years of age have a high risk of acquiring coronary heart disease." Further, they were told that "susceptibility to heart disease later in life actually is established early when people are in their late teens and twenties. Thus the risk of becoming a victim of a heart attack is real, increasing, and important to be aware of even if you are under 25 years of age." Subjects in the low involvement condition also were apprised of a Harvard Medical School study, but the study purportedly reported that "senior citizens have a very high risk of acquiring coronary heart disease," because "the risk of heart disease greatly increases as people grow older. Thus, the risk of becoming a victim of a heart attack is of utmost concern for those over 65 years of age."

On the next page subjects read background information describing the role of cholesterol in the development of heart disease, and then read a message advocating a diagnostic blood test that would enable individuals to identify their cholesterol level and thus their risk of heart disease. Both the background material on cholesterol's role in heart disease and the four arguments that specifically advocated taking the diagnostic blood test varied in whether they were positively or negatively framed. In the positive framing condition, the statements indicated the benefits achieved by reducing one's cholesterol level and taking a diagnostic blood test. In the negative framing condition, factually equivalent statements were presented but they indicated the benefits lost by failing to reduce one's cholesterol level and not taking a diagnostic blood test. The following statements illustrate how such positive/negative framing was achieved.<sup>4</sup>

- By taking (not taking) this diagnostic blood test, you can (fail to) find out your current cholesterol level.
- And by taking (not taking) this test, you'll acquire (fail to acquire) important information pertinent to a major risk factor leading to heart attacks.
- Because your current cholesterol level can significantly affect your health both today and later in life, you'll obtain (fail to obtain) important information about the status of your health if you take (do not take) advantage of this opportunity to find out what your cholesterol level is.
- Remember that you stand to gain (lose) important health

<sup>3</sup>Though the findings by Levin (1987; Levin and Gaeth 1988) can be explained by the proposed view, we do not suggest that the negatively framed beef description would have been more favorably regarded (more persuasive) than the positively framed one if subjects' involvement with the product had been high in this study. The reason is that in this study, in the negatively framed message condition the advocacy was for a product that had a negative attribute (% fat content) rather than for a product or behavior that would enable one to eliminate this negative attribute. Hence, though overweighting of the negatively framed product description would be anticipated under high involvement, the expected result would be increased negativity of subjects' evaluations of the advocated product.

<sup>4</sup>One might question the comparability of this framing manipulation and favor the use of quantitative framing manipulations similar to those used by Kahneman and Tversky (1979; "% lives lost" vs. "% lives saved"). In our view, the comparability of their manipulations could be questioned similarly. Because a lost life seems to suggest much more finality than one that is saved, people might attribute greater affect to "% lives lost" than to "% lives saved."

benefits if you take (fail to take) the initiative to learn what your current cholesterol count is.

After reading these materials, subjects completed several dependent measures. Attitudes toward the advocated behavior were assessed on four 7-point scales anchored by not at all useful/extremely useful, extremely unfavorable/favorable, extremely bad idea/good idea, and not at all important/very important. Intentions to take a diagnostic blood test were assessed on three 7-point scales that asked whether subjects intended to take the blood test soon or intended to take the test in the future, and whether the materials subjects read made them more or less likely to take a diagnostic blood test in the future.

Next, subjects completed cognitive response and recall tasks.<sup>5</sup> The cognitive response task requested that subjects list all thoughts that had occurred to them while reading the stimulus materials and the recall task requested that they write down as much of the advocacy as they could remember.

Subjects also completed several manipulation-check questions. To assess how involving subjects felt the message was, three 7-point scales queried how interesting, involving, and personally relevant the material was. In addition, two measures assessed the positivity/negativity of the framing manipulation. First, subjects rated the extent to which they stood to gain important health benefits by complying with the advocated behavior and the extent to which they felt the message stressed the positive implications of the advocated behavior. Second, subjects rated the extent to which they stood to lose important health benefits by not complying with the advocated behavior and the extent to which they felt that the message stressed the negative implications of not performing the advocated behavior.

Finally, several questions were administered to explore whether feelings of threat or fear were differentially induced as a function of the treatments. Differential activation of such feelings might suggest a rival explanation for any observed treatment effects. Hence, on 7-point scales, subjects rated the extent to which the message made them feel fearful, tense, nervous, anxious, reassured, relaxed, and comforted. (The last three items were reverse-scored for analysis.)

### RESULTS

All data were analyzed as a 2 (involvement)  $\times$  2 (message framing) factorial design. Factor analyses were performed on all groups of dependent variables that consisted of three or more scales. Because the items

**Table 1**  
TREATMENT MEANS FOR PRODUCT ATTITUDES,  
BEHAVIORAL INTENTIONS, AND ALL PROCESS  
MEASURES

	Involvement			
	High		Low	
	Positive framing	Negative framing	Positive framing	Negative framing
Threat/fear index	3.32	3.58	3.45	3.39
Involvement check	5.35	5.01	4.58	4.32
Positive framing check	5.19	4.50	5.33	4.02
Negative framing check	2.92	4.79	2.85	4.73
Attitudes	4.82	5.70	5.36	4.27
Behavioral intentions	4.54	5.65	5.18	4.07
Total number of thoughts	5.33	5.42	5.23	5.17
Message-related thoughts	4.04	4.29	2.92	3.00
Simple evaluative thoughts	.83	.71	1.85	1.63
Positive thoughts	4.04	2.25	4.39	2.33
Negative thoughts	.71	2.71	.39	2.29
Total recall	6.17	6.25	4.62	4.25

comprising all such groups loaded on single factors and formed reliable scales (attitudes,  $\alpha = .82$ ; behavioral intentions,  $\alpha = .73$ ; threat/fear responses,  $\alpha = .86$ ; involvement check,  $\alpha = .89$ ), the items were averaged for analyses. In addition, because the two positive and two negative framing manipulation check scales were found to be highly correlated ( $r = .80$  and  $.92$ ), single indices were calculated that consisted of the average of the scales. Treatment means for all measures are reported in Table 1.

### Manipulation Checks

Examination of the issue involvement index reveals only a main effect of involvement ( $F_{1,94} = 8.18$ ,  $p < .01$ ). The advocacy was perceived as more involving when subjects were informed that individuals of their own age group rather than senior citizens were at risk of heart disease ( $M_s = 5.18$  vs.  $4.45$ ).<sup>6</sup>

The two indices assessing the framing manipulation both reveal only main effects of framing. Subjects felt that the message conveyed more positive information when it was positively rather than negatively framed ( $F_{1,94} = 13.88$ ,  $p < .001$ ;  $M_s = 5.26$  and  $4.26$ ), and they felt that the message conveyed more negative information when it was negatively rather than positively framed ( $F_{1,94} = 49.02$ ,  $p < .001$ ;  $M_s = 4.76$  and  $2.88$ ). Thus, these manipulation check measures suggest that the intended factors were manipulated successfully.

<sup>5</sup>As is customary in the relevant literature (e.g., Chaiken 1980), cognitive response and recall measures were administered after assessing attitudes and intentions. Note that statistical procedures assessing whether cognitive responses administered after attitudes merely yield rationalizations of attitudes have repeatedly discredited this possibility (Brock and Shavitt 1983).

<sup>6</sup>We refer to the involvement conditions as high and low even though both ratings on this manipulation-check measure are near the scale midpoint.

### Threat and Fear Responses

To assess the possibility that the treatments induced different levels of threat or fear in subjects and that this may account for any differences in attitudes or behavioral responses, responses to the threat and fear measures were analyzed. This index reveals no significant effects (all  $F_s < 1$ ), arguing against this possibility.

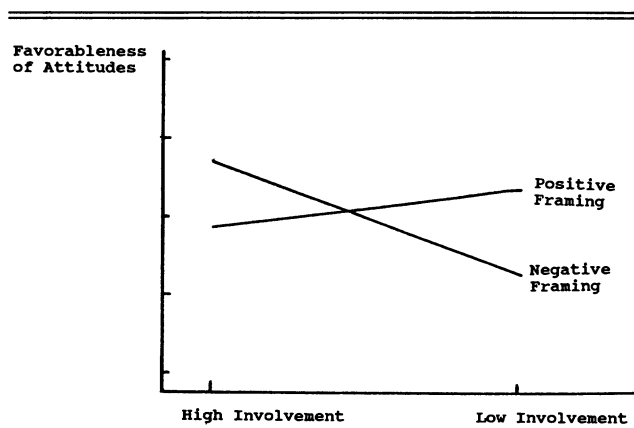
### Attitudes and Behavioral Intentions

ANOVAs performed on subjects' attitudes toward the advocated behavior reveal a two-way interaction of involvement by message framing on attitudes ( $F_{1,94} = 39.75$ ,  $p < .001$ ), which is illustrated in Figure 1. An analogous interaction emerges on the behavioral intention measure ( $F_{1,94} = 43.65$ ,  $p < .001$ ).

Followup analyses are consistent with  $H_1$ , which predicts that the negatively framed message should be more persuasive under high involvement, but the positively framed message should be more persuasive under low involvement. Specifically, in the high involvement condition the negatively rather than the positively framed message produced more favorable attitudes ( $M_s = 5.70$  vs.  $4.82$ ;  $F_{1,94} = 15.54$ ,  $p < .001$ ) and greater intentions to comply with the advocacy ( $M_s = 5.65$  vs.  $4.54$ ;  $F_{1,94} = 21.42$ ,  $p < .001$ ). In the low involvement condition, the positively rather than the negatively framed message yielded more favorable attitudes ( $M_s = 5.36$  vs.  $4.27$ ;  $F_{1,94} = 24.07$ ,  $p < .001$ ) and greater intended compliance ( $M_s = 5.18$  vs.  $4.07$ ;  $F_{1,94} = 21.52$ ,  $p < .001$ ).

If, as anticipated, high involvement conditions stimulated more detailed message processing than did low involvement conditions, subjects' responses should be more stable under high involvement. Indeed, correlations between attitudes and compliance intentions are higher when issue involvement is high ( $r = .81$ ) than when it is low ( $r = .46$ ).

**Figure 1**  
PLOT OF INTERACTION OF MESSAGE INVOLVEMENT BY  
MESSAGE FRAMING ON ATTITUDES



Main effects of involvement are the only other significant effects on attitudes ( $F_{1,94} = 8.28$ ,  $p < .01$ ) and intentions ( $F_{1,94} = 7.91$ ,  $p < .01$ ). Overall, attitudes and intentions are higher when issue involvement is high than when it is low.

### Cognitive Response and Recall Data

To explore the extent to which attitudes and behavioral intentions were mediated by detailed message processing versus simple inferential processing, cognitive response and recall data were examined. Following a modification of Sujan's (1985) coding scheme, two independent judges coded the cognitive response data for the total number of thoughts generated, the number of specific message-related thoughts that conveyed explicit reference to information presented in the message (e.g., "Taking a diagnostic blood test will help me control cholesterol"), the number of simple evaluative thoughts that represented global liking (e.g., "The diagnostic blood test is great"), and the numbers of both positive and negative thoughts generated.<sup>7</sup> Recall was coded for the total number of statements recalled. Interjudge agreement was 90% and coding discrepancies were resolved through discussion.

Significant treatment effects are absent in analysis of the total number of thoughts generated ( $F < 1$ ), perhaps because the heightened number of message-related and simple evaluative thoughts generated by subjects in the high and low involvement conditions, respectively, compensated one another.

The number of message-related thoughts generated, the number of simple evaluative thoughts generated, and the number of statements recalled each offer support for  $H_2$  and lend credence to the involvement manipulation. Both message-related thoughts and recall reveal main effects of involvement ( $F_{1,94} = 33.49$ ,  $p < .001$  and  $F_{1,94} = 39.74$ ,  $p < .001$ ), such that subjects generated more message-related thoughts and recalled more statements when involvement was high than when it was low ( $M_s = 4.17$  and  $2.96$  for thoughts and  $6.21$  and  $4.43$  for recall). An ANOVA on simple evaluative thoughts reveals a main effect of involvement ( $F_{1,94} = 28.43$ ,  $p < .001$ ), indicating that more simple evaluative thoughts were generated when involvement was low than when it was high ( $M_s = .77$  and  $1.74$ ).

Finally, analyses on the numbers of positive and negative thoughts generated reveal main effects of message framing ( $F_{1,94} = 87.60$ ,  $p < .001$  and  $F_{1,94} = 80.51$ ,  $p < .001$ , respectively). More positive thoughts were generated when message framing was positive than when it was negative ( $M_s = 4.21$  vs.  $2.29$ ), and more negative

<sup>7</sup>A small number of responses could not be classified as either message-related or simple evaluative thoughts (e.g., "I learned a lot about heart disease"). Treatment effects were absent on these extraneous thoughts ( $F < 1$ ).

thoughts were evoked when message framing was negative than when it was positive ( $M_s = 2.50$  vs.  $.55$ ).

#### *Mediation Analysis*

Multiple regression analyses provided further insight on the mediation of attitudes. Attitudes served as the criterion measure and both message-related thoughts and simple evaluative thoughts were the predictor variables. To the extent that attitudes are based on detailed processing, message-related thoughts should significantly predict attitudes, and to the extent that attitudes are based on simple inferential processing, simple evaluative thoughts should significantly predict attitudes.

Separate analyses performed in the high and low involvement conditions support expectations. Under high involvement, the only significant predictor of attitudes is message-related thoughts ( $\beta = .40$ ,  $t = 2.91$ ,  $p < .01$ ; for simple evaluative thoughts,  $\beta = .10$ ,  $t = .71$ ,  $p > .48$ ). In the low involvement condition, the only significant predictor of attitudes is simple evaluative thoughts ( $\beta = .65$ ,  $t = 5.90$ ,  $p < .001$ ; for message-related thoughts,  $\beta = .08$ ,  $t = .74$ ,  $p > .46$ ).

#### *DISCUSSION*

Our findings build on those of previous research and afford insight on several important issues. First, they offer a means of reconciling the opposing framing effects observed in the previously discussed studies. Second and more important, they provide a theoretical framework for anticipating more generally when either positively or negatively framed messages are likely to be more persuasive.

The data are consistent with current theorizing about the effects of involvement (e.g., Greenwald and Leavitt 1984). When issue involvement was low, people refrained from processing the message in detail and instead based their attitudes on simple inferences. The favorableness of the message frame appears to have been a peripheral cue used to derive such inferences. More specifically, because under low involvement individuals often draw and apply the inference that they agree more with issues associated with positive rather than negative cues, these individuals found the advocacy more persuasive when message framing was positive rather than negative.

When issue involvement was high and thus the use of detailed processing was substantial, the process of combining or integrating issue-relevant information into an overall attitude appears to have had an important role in persuasion. Individuals in the high involvement condition presumably assigned disproportionate weight to the negatively rather than the positively framed information and were more persuaded by it. It seems likely that when information was conveyed in a negative rather than positive form, the extent to which it was perceived as informative and consequential was enhanced (Fiske 1980). In turn, people presumably assigned it greater weight and thus viewed it as more persuasive.

The suggestion that highly involved individuals who process relevant message cues in detail would overweight negative information might seem to be in conflict with the persuasion literature (Chaiken 1980; Petty and Cacioppo 1983). The reason is that the detailed processing engaged in by involved individuals typically is assumed to result in normative, unbiased responses. Yet note that the assertion that persuasion among detailed processors is affected by "the manner in which a person combines and integrates issue- or product-relevant beliefs into an overall evaluative reaction," (Petty, Cacioppo, and Schumann 1983, p. 135) appears to leave open the possibility that such overweighting of negative information may occur during information integration. Similarly, Chaiken, Liberman, and Eagly (1989, p. 215–16) caution that the detailed processor "is not necessarily processing message- and issue-related data impartially."

Our study appears to hold important consequences for marketing theory. Conventional wisdom suggests that appeals identifying negative aspects or consequences of an issue can be effective if individuals are given clear and effective solutions to the issue (Sternthal and Craig 1974). Though this notion suggests that negatively framed appeals can be highly persuasive, our findings suggest that this conclusion may hold only if individuals who receive the appeal are sufficiently involved with the issue to process it in detail. Indeed, when issue involvement is low, messages that frame the appeal in terms of its benefits (positive framing) seem likely to be more effective.

Our research also has important marketing implications. Marketers might be advised to employ negatively framed messages when an audience's involvement with an ad issue is likely to be high. However, when the audience is likely to have a much more casual interest in the ad issue, positively framed messages might be advisable. Though numerous factors are likely to influence audience involvement, some important ones are the nature of the product category featured in the ad (e.g., audience involvement is likely to be greater for an ad announcing a sale on top designer merchandise than for one announcing a sale on end-of-season seconds merchandise), the media selected to communicate the ad (e.g., print media typically are thought to be more involving than TV), and the particular vehicle in which the ad is placed (e.g., in comparison with subscribers of *TV Guide*, who presumably are more sedentary and less health focused, subscribers of health- or fitness-oriented magazines such as *In Health* should find advocacies for health-related products more involving).

Because our research is exploratory and should be replicated with more realistic exposure environments and materials, research that examines the generalizability of the findings would be useful. Research also is needed to assess whether our findings can be replicated when advocacies are presented for other important health behaviors (e.g., engaging in safe sex practices, using sunscreen). Likewise, it seems worthwhile to explore whether

and under what conditions the framing outcomes will hold for non-health-related, more conventional products, issues, and behaviors that are likely to entail less risk or uncertainty than preventive health behaviors.

Finally, deductions that follow from the proposed interpretation of framing effects warrant investigation. Chaiken's (1980) contention that detailed and simple inferential processing can co-occur suggests that positively and negatively framed messages may be equally persuasive when equal levels of these types of processing co-occur. In addition, because attitudes derived from detailed message processing are thought to be more enduring and predictive of long-term behavior than those based on peripheral cues (Petty, Cacioppo, and Schumann 1983), it would be useful to examine whether the attitudes formed by highly involved subjects in response to message framing have greater longevity and better predict later behavior than do those derived by low involvement subjects. These and other extensions of the findings should be investigated.

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