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The Influence of Message Framing on Intentions to Perform Health Behaviors

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Prospect Theory proposes that people prefer taking risks to options that are certain when considering losses and prefer certainty to risk when considering gains (Kahneman & Tversky, 1979). As a result, individuals are expected to be persuaded to take risks when exposed to negatively framed messages. For instance, Meyerowitz and Chaiken (1987) demonstrated that exposure to negatively framed information promotes breast self-examination. However, the influence of message framing on other health behaviors has been inconsistent. Two studies examined the moderating effect of involvement with the health issue and type of target behavior on the influence of message framing on intentions to perform health behaviors relevant to preventing or detecting skin cancer. In our samples, women as compared to men were more concerned about sun tanning and skin cancer and therefore were considered to be more involved with this health issue. In Experiment 1, exposure to negatively framed versus positively framed messages differentially influenced the intentions of female (high involvement) and male (low involvement) subjects to obtain a skin cancer detection examination. In Experiment 2, women who read positively framed pamphlets were more likely than

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those who read negatively framed pamphlets to request sunscreen with an appropriate sun protection factor (a prevention behavior). © 1993 Academic Press, Inc.

INTRODUCTION

Allison views a public service announcement about skin cancer screening that states, "If skin cancer is detected early, it can be treated before it becomes life threatening." A similar ad urges Dave, "If skin cancer is not detected early, it cannot be treated before it becomes life threatening." Although both Allison and Dave hear messages about skin cancer screening, the information differs in its emphasis; one message stresses the *benefits* of being screened, the other outlines the *costs* of not being screened for cancer.

The terms *positive frame* and *negative frame* have been used to describe these two respective ways of presenting the same information (Kahneman & Tversky, 1979). Negatively and positively framed information have been shown to influence a person's choices, preferences, attitudes, and behaviors differentially (Tversky & Kahneman, 1981; Wilson, Purdon, & Wallston, 1988). In particular, negatively framed information should be more effective than positively framed information in persuading people to perform a behavior that is seen as a risky option (Meyerowitz & Chaiken, 1987). Accordingly, Dave, after hearing the advertisement, should be more likely to obtain a skin cancer screening than Allison.

However, message framing has not always produced a consistent effect on behavior, in general, and health behavior, in particular (Lopes, 1987; Maheswaran & Meyers-Levy, 1990; Wilson *et al.*, 1988). Although a number of these discrepancies may be attributed to differences in the operationalization of framing (see Fagley, 1993; Fagley & Miller, 1987), characteristics of both the decision maker and the behavior being promoted may also moderate the influence of positive versus negative frames. The present research examines the influence of some subject and behavior characteristics on a consistent manipulation of message framing within a single health domain, in this instance, skin cancer.

The Framing Postulate of Prospect Theory

The framing postulate of Prospect Theory suggests that people respond differentially to information presented as gains or losses (Kahneman & Tversky, 1979, 1982, 1984; Tversky & Kahneman, 1981). Prospect Theory proposes a value function that asserts that people avoid risks (they are risk-averse) when considering gains but prefer risks (they are risk-seeking) when considering losses. Consequently, preference for a risky option depends on whether the option is expressed in terms of gains (i.e., framed positively) or losses (i.e., framed negatively). For example, in a classic problem, people are presented with information about the outbreak of an epidemic that is expected to kill 600 people and asked to select one

of two programs (a program offering a guaranteed outcome or a program offering a risky outcome) to combat the disease (Tversky & Kahneman, 1981). In the positively framed condition, the two options are presented in terms of the number of lives saved. In the negatively framed condition, the options are presented in terms of the number of lives lost. People prefer the certain option when it is expressed in terms of number of lives saved (positive frame), but reject that option in favor of the risky option when it is expressed in terms of numbers of lives lost (negative frame). Although Prospect Theory was developed using two-choice decisions such as the disease problem illustrated above, the underlying assumption that people respond differentially to positively and negatively framed information has been applied to a broad range of decision problems ranging from consumer preferences for ground beef (Levin, 1987; Levin & Gaeth, 1988) to performing breast self-examination (Meyerowitz & Chaiken, 1987).

Prospect Theory distinguishes between two different phenomena: framing effects and reflection effects (Fagley, 1993). These effects differ in how positively and negatively oriented information is constructed. Reflection effects involve preferences for actual gains or losses that are symmetrical (e.g., winning or losing $100). Framing effects involve preferences for an option that is framed to appear as either a gain or a loss. The distinction between reflection and framing effects can be illustrated in the domain of losses. A negative reflection describes an outcome that entails losing something one has (e.g., losing $100). However, a negative frame may describe the negative consequences of an option (e.g., surgery has a 50% chance of *fatality*), which is not an actual loss, but instead is framed as a loss. This paper focuses only on *framing* effects.

In considering framing effects, one must recognize that there are a number of ways in which information can be framed. Information can be framed such that the same behavior (e.g., having a skin cancer examination) is presented as having either positive or negative consequences. For example,

POSITIVE FRAME: If a cancerous growth is detected, 19 of 20 growths are the less deadly nonmelanoma cancer;

NEGATIVE FRAME: If a cancerous growth is detected, 1 of 20 growths are the more deadly melanoma cancer.

In this example, the positive frame emphasizes the positive consequences of having a skin cancer examination, whereas the negative frame emphasizes the negative consequences of having the examination. We label this type of manipulation *different consequences* framing.

Same consequences framing is an alternative way of framing informa-

tion.[1] Instead of referring to the different consequences of performing the same behavior, the positive and negative frames depict the same consequences in terms of either performing or not performing a behavior. Although both frames emphasize the same consequences, in one case they are obtained (positive) and in the other they are failed to be obtained (negative). For example,

POSITIVE FRAME: If you have a skin cancer examination, a cancerous growth can be detected before it becomes life threatening,

NEGATIVE FRAME: If you do not have a skin cancer examination, a cancerous growth cannot be detected before it becomes life threatening.

In both frames, the consequences of having an examination are emphasized (i.e., early detection of skin cancer). However, the positive frame describes the positive consequences of having an examination, and the negative frame describes the positive consequences that one fails to obtain by not having an examination. Whether *same* or *different consequences* framing is manipulated depends upon the nature of the information being presented. Although *same consequences* framing can be used for any information, *different consequences* framing can be used only if the information to be framed offers specific negative and positive consequences (e.g., success vs failure; life vs death).

Message Framing and Health-Related Behaviors

Experiments concerning message framing and health behavior have been inconsistent in their manipulations of framing. For example, studies on surgical preferences have consistently used a *different consequences* manipulation, emphasizing either the positive or the negative consequences of surgery (e.g., McNeil, Pauker, Sox, & Tversky, 1982). In contrast, Meyerowitz and Chaiken (1987) used a *same consequences* manipulation in which both frames emphasized the importance of performing breast self-examination (BSE). The difference in framing manipulations is noteworthy because it may explain apparently contradictory findings. Exposure to positively framed information increased preference for the surgical option in the first type of study (e.g., McNeil *et al.*, 1982), but negatively framed information motivated BSE behavior in the second type (Meyerowitz & Chaiken, 1987). Although the relative effectiveness of positively and negatively framed information could be due to these different framing manipulations, a consistent framing effect on health-related behaviors is not observed even among studies that have all used *same consequences* framing. For example, negatively framed messages effec-

[1] The terms *same* and *different consequences* should not be confused with the terms *same* and *different outcome* that are used by Fagley (1993) to distinguish between reflection and framing effects.

tively promoted BSE (Meyerowitz & Chaiken, 1987), but positively (Christophersen & Gyulay, 1981) and combined positively and negatively framed messages (Treiber, 1986) increased the use of an infant car restraint. Furthermore, a combined positively and negatively framed message decreased the number of cigarettes smoked by people with a low desire to quit, but framing had no effect on smoking cessation for people with a moderate or high desire to quit (Wilson, Wallston, & King, 1990).

Target Behavior Promoted

A variable that may help clarify the influence of message framing on health behaviors is the nature of the behavior being promoted. Framing studies have examined behaviors that can detect a health problem (e.g., BSE), those that can prevent a health problem (e.g., infant car restraint), as well as those that can alleviate a health problem (e.g., surgery). Previous research has revealed that distinguishing between prevention- and detection-oriented health behaviors can have important implications for predictions about risk assessment, decisions, and the maintenance of behavior changes (see Fielding, 1978; Kasl & Cobb, 1966; Kirscht, 1983; Weinstein, 1988). Perhaps characteristics of these different behavior types moderate the effectiveness of positively or negatively framed messages.

Returning to the example at the start of this paper, imagine if Allison and Dave had listened to framed messages about *preventing* skin cancer with sunscreen, instead of the early *detection* of skin cancer. Would Dave, after hearing the negatively framed information, be more likely to use sunscreen? Perhaps not. Using sunscreen is a *prevention behavior,* which differs from obtaining a skin cancer screening, a *detection behavior.* The perceived risk associated with a detection behavior (i.e., the possibility of finding a health problem) is assumed to be a prominent reason why negatively framed messages are effective. Because risky options are preferred when people are considering losses, negatively framed messages are more likely to facilitate the performance of detection behaviors. However, prevention behaviors may not be perceived as risky at all. They are performed to deter the onset or occurrence of a health problem (e.g., using sunscreen to prevent skin cancer). Choosing to perform a prevention behavior is a less-risky or, in the language of Prospect Theory, a risk-averse option—it maintains good health. Because risk-averse options are preferred when people are considering benefits or gains, positively framed messages may be more likely to facilitate the performance of preventive behaviors.

Detection behaviors. The Meyerowitz and Chaiken (1987) study on BSE illustrates the influence of message framing on a detection behavior. In their preliminary examination of women's concerns about BSE, Meyerowitz and Chaiken noted that "BSE is a risky behavior that involves uncertain outcomes: *You don't do it to prevent cancer, you do it to detect*

cancer" (emphasis added, p. 501). Therefore, exposure to negatively framed information about breast cancer may cause people to perceive themselves as being at greater risk, making them more likely to examine their breasts for lumps (the risky option). In contrast, exposure to positively framed information may cause people to feel less at risk, making them less likely to perform BSE (the risk-averse option). Their findings were consistent with their hypotheses: women who were exposed to negatively framed information about BSE expressed the most positive attitudes about BSE (at the 4-month interview) and were more likely to perform BSE. This finding has been replicated, although only among those subjects who initially perceived performing BSE as a high-risk behavior (Meyerowitz, Wilson, & Chaiken, 1991).

Prevention Behaviors. Only a few studies have examined framing effects on behaviors that maintain one's health or prevent the onset of a health problem. Studies have revealed that positively framed information (Christophersen & Gyulay, 1981) or a combination of positively and negatively framed information (Treiber, 1986) best promotes the use of infant car restraints. A positively framed message about self-esteem increased intentions to exercise regularly (Robberson & Rogers, 1988). However, in the same study, positively and negatively framed messages about health did not influence intentions to exercise differentially. Finally, a combined positively and negatively framed message influenced the number of cigarettes smoked, but only for people who had a low desire to quit (Wilson *et al.*, 1990). Although research findings on prevention behaviors are inconsistent, they do suggest that there may be some advantage for positive framing. This pattern stands in contrast to research on detection behaviors favoring negative framing.

Whereas only a few framing studies have considered prevention behaviors, quite a few have examined preferences for surgery to alleviate an existing health problem (Eraker & Sox, 1981; Levin, Schnittjer, & Thee, 1988; Marteau, 1989; McNeil *et al.*, 1982; Wilson, Kaplan, & Schneiderman, 1987). Although these surgical options were clearly not prevention behaviors, the results of these studies may support indirectly the hypothesis that positively framed information facilitates the performance of prevention behaviors. In these studies, selecting surgery is the risk-averse option as it may alleviate a health problem and lead to a longer life. Consequently, surgery should be preferred more often when presented in terms of the likelihood of surviving (positive frame) than when presented in terms of the likelihood of dying (negative frame). In fact, each of these studies revealed that exposure to positively framed information leads to greater preferences for the surgical option.

By organizing the framing and health behavior literature around the type of health behavior considered, we derived the hypothesis that the relative influence of positively and negatively framed information is sen-

sitive to the nature of the behavior being promoted. Specifically, positively framed messages should facilitate the performance of prevention behaviors, but negatively framed messages should facilitate the performance of detection behaviors.

Issue Involvement

Behavior type may not be the only way to explain the diversity of results in this literature. Maheswaran and Meyers-Levy (1990) have proposed that degree of issue involvement also may reconcile the discrepant advantage of positive framing for consumer preferences (e.g., Levin & Gaeth, 1988) and negative framing for health behaviors (e.g., Meyerowitz & Chaiken, 1987). Consistent with research on attitude change, degree of issue involvement should influence whether a person processes information either in a detailed and integrative manner (systematically) or in a superficial manner relying on peripheral cues (heuristically; Chaiken, 1980; Petty & Cacioppo, 1986). People who are not very involved in or concerned about a behavioral domain are predicted to process information heuristically. Positively valenced information has been shown to be more persuasive than negatively valenced information when information is not extensively processed (Petty, Cacioppo, & Schumann, 1983). Individuals who are highly involved in a behavioral domain, however, are predicted to process information systematically. Previous research has suggested that negative information has a greater influence than positive information when processed systematically (Kanouse, 1984; Wright, 1981).

Maheswaran and Meyers-Levy (1990) hypothesized that the advantage of positive framing for promoting preferences for ground beef is due to the uninvolving nature of the issue, whereas negative framing's advantage in the domain of breast self-examination is due to the highly involving nature of the issue. This hypothesis was tested by assessing attitudes toward a diagnostic blood test for cholesterol following exposure to positively or negatively framed arguments about heart disease. Undergraduates were informed that heart disease was either a problem only for the elderly (low involvement) or a problem even for people under the age of 25 (high involvement). Consistent with their predictions, Maheswaran and Meyers-Levy (1990) found that for people who were more involved in the behavioral domain, reading negatively framed information led to more favorable attitudes about the test. Furthermore, people who were less involved in the behavioral domain held more favorable attitudes after reading positively framed information.[2]

In order to understand the influence of message framing on health

[2] Using a *different consequences* manipulation of framing, Levin, Schnittjer, and Thee (1988) reported an effect of personal relevance on framing in one experiment, but failed to replicate their finding in a second experiment.

behavior, the moderating effects of issue involvement as well as the target behavior promoted were considered. Taken together, these factors offer somewhat contradictory predictions. Considerations of issue involvement suggest that negatively framed information is more effective under high involvement, but positively framed information is advantageous under low involvement. However in examining the framing studies assessed earlier, it is unclear why thinking about infant car restraints or surgical options is any less involving than thinking about breast self-examination. Because exposure to positively framed messages has been shown to promote the use of infant car restraints as well as increase intentions to have surgery, degree of issue involvement may not uniquely account for the differential effects of message framing on health behavior. Instead, a framework that addresses the nature of the health behavior promoted may predict best the relative influence of positively and negatively framed information.

Skin Cancer

Skin cancer was used as the health issue in our studies because it is often preventable and certainly pertinent to college-aged students. Skin cancer is the most frequently diagnosed form of cancer in the United States, and the rate is rapidly rising for the most serious type, malignant melanoma (American Cancer Society, 1986; Skolnik, 1991). This alarming increase has been attributed to the popularity of sunbathing, increased leisure time, and changes in risk-taking attitudes (Keesling & Friedman, 1987). Although skin cancer may not develop until later in one's adult life, 80% of a person's lifetime exposure to the sun occurs before age 21 (Banks, Silverman, Schwartz, & Tunnessen, 1992). However, the majority of skin cancers can be prevented by avoiding prolonged exposure to the sun's harmful ultraviolet rays or by using sunscreen with a sun protection factor (SPF) of 15 or higher. Clearly, skin cancer is one area in which health behavior recommendations should have an important impact.

In addition, the degree of involvement (high or low) and type of behavior (detection or prevention) can both be addressed within the domain of skin cancer. One form of skin cancer *prevention* is to use sunscreen with an SPF of 15 or higher; likewise, obtaining a skin cancer examination is a way to *detect* skin cancer. Regarding level of involvement, research on attitudes related to skin cancer has shown that women and men perceive skin cancer, albeit mistakenly, to be differentially self-relevant (Banks *et al.*, 1992). Perhaps because of the greater importance that Western culture places on the color and appearance of a woman's skin, women perceive issues related to skin cancer as more self-relevant than men (Keesling & Friedman, 1987). These differences should lead women, as compared to men, to perceive information about skin cancer as more involving and self-relevant.

The Present Experiments

The relative influence of positively and negatively framed information on health behavior was explored within the domain of skin cancer. In particular, we examined the relative influence of two potential moderating variables: level of involvement and type of behavior. In the area of skin cancer, women as compared to men are more concerned about sun tanning and skin cancer. Therefore, gender was used as a proxy for degree of issue involvement with skin cancer. The detection and prevention behaviors examined were a clinical skin examination and the use of sunscreen with an SPF of 15 or higher, respectively.

If one considers only the findings of Maheswaran and Meyers-Levy (1990), exposure to negatively framed information should be predicted to promote appropriate attitudes and behaviors regarding skin cancer among women, and, exposure to positively framed information should promote appropriate attitudes and behaviors regarding skin cancer among men. Furthermore, these predictions should hold regardless of whether a prevention or a detection behavior is considered. However, based on our review of the literature, we predict that the type of behavior promoted will moderate the relative influence of positively and negatively framed information. Specifically, exposure to negatively framed information should promote appropriate detection-related behaviors, but exposure to positively framed information should promote appropriate prevention-related behaviors. No predictions were made as to whether or not the expected frame by behavior type interaction would differ for high (women) and low (men) involvement subjects.

EXPERIMENT 1

Female and male undergraduates read information about skin cancer that was either positively or negatively framed. Immediately after reading the information, subjects' attitudes and behavioral intentions were measured. An approximately equal number of subjects in each framing condition evaluated their intention to perform behaviors related to either the detection or the prevention of skin cancer. Finally, subjects also completed a brief set of items assessing perceptions of risk for and beliefs about skin cancer. Each subject was assigned to a condition in one of two 2 × 2 between-subjects designs: *Detection behavior:* 2 (*information frame:* positive, negative) × 2 (*subject sex:* female, male) or *Prevention behavior:* 2 (*information frame:* positive, negative) × 2 (*subject sex:* female, male).[3]

[3] Subjects did not receive both detection and prevention items due to concerns that because the prevention behavior was easier and more familiar than the detection behavior a response bias would lead subjects to say they would perform prevention but not detection behaviors.

METHOD

Subjects

Five hundred twenty-five undergraduates (245 female, 280 male) participated in the experiment. Because the issues of skin cancer and sun exposure are differentially relevant to white and nonwhite ethnic groups, only white subjects were included in the following analyses. Consequently, there were 198 subjects in the detection behavior condition (positive frame: 39 female, 57 male; negative frame: 50 female, 47 male) and 199 subjects in the prevention behavior condition (positive frame: 48 female, 47 male; negative frame: 43 female, 57 male).

Materials

Skin cancer information sheet. The positively framed and the negatively framed information sheets were designed to differ only in how information was presented. A *same consequences* manipulation of framing was used throughout. Each handout was one page long and contained information concerning the incidence and etiology of skin cancer as well as how to detect and prevent the disease. The sheet was divided into five sections: (a) What is skin cancer?, (b) How serious are these cancers?, (c) Am I at risk for getting skin cancer?, (d) How do I know if I have skin cancer?, and (e) Is there anything I can do to protect myself against skin cancer? Information about both the prevention and detection of skin cancer was included in each pamphlet for ethical reasons; we did not wish to withhold information from participants. Care was taken to ensure that equal emphasis was placed on information concerning the prevention and the detection of skin cancer.

The positively framed handout described the statistics, facts, and arguments by emphasizing benefits rather than risks, and focusing on the positive aspects of being concerned about skin cancer (e.g., *"The earlier it is detected, the better the person's chances are for full recovery"*; *"If they are detected early, most of these cancers are curable, and will not be fatal"*; *"People who have never had a blistering sunburn in the past are less likely to get skin cancer during their life than those who have had a blistering sunburn"*; *"You can significantly decrease your chances of ultimately getting skin cancer by not exposing your skin to the sun without protection"*).

The negatively framed pamphlet described the same information but emphasized losses rather than gains, and focused on the risks of not performing cancer-related behaviors (e.g., *"The later it is detected, the poorer the person's chances are for full recovery"*; *"Unless they are detected and treated early, most of these cancers are not curable, and will be fatal"*; *"People who have had a blistering sunburn in the past are more likely to get skin cancer during their life than those who have never had a blistering sunburn"*; *"You can significantly increase your chances of ultimately getting skin cancer by exposing your skin to the sun without protection"*).

General attitude measures. There were two groups of attitude measures:

(a) BELIEFS ABOUT SKIN CANCER. Three items assessed subjects' beliefs about skin cancer (i.e., "Are you concerned about developing skin cancer?", "How dangerous do you think it is to get a sunburn?", "Do you feel skin cancer is a serious health problem?"). Ratings were made on 9-point scales ranging from *Not at all* (1) to *Extremely* (9).

(b) RISK PERCEPTIONS. Two questions assessed subjects' perceptions of the likelihood that they or a "typical person" would develop skin cancer. Ratings were made on 9-point scales ranging from *Not at all* (1) to *Extremely* (9).

Behavioral intention measures. Subjects rated the likelihood that they would perform a series of behaviors related to either skin cancer prevention or skin cancer detection.

(a) SKIN CANCER PREVENTION. Seven items assessed subjects' intentions to perform behaviors related to preventing skin cancer (e.g., "How likely is it that you will use sunscreen next time you are out in the sun?", "How likely is it that you would use sunscreen on a

cloudy day?", "How likely is it that you would spend the day in the sun in order to get a tan?"). All ratings, except one, were made on 9-point scales ranging from *Not at all* (1) to *Extremely* (9). Subjects' responses to these items were combined to form an overall prevention behavior scale (Cronbach's alpha = .65).

(b) SKIN CANCER DETECTION. Seven items assessed subjects' intentions to perform behaviors related to detecting skin cancer (e.g., "How likely is it that you would incorporate examining your skin into your usual health routine?", "How interested would you be in making an appointment to get a skin cancer examination at the Yale Health Plan?", "How interested would you be in learning how to check your own skin for the development of skin cancer?"). All ratings were made on 9-point scales ranging from *Not at all* (1) to *Extremely* (9). Subjects' responses to these items were combined to form an overall detection behavior scale (Cronbach's alpha = .67).

Procedure

Subjects were given the skin cancer information sheet as part of a brief health information survey. They were instructed to read the information and then answer a series of questions photocopied on to the back of the sheet. Subjects were instructed to complete the questionnaire individually and were given approximately 10 min to complete the task.

Results

Because every subject completed the same general attitude and risk perception questions prior to the behavioral intention measure, these items were analyzed across all subjects. Responses to the prevention and the detection behavior scales, however, were analyzed independently.

Beliefs and Concerns about Skin Cancer

A two-way MANOVA across subjects' beliefs about and perceptions of risk for skin cancer revealed a significant main effect for *subject sex* (Wilks's Lambda = .85, $F(5, 381) = 12.82$, $p < .001$) as well as a significant main effect for *information frame* (Wilks's Lambda = .96, $F(5, 381) = 2.51$, $p < .03$).[4] The relevant cell means are presented in Tables 1 and 2, respectively. As expected, women—independent of *information frame*—were more concerned about developing skin cancer ($F(1, 388) = 40.61$, $p < .0001$), felt that skin cancer was a more serious health problem ($F(1, 387) = 16.99$, $p < .0001$), and thought that developing a sunburn was more dangerous ($F(1, 388) = 50.69$, $p < .0001$) than did men. Both men and women who were exposed to negatively framed information compared to those who were exposed to positively framed information gave higher ratings to each of these beliefs ($F(1, 388) = 3.78$, $p < .05$; $F(1, 387) = 8.44$, $p < .004$; $F(1, 388) = 5.28$, $p < .02$, respectively).

Subjects' perceptions of the likelihood that they or a "typical person" will develop skin cancer showed a similar pattern of results. Women rated both their own perceived risk and the perceived risk of another person

[4] MANOVAs were run on all possible main effects and interactions. However, only those that were significant are reported.

TABLE 1
MEANS AND STANDARD DEVIATIONS FOR BELIEFS ABOUT SKIN CANCER BY FRAMING CONDITION AND SUBJECT SEX IN EXPERIMENT 1

	Framing	
	Positive	Negative
Danger of sunburn	5.82[a]	6.23[b]
	(1.85)	(1.82)
Concern about skin cancer	5.05[a]	5.50[b]
	(2.25)	(2.33)
Skin cancer as health problem	6.42	6.93
	(1.97)	(1.65)
	Sex	
	Female	Male
Danger of sunburn	6.70[a]	5.44[b]
	(1.60)	(1.85)
Concern about skin cancer	6.04[a]	4.61[b]
	(2.19)	(2.19)
Skin cancer as health problem	7.08	6.33
	(1.72)	(1.84)

Note. Means should be compared horizontally. Those found to differ reliably ($p < .05$) from each other have different superscripts. All means were measured on a 9-point Likert scale.

TABLE 2
MEANS AND STANDARD DEVIATIONS FOR PERCEPTIONS OF RISK FOR SKIN CANCER BY FRAMING CONDITION AND SUBJECT SEX IN EXPERIMENT 1

	Framing	
	Positive	Negative
Risk to self	4.61	4.78
	(1.90)	(1.91)
Risk to others	4.74[a]	5.06[b]
	(1.45)	(1.34)
	Sex	
	Female	Male
Risk to self	5.04[a]	4.38[b]
	(1.90)	(1.86)
Risk to others	5.09	4.72
	(1.34)	(1.42)

Note. Means should be compared horizontally. Those found to differ reliably ($p < .05$) from each other have different superscripts. Means were measured on a 9-point Likert scale.

for developing skin cancer as significantly higher than men's assessments of their own and others' risk ($F(1, 388) = 11.80$, $p < .001$, and $F(1, 386) = 6.67$, $p < .01$, respectively). Although subjects in the two framing conditions did not differ in their perceptions of risk for cancer for themselves ($F(1, 388) = 1.02$, ns), *information frame* did influence perceptions of risk for others. Subjects who read the negatively framed pamphlet rated the perceived risk of other people getting cancer as significantly higher than subjects who read the positively framed pamphlet ($F(1, 386) = 5.56$, $p < .01$).

Behavioral Intention Measures

Based on previous research (Maheswaran & Meyers-Levy, 1990) an *information frame* by *subject sex* interaction would be expected for subjects' intention to perform behaviors related to either the detection *or* the prevention of skin cancer. Women should express stronger intentions after being exposed to negatively framed information. However, men should express weaker intentions after being exposed to negatively framed information. We predicted that information frame would influence intentions to perform detection and prevention behaviors differentially. Exposure to negatively framed information should promote intentions to perform detection related behaviors, but exposure to positively framed information should promote intentions to perform prevention-related behaviors.

Skin cancer detection scale. Women as compared to men expressed greater intentions to perform detection behaviors related to skin cancer ($F(1, 185) = 16.00$, $p < .0001$). However, there was a significant *information frame* by *subject sex* interaction, illustrated in Fig. 1, on subjects' intention to perform behaviors related to skin cancer detection ($F(1, 185) = 3.96$, $p < .05$). The pattern of the interaction revealed that although women generally expressed greater intentions than men to obtain a skin examination, exposure to negatively framed information led women to be even more likely and men even less likely to intend to obtain a skin exam.

Skin cancer prevention scale. An analysis of subjects' responses to the skin cancer prevention scale produced no significant effects of *information frame* on subjects' intention to perform behaviors related to skin cancer prevention. However, women ($M = 5.64$) expressed a greater intention to perform skin cancer prevention behaviors than men ($M = 4.41$; $F(1, 187) = 37.89$, $p < .0001$).

Discussion

Consistent with a priori expectations, issues related to skin cancer were of a greater concern to women than men. Women reported being more concerned about developing skin cancer and felt that skin cancer was a

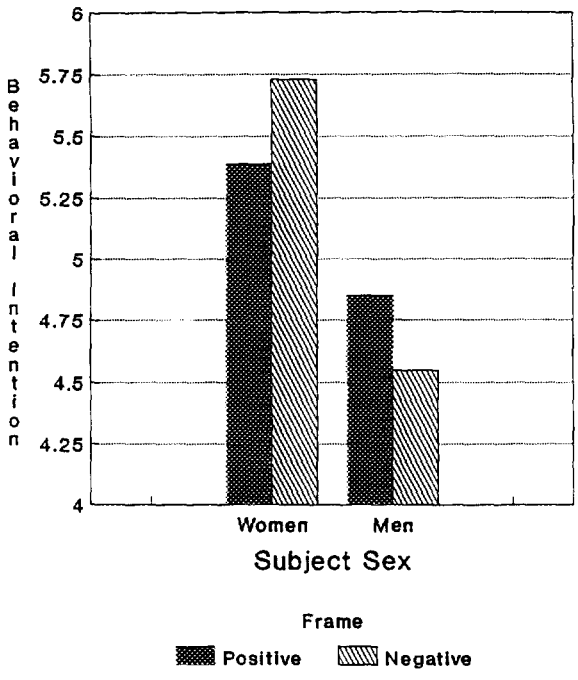

FIG. 1. Mean ratings of intention to perform skin cancer detection behavior as a function of information frame and subject sex.

more serious health problem. Furthermore, women's perceptions of risk for developing skin cancer were higher than men's perceptions of risk. These findings help to confirm our assumption that gender was a reasonable proxy for degree of issue involvement. However, because exposure to negatively framed information heightened both men and women's concerns about skin cancer, these variables were not used in subsequent analyses as independent measures of involvement.

Subjects' intentions to perform behaviors related to skin cancer detection replicated the pattern of results reported by Maheswaran and Meyers-Levy (1990), who had also examined intentions to perform a detection behavior. The pattern of this interaction was consistent with the prediction that because women and men differ in their involvement with skin cancer, they would respond differentially to negatively framed information. However, because involvement was not independently manipulated in this study, the moderating effect of involvement was not tested directly in this experiment.

Some indirect support for the role of involvement was found in the behavioral intentions of the 128 subjects who were not caucasian.[5] Because

[5] We thank an anonymous reviewer for suggesting this analysis.

of their skin pigmentation, these men and women should not be very involved with or concerned about skin cancer. Consistent with this expectation, their degree of concern about skin cancer (M = 3.82), their belief that skin cancer is a series health problem (M = 6.35), and their perception that a sunburn is dangerous (M = 5.58) were quite similar to those of the white men and furthermore did not differ by *subject sex* or *information frame.* Accordingly, a positive framing effect should be observed on their intentions to perform behaviors related to skin cancer detection. However, if the earlier finding for gender was due to a factor other than involvement, a positive framing effect would be expected only for men. Consistent with the involvement-based prediction, both women and men who were exposed to positively framed information reported somewhat greater intentions to perform a detection behavior (*Positive M* = 4.30 vs *Negative M* = 4.01).[6]

Unfortunately, framing had no effect on either men or women's intentions to perform behaviors related to the *prevention* of skin cancer. This null result undermines our ability to assess our predictions regarding the influence of message framing and involvement on intentions to perform different types of health behaviors. The absence of a framing effect for prevention behaviors in the same study that has demonstrated a framing effect on detection behaviors may suggest that framing influences these two types of behaviors differentially. However, a more parsimonious account for the prevention behavior finding is that the set of items used in this experiment was not sensitive enough to detect a framing effect. It may be more difficult to assess intentions to use sunscreen, as compared to intentions to have a skin examination, because people are quite familiar with the social desirability of using sunscreen and therefore may be inclined merely to report that they intend to use it. The fact that women reported greater intentions than men to use sunscreen may be due to both their greater concern about skin cancer and their general familiarity with skin products. In Experiment 2, we focused solely on behaviors related to skin cancer prevention providing behavioral options that may relate more directly to skin cancer prevention attitudes. In particular, subjects were brought into the lab and provided the opportunity to request free samples of sunscreen and asked to select a level of SPF. SPF may be an especially good measure of subjects' concerns because, unlike merely requesting a free sample of sunscreen, it may be less influenced by motives to behave in socially desirable ways. Furthermore, only the application of sunscreen with appropriate levels of SPF allows sunscreen use to be described as a prevention behavior.

[6] This effect was not significant due to insufficient power. A similar analysis on intentions to perform prevention behaviors revealed no substantive effect of information frame.

EXPERIMENT 2

This experiment offered a more extensive examination of the influence of framing on prevention behaviors related to skin cancer. Male and female undergraduates were provided with either positively or negatively framed pamphlets about skin cancer. After reading the pamphlets and completing several ratings, subjects were given postage-paid postcards that they could mail in requesting sunscreen as well as more information about skin cancer prevention. Positively framed information was expected to have a beneficial influence on attitudes and behaviors related to the prevention of skin cancer.

Method

Overview

Subjects were brought into the laboratory and asked to evaluate health education materials on skin cancer. Subjects read positively or negatively framed information about skin cancer, and subsequently rated the potential effectiveness of the pamphlet as well as their own attitudes about skin cancer. They were then given the opportunity to request a free sample of sunscreen and/or more information about skin cancer. Female and male subjects were randomly assigned to either the positive or negative frame condition. Thus, Experiment 2 is a 2 (*information frame:* positive, negative) × 2 (*subject sex:* female, male) between-subjects design.

Subjects

One hundred forty-six caucasian undergraduates (73 female, 73 male) participated in this experiment. Ninety subjects were recruited from an introductory psychology class and received course credit for their participation. Fifty-six subjects responded to recruitment posters and received $5 for their participation. Data from three subjects could not be used due to experimenter error.

Materials

Skin cancer pamphlet. The skin cancer pamphlets were adapted from the ones used in Experiment 1. The one-page information sheet used in Experiment 1 was converted into a four-page brochure. To provide added credibility, the pamphlets were professionally designed, printed, and reproduced.

Self-report measures. There were four groups of self-report measures:[7]

(a) AFFECTIVE REACTIONS TO PAMPHLETS. A 10-item questionnaire based on one previously developed for an earlier breast cancer study (Rothman, Salovey, Turvey, & Fishkin, 1993) assessed subjects' affective reactions to the pamphlet (e.g., "how relieved did the pamphlet make you feel?", "how interesting was the pamphlet to you?", "how sad did the pamphlet make you feel?"). Ratings were made on 10-point scales ranging from *Not at all* (1) to *Very much* (10). This measure was divided a priori into three subscales: *Negative reactions* (Cronbach's alpha = .78), *Positive reactions* (Cronbach's alpha = .72), and *Interest in the pamphlet* (Cronbach's alpha = .70).

(b) RISK PERCEPTIONS. Four questions assessed subjects' perception of the likelihood that

[7] The distributions of several self-report measures (e.g., self-efficacy, beliefs about skin cancer) used in this study produced skewed response patterns and were not analyzed.

TABLE 3
MEANS AND STANDARD DEVIATIONS FOR AFFECTIVE REACTIONS TO THE PAMPHLET IN EXPERIMENT 2

	Framing	
	Positive	Negative
Positive reactions	4.83[a]	3.61[b]
	(1.48)	(1.40)
Negative reactions	3.67[a]	4.60[b]
	(1.47)	(1.70)
Interest in pamphlet	6.84	7.20
	(1.54)	(1.09)

Note. Means should be compared horizontally. Those found to differ reliably ($p < .05$) from each other have different subscripts. All means were measured on a 10-point Likert scale.

they or the "average Yale student" would experience or die from skin cancer. Ratings were made on 5-point scales ranging from *Not at all* (1) to *Very much* (5).

(c) KNOWLEDGE ABOUT SKIN CANCER. Seven multiple-choice questions tested subjects knowledge of facts about skin cancer presented in the pamphlet.

(d) DEMOGRAPHICS. Thirteen items assessed demographic characteristics as well as general health history.

Behavioral measures. Two behavioral measures were included in this experiment.

(a) FREE SAMPLE OF SUNSCREEN. Subjects were given a postage-paid postcard that they could mail in to receive a free sample of sunscreen. On the postcard, subjects were asked to choose one of four levels (2, 6, 8, 15) of SPF.

(b) INFORMATION POSTCARD. Subjects were given a postage-paid postcard to request additional information about skin cancer from the Cancer Prevention Research Unit.

Procedure

Subjects participated in groups and were seated around a large table. A female experimenter explained that the experiment concerned the evaluation of health education materials. After signing a consent form, subjects read either a positively or negatively framed pamphlet. The pamphlets were then collected, and the first set of measures distributed. For each set of questions, the experimenter read the directions and waited for every subject to finish each section before proceeding. Finally, subjects were given postcards to mail in for informational pamphlets and/or sunscreen samples.

Results

Affective Responses to the Pamphlet

A two-way MANOVA across the three affect reaction scores revealed a significant main effect for *information frame* (Wilks's Lambda = .80, $F(3, 137) = 11.20$, $p < .0001$). As reported in Table 3, subjects exposed to negatively framed information reacted with more negative affect and less positive affect than subjects exposed to positively framed information ($F(1, 139) = 12.05$, $p < .001$; $F(1, 139) = 24.92$, $p < .0001$, respectively).

TABLE 4
MEANS AND STANDARD DEVIATIONS FOR PERCEPTIONS OF RISK FOR SKIN CANCER BY FRAMING CONDITION AND SUBJECT SEX IN EXPERIMENT 2

	Framing	
	Positive	Negative
Risk to self	2.91[a]	3.42[b]
	(1.30)	(1.62)
Risk to others	3.77[a]	4.67[b]
	(1.06)	(1.03)
	Sex	
	Female	Male
Risk to self	3.24	3.07
	(1.68)	(1.24)
Risk to others	4.56[a]	3.82[b]
	(1.02)	(1.13)

Note. Means should be compared horizontally. Those found to differ reliably ($p < .05$) from each other have different superscripts. Means were measured on a 5-point Likert scale.

Framing had no influence on how interesting subjects found the pamphlets ($F(1, 139) = 2.49$, ns). In addition, subjects did not significantly differ across framing conditions in the amount of knowledge they acquired from the information pamphlets (Positive frame $M = 5.28$ out of 6.00 and Negative frame $M = 5.50$ out of 6.00; $F(1, 139) = 3.10$, $p < .10$).

Risk Perceptions

A two-way MANOVA across all risk perception measures revealed a significant main effect for *information frame* (Wilks's Lambda = .80, $F(4, 136) = 8.07$, $p < .0001$) and a significant main effect for *subject sex* (Wilks's Lambda = .84, $F(4, 136) = 6.38$, $p < .0001$). Follow-up univariate analyses are reported below, and relevant means are listed in Table 4.

An examination of subjects' assessments of self-risk showed that exposure to negatively framed information led to higher estimates of self-risk than positively framed information ($F(1, 139) = 4.25$, $p < .05$). Information framing had an even larger effect on subjects' perceptions of another person's risk for developing skin cancer; subjects who read negatively framed information assigned higher estimates of risk to another person's chance of getting skin cancer ($F(1, 139) = 30.14$, $p < .0001$). *Subject sex* had an effect on risk perceptions independent of message framing that was somewhat similar to the effects reported in Experiment 1. Although women as compared to men reported higher perceptions of

another person's risk for skin cancer ($F(1, 139) = 20.72$, $p < .0001$), women and men did not differ in their perceptions of self-risk for skin cancer ($F(1, 139) < 1$).

Behavioral Measures

Subjects were provided the opportunity to perform three behaviors related to skin cancer at the end of the experiment. They could send in postcards requesting information about skin cancer and/or a free sample of sunscreen. When requesting the sample of sunscreen, subjects could select the level of SPF that they would prefer (2, 6, 8, 15). Because these behavioral data are categorical, log-linear analyses were used to test hypotheses. A log-linear model is said to fit when the residual likelihood ratio χ^2 is nonsignificant, and any additions to the model do not significantly reduce the χ^2.

Requesting information and sunscreen. Analyses of both the information requests and the sunscreen requests showed no effect for how the information was framed. However, *subject sex* did have an effect on whether subjects sent in either of their cards. Fifty-one percent of the women in either framing condition requested more information about skin cancer prevention compared to 33% of the men in either condition. Although the model fitting no systematic effect of any of the variables on information requests reliably fits the data ($L^2(4) = 5.69$, ns), adding the factor *subject sex* to the model significantly improved the goodness of fit over the independence model ($\Delta L^2(1) = 4.70$, $p < .03$; $L^2(3) = .99$, ns). Looking at requests for free samples of sunscreen, more women (63%) requested sunscreen than men (37%). The model fitting no systematic effects on sunscreen requests did not reliably fit the data ($L^2(4) = 13.48$, $p < .01$). Adding the factor *subject sex* to the model significantly improved the goodness of fit over the independence model ($\Delta L^2(1) = 9.68$, $p < .001$) and produces a model that reliably fits the data ($L^2(3) = 3.80$, ns).

Level of sun protection factor. When requesting a sample of sunscreen, subjects were asked to indicate the level of SPF that they would prefer to receive. This behavior, as compared to the previous two, served as a more indirect measure of individuals' attitudes about skin cancer. SPF levels 2, 6, 8, and 15 were offered; the higher the level, the greater the protection from the sun's rays. In accordance with the American Cancer Society's recommendations, using sunscreen with SPF level 15 was suggested in the persuasive pamphlets. In analyzing subjects' SPF requests, selections of levels 2, 6, or 8 were collapsed into a low SPF category and compared to selections of 15. An examination of the requested SPF levels indicated that information framing influenced their selections. Collapsed across female and male subjects who had sent in a sunscreen request card, an SPF of 15 was requested by 71% of the subjects who read a positively framed pamphlet as compared to only 46% of the subjects who read a

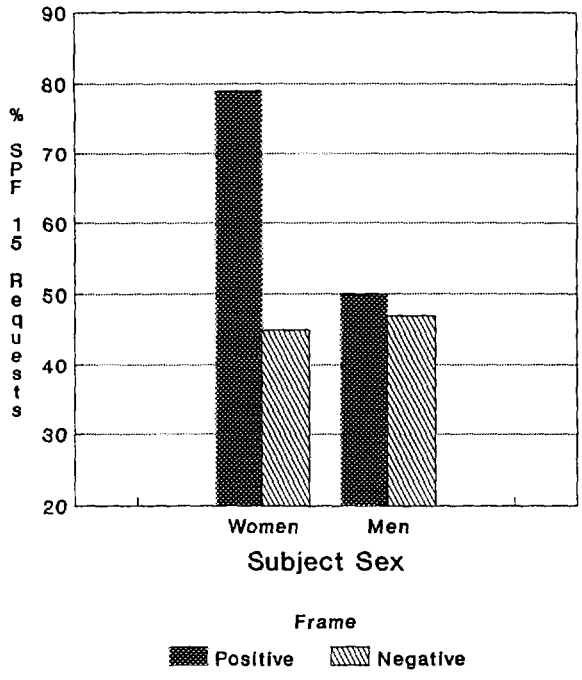

FIG. 2. Percentage of requests for sunscreen with an SPF of 15 as a function of information frame and subject sex.

negatively framed pamphlet. However, only subjects who sent in a sunscreen request card were able to make an SPF selection. Because *subject sex* had already been shown to have an effect on whether or not subjects sent in requests for free samples of sunscreen, female and male SPF selections were analyzed separately.

Figure 2 clearly demonstrates that men and women differed in their SPF selections across the two framing conditions. Consistent with our prediction that exposure to positively framed information would lead to more appropriate prevention related intentions, women in the positive frame condition were more likely to request an SPF of 15 than women in the negative frame condition ($\chi^2(1) = 5.50$, $p < .01$). Specifically, an SPF of 15 was requested by 79% of the women who read a positively framed pamphlet as compared to only 45% of the women who read a negatively framed pamphlet. Framing, however, did not produce a similar effect on men's SPF preferences. There was no effect of *information frame* on men's preferences as an SPF of 15 was requested by 50% of the men in the positive frame condition and 47% of the men in the negative frame condition ($\chi^2(1) < 1$, ns).

Discussion

The primary aim of Experiment 2 was to examine the prediction that positively framed messages would facilitate intentions to perform prevention-related behaviors. Consistent with our predictions, women who read the positively framed pamphlet were significantly more likely to request an appropriate SPF level of 15 than those who read a negatively framed pamphlet. Given the important role of SPF in any skin cancer prevention program, this request is a valuable measure of subjects' concerns about skin cancer.

As in Experiment 1, information frame had a differential effect on high and low involvement subjects. Positively framed information influenced women's behavioral selections of SPF, but had no influence on men's selections of SPF. Although the differential influence of framing on high and low involvement subjects is consistent with Maheswaran and Meyers-Levy (1990), their original framework cannot easily explain this specific pattern of data. They proposed that high issue involvement leads to systematic processing of the information, which favors negatively framed information, and that low issue involvement leads to heuristic processing, which favors positively framed information. The finding that positively framed information facilitates prevention-related behaviors among high-involvement subjects and, furthermore, that positively framed information did not influence the intentions of low-involvement subjects suggest that the conceptual framework of Maheswaran and Meyers-Levy (1990) needs to be modified.

High issue involvement may not always favor negatively framed information; instead, it may favor the information frame that corresponds best to the type of behavior being promoted. According to our framework, high-involvement subjects should show a negative framing effect for detection behaviors, but a positive framing effect for prevention behaviors. This configuration was supported by the significant result in Experiment 2, the pattern of the interaction in Experiment 1, and the findings reported by Maheswaran and Meyers-Levy (1990). In addition, it is consistent with the recent finding by Meyerowitz *et al.* (1991) that the effect of negatively framed information on BSE is limited to those subjects who believe BSE to be a high-risk behavior (i.e., if we assume that these are women who are more concerned about detecting breast cancer). Finally, the assertion that positively framed information can facilitate the health behavior of someone highly involved in an issue is consistent with the previously demonstrated advantage for positive framing in the domains of infant car restraints (e.g., Christophersen & Gyulay, 1981; Treiber, 1986) and surgery (e.g., McNeil *et al.*, 1982; Marteau, 1989).

Whether the differential effect of message framing on high-involvement subjects is mediated by systematic processing is unclear. No direct mea-

sures of processing were collected in these experiments. However, in Experiment 2, male and female subjects recalled an equal number of facts about skin cancer that were presented in the pamphlet, suggesting that high- and low-involvement subjects did not differ in their ultimate retention of the message. In addition, given the failure to find any effect of information frame on low-involvement subjects in either Experiment 2 or by Meyerowitz *et al.* (1991), it is unclear how to account for the finding reported by Maheswaran and Meyers-Levy (1990) that positively framed messages facilitate intentions to perform detection behaviors among low-involvement subjects.

Prior to these experiments, framing studies that have examined subjective risk have considered it in terms of a dispositional characteristic of the subject (Fagley & Miller, 1987, 1990; Meyerowitz *et al.*, 1991). In Experiment 2, subjects exposed to negatively framed information compared to those exposed to positively framed information reported heightened perceptions of risk for skin cancer for both themselves and others. This finding supports the prediction, derived from Prospect Theory, that exposure to negatively framed information increases perceived risk. Furthermore, it demonstrates that the absence of a negative framing effect on behavioral intentions was not due to a failure to manipulate this frame effectively.

Finally, subjects felt better after reading positively framed information than negatively framed information. Previous research has suggested that exposure to framed information does not alter subjects' affective state. However in those studies, framed information was generally presented in a simple list format (e.g., Meyerowitz & Chaiken, 1987). In the present experiment, subjects read a much more elaborate and involving presentation of framed information that consequently elicited relatively strong affective reactions.

GENERAL DISCUSSION

Presenting information in terms of gains or losses can shape how an individual thinks about a behavioral domain. For health-related behaviors, negatively framed information may lead people to feel concerned about their present health status. This concern may cause them to be more risk-seeking in their orientation toward a behavior, as suggested by Prospect Theory. When the behavior considered is itself seen as risky, but worthwhile, feeling at risk may facilitate performance of that behavior. It was this line of reasoning that led Meyerowitz and Chaiken (1987) to predict an advantage for negative framing on BSE.

Detection behaviors such as BSE are focused on the discovery of a health problem. This attention to illness is quite consonant with what is emphasized in a negatively framed message about a detection behavior. A negatively framed message about BSE, for example, focuses on the

risk of getting breast cancer and the danger of not finding a lump early. These potential costs are the reasons why this detection behavior is performed. Thus, it is not surprising that negatively framed information is persuasive in this context.

Positively framed information emphasizes the gains and advantages that can come from performing a behavior. It offers reassuring information that may make people feel risk averse in their choices, leading them to prefer a low-risk, gain-oriented option. Performing a preventive behavior like using sunscreen is consistent with this idea; preventive behaviors help maintain one's health and avoid the onset of a risky event. People may choose to perform prevention behaviors because of the benefits they offer, and these benefits are emphasized in a positively framed message. Furthermore, Prospect Theory predicts that people will choose the risk-averse option when presented with positively framed information. In the domain of prevention behaviors, choosing to perform the behavior is perceived as risk-averse. Choosing to perform a detection behavior, on the other hand, is a risky option. Therefore, we propose, in line with Prospect Theory, that it is the *match* between a message frame and the required health behavior that especially motivates behavior change.

The relative involvement of an individual with a particular domain, in this case a health domain, has been shown to moderate the effect of information frame on an individual's attitudes and behavior. The Maheswaran and Meyers-Levy (1990) original conception assumed that high and low issue involvement led to either systematic or heuristic processing of the framed information. Furthermore, they argued that these two types of processing would benefit negatively and positively framed information, respectively. The results of Experiment 2 suggest a modification of this original framework as high involvement revealed an advantage for positive framing. These results were even indirectly predicted by Maheswaran and Meyers-Levy (1990), who noted that increasing a subject's interest in ground beef might not necessarily lead to an advantage for negative framing. In the present experiments, the predicted relationship between prevention and detection behaviors and information frame was found for high-involvement subjects. Based on previous research, women were predicted to be more interested in and concerned with skin cancer compared to men. These experiments supported this expectation as women were found to be more concerned about skin cancer, believed it to be a more serious health problem, and perceived themselves to be at a greater risk for developing skin cancer.

It is presently unclear, though, how people without any involvement in an issue will respond to framed incidental information. The initial framework suggested that low involvement would lead to an advantage for positively framed information. However, the absence of any framing effect for low-involvement subjects in Experiment 2 and low-risk subjects

in Meyerowitz *et al.* (1991) challenges this assertion. Perhaps low issue involvement attenuates any effect of same consequences framing. Heuristic information processing may lead people to be insensitive to the characteristics of the message that enable positively and negatively framed information to have differential effects. Clearly, a more thorough accounting in this area is needed before any firm conclusions can be drawn concerning the influence of low issue involvement on message framing effects.

The proposal that positive framing facilitates performing prevention behaviors and negative framing encourages detection behaviors may have an impact on the way public health information is communicated. In general, health messages presented in the news and print media tend to be negatively framed, irrespective of the type of behavior promoted (i.e., if you don't do *X* something bad will happen to you). Our framework suggests that the framing of health information should be sensitive to the type of behavior promoted. A health campaign that encourages people to eat a healthy diet might be more effective if framed positively, but a campaign to encourage women to have an annual Pap test might be more effective if negatively framed. Within a specific health domain such as AIDS, positive frames could be used to encourage people to use condoms or avoid sharing needles, but negative frames could be used to motivate people to be tested for HIV. Although our findings suggest that the effectiveness of framing may be sensitive to the type of behavior performed, we do not believe that this is the only social dimension that might influence the relative effectiveness of positive and negative framing. Other aspects of the issue may determine the effectiveness of the frame. For example, Cioffi (1991) has suggested recently that whether a health behavior such as BSE is conceived as a health-detecting or illness-detecting activity will influence BSE performance as well as responses to self-diagnosis. Finally, there are many ways in which the domain of health behaviors can be divided, and the present distinction between prevention and detection behaviors should be considered heuristic. Although this division neatly organizes recent research findings, as future research is completed it may be shown to be too gross a distinction between behavior types. As there are clear differences between prevention and detection behaviors in general, there are probably equally important differences that can be drawn within each of these behavioral domains. A potentially important factor may be that prevention behaviors can differ in whether they need to be performed once (e.g., immunization) or performed repeatedly (e.g., condom use).

For the past 20 years, psychologists and other decision theorists have asserted that people respond differentially to an idea when it is presented in a positive or a negative frame. This paper does not question this assertion; rather it makes an initial attempt at specifying the precise in-

fluence of positively and negatively framed information on specific behavioral domains. Because positively and negatively framed information emphasize different aspects of alternatives, we suggest that the relationship between what is emphasized and the characteristics of the behavior being considered strongly shapes the effect of framed information on a person's final decision. Although the exact nature of this relationship has not been specified, this paper suggests that the relationship between social variables and message framing is an important research domain deserving further exploration.

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