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Expectations of Reassurance Influence the Nature of Fear-Stimulated Attitude Change

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A study was conducted to examine fear as a determinant of the extent of processing of the arguments presented in an involving persuasive communication. Under baseline (low fear) conditions, subjects differentiated between strong and weak argument quality messages. Under moderate fear conditions, however, the effect of fear on argument processing was dependent on subjects' expectations of the reassurance that would be provided by the message. When subjects' expectations about the efficacy of the solution to be presented in the message were clearly positive, subjects evaluated the solution favorably and equivalently, whether it was supported by strong or weak arguments. When expectations were unclear, however, subjects evaluated the solution based on the quality of the arguments in the message. These results held whether the induced fear was relevant or irrelevant to the topic of the persuasive communication.

Fear appeals are used in health campaigns, politics, and advertising under the assumption that, somehow, making message recipients afraid successfully persuades them to take the proposed action of stopping smoking, voting for a politician, or buying a product. Presumably, the move to action is mediated by recipients' more favorable attitudes toward that action.

The commonsense notion that fear or concern about an issue will lead to attitude change has been studied frequently in social psychology. Since

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the 1950s, several seemingly contradictory mechanisms have been proposed to explain when and why fear appeals are successful (Janis, 1967; Leventhal, 1970; Rogers, 1975, 1983).

The various models of fear and persuasion are alike in their emphasis on individuals' motivation to protect themselves from a given threat; however, they differ in the extent to which they propose that fear induces attitude change through thoughtful or nonthoughtful means. They also are not necessarily inconsistent with the notion that fear arousal may influence an individual's motivation or ability to process a persuasive message, but they do not provide explicit hypotheses as to how fear influences thought processes.

Janis' (1967) Drive Model, which is based on behaviorist principles of reinforcement and drive reduction, posits that the fear appeal induces not thought but rather a negative drive state that individuals are motivated to reduce. However, the need for drive reduction might have implications for the processing of persuasive messages: individuals might simply accept a proposal in order to reduce their fear or they might avoid processing a fear-inducing message (Janis, 1967). Drive Theory proposed that defensive avoidance would occur when fear was very high, and that acceptance would occur when fear was more moderate. Although it did not make explicit predictions about how argument processing was related to acceptance of a message's recommendations, Drive Theory is important in that it introduced the idea that motivation for reassurance can be a significant determinant of reactions to fear messages.

Other theories of fear appeals have focused less on fear reduction and more on individuals' attempts to reduce the actual danger that they are in. Protection Motivation Theory (Rogers, 1975, 1983) presents the strongest version of this "instrumental" position. It emphasizes that fear induces primarily a motivation to protect the self (as opposed to a motivation to reduce a drive state), and holds that fear influences a person's cognitive appraisal of some threat.

For example, compared to individuals who are not exposed to a fear-inducing message, those who are exposed to a moderate fear-inducing message think that the threat is worse and more likely to affect them. Rogers and Mewborn (1976) demonstrated that increasing the perceived threat led to greater persuasion when the message included explicit statements that the proposed solution to the threat would be effective, and led to less persuasion when the message stated that the proposed solution would not be effective. These results, although informative about the interaction between the stated effectiveness of the proposed solution and the degree of perceived threat, do not provide data about the extent to which subjects processed the persuasive message. It is possible that subjects who were experiencing greater fear scrutinized the persuasive message and based their attitudes on thoughtful consideration of the effec-

tiveness of the solution. On the other hand, it is also possible that the statement of effectiveness served as a simple reassurance cue.

Between these two theoretical extremes lies Parallel Response Theory (Leventhal, 1970), which attempts to integrate the instrumental, cognitive responses to a fear appeal with the motivational, drive-oriented responses. This theory proposes that an individual presented with a fear-inducing message engages in the parallel processes of trying to reduce his/her fear and cope with the presented threat. Its primary drawback is its inability to specify conditions that lead to each of the processes (see Beck & Frankel, 1981).

In the current paper, we look both to past theories of fear appeals and to more recent general theories of attitude change (Petty & Cacioppo, 1986; Chaiken, Liberman, & Eagly, 1989) to examine the idea that fear can lead to persuasion through both thoughtful and nonthoughtful means. More explicitly, we propose, consistent with Rogers' protection motivation theory (Rogers, 1975, 1983), that fear elicits in an individual a motivation to protect the self (see Rogers, 1983). We argue that individuals will engage in thoughtful analysis of a persuasive message when they believe that such an analysis might enable them to better protect themselves. However, if they have been reassured already by other means, and believe that thoughtful analysis might lead them to find information that would threaten that reassurance, they will avoid processing the message. This hypothesis is consistent with previous notions that frightened individuals sometimes defensively avoid fearful stimuli (Janis, 1967; Nunnally & Bobren, 1959).

Our hypotheses are consistent with general theories of persuasion that focus on the idea that in some situations attitude change occurs as a result of thinking about the merits of some proposal that is presented, but in other circumstances attitude change comes about because people rely on simple decision rules, heuristics, or cues (see Petty & Cacioppo, 1986; Chaiken et al., 1989). Individuals are hypothesized to engage in careful scrutiny of message arguments ("central route" or "systematic" processing) when they are both motivated and able to do so, and to rely on less thoughtful means of evaluating the message ("peripheral route" or "heuristic" processing) when their motivation and/or ability are low.

According to the Elaboration Likelihood Model of persuasion (Petty & Cacioppo, 1986), one way in which a variable can affect persuasion is by influencing the extent or direction of argument processing. It is reasonable to expect that the introduction of a potential threat and the subsequent arousal of protection motivation (Rogers, 1975, 1983) might be expected to increase individuals' motivation to find an efficacious response to the threat.

It is unclear, however, exactly how this motivation that ". . . arouses, sustains, and directs activity" related to protecting the self from danger

(Rogers, 1983) would influence message processing. If protection motivation stimulates individuals to find a truly efficacious solution, it might lead to greater scrutiny of message arguments than would be the case if protection motivation had not been aroused. On the other hand, if subjects are motivated by fear simply to be reassured, it might lead to reduced scrutiny of arguments that might reveal that no effective response to the threat was likely. It might also lead to biased processing, or susceptibility to a reassurance cue, such that individuals motivated to be reassured will be relatively favorable toward even weak arguments as long as they were presented by a credible source as providing an effective solution to the threat.

Following Petty, Wells, & Brock (1976), a number of studies have assessed the extent to which subjects process the arguments presented in a persuasive message by varying the quality of those arguments (e.g., Petty, Harkins, & Williams, 1980; Worth & Mackie, 1989). Subjects who are focused on the arguments in the message would tend to express more favorable attitudes when the message contains strong as opposed to weak arguments. In contrast, subjects who do not process the content of the message would tend to be equally favorable toward the solution to the threat proposed in the message, regardless of argument quality.

Two studies by Jepson and Chaiken (1990) provide results consistent with the idea that fearful subjects are less likely than nonfearful subjects to thoughtfully process a message relevant to their fear. In an initial study, these authors found that subjects' level of chronic fear of cancer was negatively correlated with the number of logical errors the subjects found in a message that argued in favor of regular cancer checkups for young adults. In a second study, manipulations of argument quality and source credibility were attempted in order to assess the extent of message processing versus cue utilization, but these manipulations were unsuccessful.

Although Jepson and Chaiken's (1990) studies provide some evidence that fear can sometimes be associated with reduced message processing, it is important to note that their studies examined the effect of chronic as opposed to situationally induced fear. As Jepson and Chaiken note, chronic fear is unlike situation-specific fear in that the former may lead individuals to develop a characteristic style of processing communications related to the frightening issue. The message-processing strategy employed in the presence of a new threat may be different than the strategy for dealing with a familiar one. In addition, chronic fear may be confounded with other individual differences such as knowledge or interest in the threat. The current research examines the effects of manipulated fear on message processing and persuasion.

One situation in which fear would be expected to lead to less thoughtful analysis of a persuasive message is when such analysis might counter any reassurance that has already been achieved with respect to the threat at

hand. The current study emphasizes the importance of fearful individuals' expectations of what the message will tell them as a determinant of the extent to which they critically evaluate message content. For example, what if fearful individuals were presented with a persuasive message that did not reassure them at the outset, but rather led them to believe that they *might* find reassurance somewhere in the message? In this case, fearful subjects might be motivated to attend to message arguments that might satisfy their goal of reassurance. On the other hand, if the message provided clear reassurance at the beginning, we would expect fearful individuals to avoid scrutiny of message arguments. If reassurance has already been achieved, message processing might undermine this assurance.

To examine the idea that fear can be associated with reduced message processing in some situations but not others, we induced either low or moderate fear in our college student participants, and then presented them with a persuasive message in favor of raising tuition to support a new campus crime prevention program (that is, a potential solution to the threat of crime on their campus). We varied two aspects of the persuasive appeal: (1) whether an expert believed the program's success was assured or questionable (that is, whether subjects' expectations of the efficacy of the proposed program were clear or unclear prior to message exposure), and (2) whether the arguments presented in support of the program were strong or weak.

Because the message was directly relevant to the college student participants and advocated an increase in tuition at their university, we expected subjects to base their attitude toward the crime prevention program on the quality of message arguments when fear was low (regardless of type of expectation; Petty & Cacioppo, 1979) and also when fear was moderate and the expectation of the program's efficacy was unclear.[1] When the expectation of efficacy is unclear, people need to examine the message itself in order to seek reassurance.

In the case of moderate fear and clear expectations of the program's efficacy, however, we expected subjects to base their attitudes on the expert's opinion of the program's success rather than on careful scrutiny of the persuasive arguments. This is because in this condition the expert's opinion would serve as reassurance, and subjects would not need to examine the message in order to find reassurance. They might even be motivated to avoid processing the message because, if they did examine

[1] Although fear is low in the low fear conditions, the high personal relevance of the message itself which advocated raising tuition to fund a crime watch program at the students' own university should induce message processing. That is, the low fear conditions are similar to the high personal relevance conditions in prior research (e.g., Leippe & Elkin, 1987; Petty & Cacioppo, 1979). Against this baseline of message processing, fear was expected to reduce message argument scrutiny only when an assurance cue was present prior to message exposure.

it, they might find information that would contradict the expert's reassuring statement.

A secondary goal of this research was to explore the question of whether the predicted pattern of attitude change would be modified by the relevance of the fear to the specific topic of the persuasive message. Research in self-affirmation (see Steele, 1988) is especially relevant to this question, because it emphasizes a general motivation to maintain and protect the self against threat. Self-affirmation theory suggests that if the integrity of the self is threatened in one domain, it can be restored by reassurance in another domain.

In the current experiment, subjects were induced to feel afraid about one of two unrelated issues, and then were provided with a persuasive message about only one of those issues. Unlike previous studies that examined irrelevant fear induced by an expectation of a blood test or injection of a drug (Lundy, Simonson, & Landers, 1967; Sigall & Helmreich, 1969; Hendrick & Borden, 1970), and did not examine relevant and irrelevant fear together, the current study used two issues with a similar underlying theme. That is, subjects were presented with a fear inducing communication about either crime or illness afflicting students on their college campus.

Both the crime and illness inductions challenged the students' feelings of personal safety, and both challenged their wisdom in choosing to attend a campus that posed serious safety risks. Thus, although crime and illness are distinct in the specific threat posed by each, it is possible that the underlying themes of personal safety and self-esteem maintenance would allow for protection motivation aroused by one issue to be satisfied by reassurance on the other issue. If this is the case, there should be no difference in the pattern of persuasion as a function of the specific relevance of the fear to the message. On the other hand, if protection motivation is satisfied only by reassurance about the specific threat, the persuasion effects outlined above should be limited to the condition in which the issue of the fear induction is the same as the issue of the persuasive message.

In summary, the full design of the study was a 2 (Magnitude of Fear: low or moderate) × 2 (Relevance of Fear to the Persuasive Message: irrelevant or relevant) × 2 (Expectation of the Efficacy of the Proposed Crime Prevention Program: unclear or clear) × 2 (Argument Quality: weak or strong) between-subjects factorial experiment.

METHOD

Subjects

A total of 367 undergraduate students in introductory psychology classes at Ohio State University participated in the experiment in exchange for course credit.

Procedure

Subjects participated in the experiment in groups of two to six. When they arrived at the laboratory, they were informed that they were to participate in a study whose ostensible goal was to determine whether the effectiveness of different types of media presentations (e.g., newspaper, radio, television) was dependent on the nature of the issue reported in the presentation.

Subjects were further instructed that they had been randomly assigned to first listen to a radio broadcast and then to read a newspaper article, that the two presentations may or may not concern similar topics, and that they should try to evaluate each presentation individually. The radio broadcast (which presented the manipulations of relevance of fear to the persuasive message and magnitude of fear) sometimes discussed crime on campus and sometimes discussed illness in students. The newspaper article was the persuasive message and presented the manipulations of argument quality and expectation of the efficacy of the proposed crime prevention program.

Following the initial instructions, subjects listened to a broadcast on individual cassette tape players. They then read the newspaper article, and completed a questionnaire designed to assess their attitudes toward the proposed crimewatch program presented in the article. In addition to reporting their attitudes in the questionnaire, subjects responded to several manipulation check items and other ancillary measures. When all subjects had completed the questionnaire, they were debriefed thoroughly and then dismissed.

Materials

Moderate and low fear radio broadcasts about crime and illness. Four "radio broadcasts" were designed as manipulations of magnitude and relevance of fear, and were presented individually to participants on audiocassette prior to their exposure to the persuasive message. The broadcasts presented either a worrisome (moderate fear) or innocuous (low fear) discussion of crime on the Ohio State campus (relevant broadcast) or an illness that had been afflicting OSU students (irrelevant broadcast).

The broadcasts consisted of interviews with an Ohio State police officer (in the relevant broadcast) or a doctor at University Hospital (in the irrelevant broadcast) and with two victims of crime or illness. The low fear broadcasts were analogous for both topics: crime or illness was presented as being neither very serious nor likely to affect many students. In comparison, the moderate fear broadcasts presented crime or illness as being a highly serious problem that was likely to affect many students.

Clear and unclear assurance: Introduction to newspaper articles. Each persuasive message (article) was introduced by a short paragraph that described the author and his opinions. The author was described as having carefully researched the issue of crime prevention, and therefore was highly credible. In the clear expectation of efficacy introduction, the author stated that he considered the program highly likely to successfully reduce crime on campus. In the unclear expectation of success broadcast, the author indicated that the program's likelihood of success was questionable.

Weak and strong persuasive messages. Two versions of a persuasive message were presented in the form of articles from the student newspaper. The articles advocated the institution of a Crimewatch program on the students' campus. The program, which would ostensibly protect students against crime, was said to require a $100 quarterly increase in their tuition. The weak argument message contained five unconvincing, specious arguments in favor of the crimewatch program. An example of such an argument is that "Campus buses run infrequently at night, and require students to wait alone at the bus-stop for a long time. Members of the crimewatch staff would wait at all the bus-stops, so that students waiting for buses will have someone to talk to while they wait." Evaluation of the crimewatch program based on the weak arguments presented would lead subjects to believe that the program was likely to be unsuccessful in reducing crime.

In contrast, the strong argument message contained five cogent, convincing arguments in favor of the efficacy of the program. One such example is "Campus buses run infrequently at night, and so require students to wait alone at the bus-stop for a long time. Members of the crimewatch staff would patrol bus-stops to make them safer for patrons at night."[2]

RESULTS

Manipulation Checks

Fear. Subjects were asked to rate on 9-point scales (anchored at 1 = not at all and 9 = extremely) the extent to which various adjectives described the way they felt at that moment. The adjectives were presented in the questionnaire in one of two random orders. Of these adjectives, ratings of six that had been validated in previous research as measures of fear (tense, anxious, nervous, nauseated, frightened, and uncomfortable) were averaged to create a composite measure of fear (see Mewborn & Rogers, 1979, for validation of this measure). This composite measure was then analyzed in a 2 (Low/Moderate Fear) × 2 (Relevant/Irrelevant Broadcast) × 2 (Clear/Unclear Expectation) × 2 (Weak/Strong Argument Quality) × 2 (Male/Female) × 2 (A or B Order of Adjectives) completely between-subjects ANOVA. This analysis yielded the expected significant effect of Fear, $F(1, 335) = 7.49$, $p < .007$. Subjects expressed greater fear in the moderate ($M = 3.22$, $SD = 1.30$) than in the low ($M = 2.83$, $SD = 1.19$) Fear conditions.[3]

[2] Each of the manipulations was pilot tested on separate groups of subjects, and each pilot test was run as a between-subjects design to minimize experimenter demand. For the fear broadcasts, each pilot subject listened to a broadcast and then rated the degree to which she/he was tense, frightened, nervous, uncomfortable, anxious, and nauseous. These measures were combined to form an index of fear, and analyzed in a 2 (Low or Moderate Fear) × 2 (Irrelevant or Relevant Broadcast) ANOVA. Subjects who listened to the moderate fear broadcasts felt greater fear ($M = 2.83$) than subjects who listened to the low fear broadcasts ($M = 2.21$), $F(1, 40) = 2.91$, $p < .05$, one-tailed. The nonsignificant Fear × Relevance interaction, $F(1, 40) = .16$, $p < .69$, indicates that there was no difference in the amount of fear induced by the crime as opposed to the illness broadcasts. A separate group of pilot subjects rated the likelihood that the article (i.e., the persuasive message) would contain effective suggestions for how to reduce campus crime. Subjects expected an article following the Clear Expectation statement ($M = 5.56$) to be more likely than an article following the Unclear Expectation statement ($M = 3.60$) to propose effective methods of crime reduction, $F(1, 17) = 6.61$, $p < .02$. Last, pilot subjects rated the persuasive messages for how trustworthy, convincing, and strong they were. Subjects who read the strong argument quality message evaluated the message as more trustworthy, $F(1, 38) = 5.93$, $p < .02$ (Ms = 5.81 and 4.26 for strong and weak argument quality messages, respectively); more convincing, $F(1, 38) = 5.56$, $p < .02$ (Ms = 6.38 and 4.84); and stronger, $F(1, 38) = 9.26$, $p < .004$ (Ms = 6.52 and 4.47) than subjects who read the weak message.

[3] The only other significant effects were an Argument Quality × Sex × Order of Adjectives interaction, $F(1, 303) = 4.05$, $p < .05$, and an Expectation × Argument Quality × Sex × Order of Adjectives interaction, $F(1, 303) = 3.77$, $p < .05$. Since neither of these effects involved the manipulated fear variable and appear meaningless, they will not be discussed further.

Expectations of reassurance. Two measures were included to assess the degree of assurance induced by the expectation manipulation. One measure asked directly whether subjects expected the article's suggestions to be reassuring. The other asked subjects how concerned they were about the issue discussed in the radio broadcast. If subjects expected the program to be effective, they should feel more assured and less concerned. These measures, along with all subsequent measures, were then analyzed in a 2 (Magnitude of Fear: moderate or low) × 2 (Relevance of Fear: relevant or irrelevant) × 2 (Expectation of Program Efficacy: clear or unclear) × 2 (Argument Quality: strong or weak) × 2 (Sex: male or female) between-subjects ANOVA. No effects were obtained on the measure that asked subjects how reassuring they expected the article to be ($ps > .1$). A main effect of Expectation condition did emerge, however, for the measure of concern, $F(1, 335) = 5.08$, $p < .02$. Subjects in the Unclear Expectations condition ($M = 6.29$, $SD = 2.20$) expressed greater concern than subjects in the Clear Expectations condition ($M = 5.69$, $SD = 2.38$).[4]

In retrospect, the weak support for the expectation manipulation on the measure of reassurance is not surprising, given that subjects answered the manipulation check questions long after the actual manipulation. In the meantime they read the persuasive message, which might contribute to their retrospective assessment of their expectations. As noted above, however, pretest subjects expected an article following the Clear Expectation introduction to be more likely than an article following the Unclear Expectation introduction to contain effective crime-reduction proposals.

Argument quality. Subjects reported the extent to which they thought the newspaper article was convincing and trustworthy on 9-point scales (1 = not at all and 9 = extremely). Compared to those who received the Weak argument message, those who received the Strong argument message reported the article to be more convincing, $F(1, 335) = 37.31$, $p < .0001$ (Ms = 4.91 and 6.14, SDs = 2.23 and 1.73) and more trustworthy, $F(1, 335) = 14.19$, $p < .0002$ (Ms = 5.97 and 6.63, SDs = 1.72 and 1.42).

[4] There were several other effects for the measure of concern. Not surprisingly, compared to subjects in the Low Fear conditions, subjects in the Moderate Fear conditions expressed more concern, $F(1, 335) = 13.71$, $p < .0002$. In addition, females were more concerned than males, $F(1, 335) = 5.78$, $p < .02$, and subjects who listened to the broadcast about crime expressed greater concern than those who listened to the broadcast about illness, $F(1, 335) = 46.47$, $p < .0001$. A Fear × Broadcast Relevance interaction, $F(1, 335) = 7.71$, $p < .006$, indicated that although the broadcast about crime generally induced more concern than the broadcast about illness, this was more the case for subjects who listened to low fear-inducing broadcasts. Finally, a Fear × Expectation × Argument Strength interaction suggested that unclear expectations were especially likely to lead to more concern than clear expectations when fear was moderate and the arguments were strong and when fear was low and the arguments were weak.

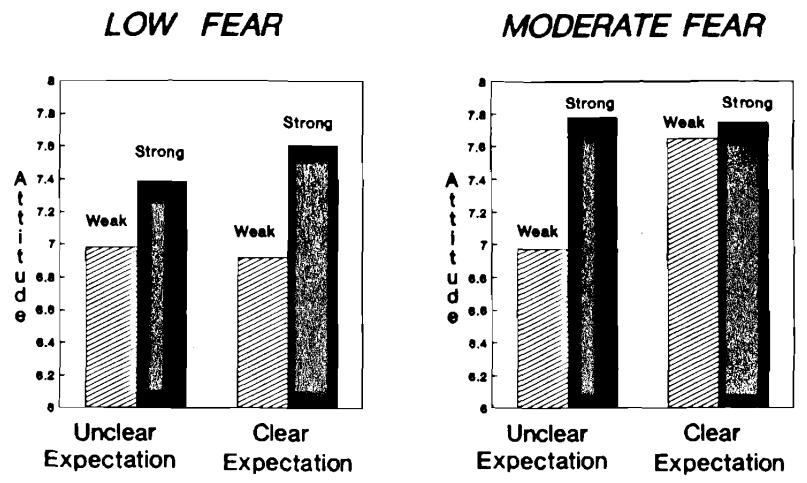

FIG. 1. Attitude toward the crimewatch program, as a function of fear, expectation of program efficacy, and argument quality. Low fear conditions are presented in the left panel, and moderate fear conditions in the right panel.

Attitude

Subjects' attitudes toward the Crimewatch program were assessed by four 9-point semantic differential items (bad–good, harmless–harmful, wise–unwise, and negative–positive). Ratings on these items, which were highly intercorrelated (rs ranged from .48 to .85, coefficient alpha = .84), were averaged to create a composite measure of attitude for each subject. Analysis of the composite measure yielded main effects of Fear, $F(1, 335) = 3.78$, $p < .05$, Broadcast Relevance, $F(1, 335) = 4.53$, $p < .03$, Argument Quality, $F(1, 335) = 13.98$, $p < .0002$, and Sex, $F(1, 335) = 27.79$, $p < .0001$. That is, attitudes toward the Crimewatch program were more favorable when subjects had listened to a moderate rather than low fear broadcast (Ms = 7.54 and 7.21, SDs = 1.49 and 1.43), had listened to a broadcast about crime rather than illness (Ms = 7.53 and 7.22, SDs = 1.44 and 1.49) had read strong rather than weak arguments (Ms = 7.64 and 7.12, SDs = 1.28 and 1.60) and were female rather than male (Ms = 7.73 and 7.01, SDs = 1.28 and 1.56).

Separate analyses for Moderate and Low Fear conditions were conducted to assess predictions regarding the effects of fear and expectation of program efficacy on the manner by which subjects' attitude change would occur. More specifically, subjects in the Low Fear (baseline) conditions showed attitudes based on the quality of the message's arguments, regardless of expectations. As can be seen in the left panel of Fig. 1, subjects in the Low Fear Condition were more persuaded by strong than by weak arguments to the same extent whether their expectation of the

Crimewatch program's efficacy was clear or unclear, $F(1, 161) = 8.18$, $p < .005$.

The right panel of Fig. 1, however, depicts a different pattern of results for subjects who had listened to moderate fear-inducing broadcasts. A significant Expectation × Argument Quality interaction, $F(1, 174) = 4.57$, $p < .03$, indicates that the attitudes of subjects in the Moderate Fear conditions were based on the quality of message arguments only when their expectation of the success of the program was unclear. That is, when their expectation was unclear, they were more persuaded by strong arguments ($M = 7.78$, $SD = 1.41$) than by weak ones ($M = 6.97$, $SD = 1.75$). When they were afraid and led to expect a successful program, on the other hand, they accepted the crimewatch program regardless of the quality of the arguments presented (Ms = 7.65 and 7.75, SDs = 1.47 and 1.16). The three-way interaction of Fear × Argument Quality × Expectation implied by this pattern was marginally significant, $F(1, 335) = 3.29$, $p < .07$.

Another theoretically important interaction is the four-way Fear × Broadcast Relevance × Expectation × Argument Quality interaction. That this interaction proved nonsignificant, $F(1, 335) = 0.01$, $p < .99$, suggests that the Fear × Expectation × Argument Quality interaction described above was the same regardless of whether the broadcast presented to subjects was about the same issue as the persuasive message, or about a different issue.

Also, despite interactions with sex on other measures, the four-way Fear × Expectation × Argument Quality × Sex interaction for attitude was nonsignificant, $F(1, 335) = 0.14$, $p < .70$. Male and female subjects demonstrated the same pattern of attitudinal responses.

DISCUSSION

The attitude data support the major hypotheses of the current study. In particular, the data are consistent with the notion that fear arousal, in combination with expectations of effectiveness, can influence individuals' motivation to process persuasive messages. In the present research, subjects not experiencing fear evaluated the high relevance crime prevention program based on the quality of arguments presented in its support. When fear was aroused, however, subjects' expectations of what they would find in the persuasive appeal determined the extent to which they based their evaluation on the arguments in the message.

If their expectation of reassurance was unclear, subjects engaged in the effortful processing required to evaluate a potential solution to the problem of crime on campus. Such effortful processing is indicated by the differential evaluation of the crimewatch program as a function of whether it was supported by weak or strong arguments. In this unclear expectation condition, the introduction to the message did not provide any reassurance that the threat of crime on campus would be successfully reduced. It did suggest, however, that the program proposed in the persuasive appeal *might* be successful. In order to find any reassurance to their aroused concern, subjects in the moderate fear condition would have to evaluate the program for themselves.

If subjects' expectations of the program's efficacy were clear, however, subjects in a moderate fear state were less likely to evaluate the program based on message arguments. In this case, they seemed to rely on the cue provided by the introduction to the message that indicated that the solution presented in the message was likely to be highly successful. Their evaluation of the program was not dependent on the quality of arguments supporting the institution of the Crimewatch program. It could be argued that these subjects avoided careful scrutiny of the message, perhaps because scrutiny might lead to a discovery that the program really might not be successful. Subjects in a fearful state would be motivated to avoid such a discovery, because it would threaten whatever security they found in the reassuring introduction to the message.

The current research has several implications for understanding the role of fear in persuasion. First, it is consistent with the idea of a "protection motivation" aroused by fear-inducing appeals (Rogers, 1983). Further, it suggests that fear and the subsequent protection motivation do not simply influence subjects' ability to process the message, at least at the moderate levels of fear studied in the current research. If fear interfered with subjects' ability to process the message, all subjects exposed to the moderate fear broadcast would have failed to carefully consider the message. That those subjects who were initially unsure about the efficacy of the proposed solution *did* process the message as carefully as low fear subjects preempts a conclusion that fear simply diminishes ability to process. Of course, levels of fear much higher than those likely to be employed in typical persuasive communications would likely disrupt message processing.

The current research does not suggest that protection motivation is a motivation to engage in or avoid cognitive activity. Rather, subjects appear to be motivated to be reassured, and they will engage in or avoid cognitive activity based on which strategy best allows them to satisfy this goal. This interpretation is best supported by research that allows subjects to gain reassurance by engaging in processing in some but not other situations. This goal was operationalized in the current study through the use of a persuasive message (i.e., arguing for the institution of a crime prevention program) combined with an introduction that provided either a clear reassurance or did not.

Consistent with prior analyses (Rogers, 1983), it has been argued in this paper that fear, at least at the moderate levels induced in the current study, induces in subjects a motivation to be reassured. The idea of what may serve as reassurance, however, remains unclear. It is possible that

it is reassuring to adopt any self-affirming or enhancing position. This hypothesis is consistent with self-affirmation theory (Steele, 1988): any means by which subjects could assert their beliefs or values should be effective in reducing the distress aroused by the fear message. One might find reassurance, then, in a solution to the original threat (as shown in the current study and past fear appeals research), in a solution to an irrelevant threat (as shown in the current study), and possibly even in an affirmation of an irrelevant attitude (cf., Baron, Burgess, Kao, & Logan, 1989). Future research needs to address the influence of fear on the processing of messages that on the surface appear to have no implications for reassurance about the specific threat present in the fear induction.

Implications of the Current Research

The earliest conceptualizations of fear appeals approached the effect of fear on persuasion in a relatively one-dimensional manner. They asked if increases in fear caused increases in persuasion. The current research, on the other hand, employs a more multidimensional approach: it suggests that fear can influence persuasion, but in different ways under different circumstances. The results of this study suggest that, after fear is aroused, the nature of individuals' evaluation of potential solutions to a threat can be determined by the confidence with which the solutions are presented. If a solution is presented as likely to work, it is more likely to be evaluated via the peripheral route than if its effectiveness is presented as unknown.

These results present significant, and perhaps unfortunate, implications for "real-life" situations in which fear appeals are utilized. In terms of political campaigns, for example, a (credible) politician would not necessarily need to present a flawless case for a pet project if he or she is able to arouse fear before presenting the project, and then presents the project as a surefire success.

On the other hand, thinking can be facilitated if a project is presented as a possible success. An expectation that "it may very well work, but we don't know for sure," after fear has been aroused in some domain fosters critical thinking in the audience. Such thought might facilitate persuasion if the evidence in support of the project is convincing or constructive criticism if it is not.

CONCLUSION

In conclusion, the current research supports the idea that a more complete understanding of the effectiveness of fear appeals can be achieved by a broadening of conceptualization and research methods. Specifically, analyses of fear appeals might benefit from the introduction of paradigms used in more general research on attitude change processes that consider the degree to which persuasion is a result of scrutiny of the arguments in a message versus simple cues. Such research can help to determine

whether the past success of fear appeals can be attributed to argument processing or the use of reassurance cues.

Further, this research supports and broadens the construct of protection motivation (Rogers, 1975, 1983) as a mediator of the effect of fear on attitude change. It may be that protection motivation is even a more general and complex phenomenon than it has been considered previously. The current results suggest that individuals in whom protection motivation is aroused are responsive to environmental cues that indicate the most effective means of finding reassurance. These individuals will engage in analysis of the persuasive message if they believe that their analysis might enable them to better protect themselves, but will avoid such an analysis if reassurance is possible through simpler means (e.g., rely on an expert's assurance of success). Finally, it appears that protection motivation is not highly issue-specific, but rather can be satisfied by reassurance in a domain other than that of the initial fear. Future experimentation in this area should widen the range of potential conclusions by examining whether fear that is completely irrelevant to the object of the persuasive message or has no self-affirming implications can influence attitude change.

REFERENCES

Baron, R. S., Burgess, M. L., Kao, C. F., & Logan, H. (1989). *Fear and superficial social processing.* Unpublished manuscript, University of Iowa.

Beck, K. H., & Frankel, A. (1981). A conceptualization of threat communications and protective health behavior. *Social Psychology Quarterly,* **44,** 204–207.

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman, & J. A. Bargh (Eds.), *Unintended thought: Limits of awareness, intention, and control.* New York: Guilford.

Hendrick, C., & Borden, R. (1970). Effects of extraneous fear arousal and birth order on attitude change. *Psychonomic Science,* **18,** 225–226.

Janis, I. L. (1967). Effects of fear arousal on attitude change: Recent developments in theory and experimental research. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 3). New York: Academic Press.

Jepson, C., & Chaiken, S. (1990). Chronic issue-specific fear inhibits systematic processing of persuasive communications. In M. Booth-Butterfield (Ed.), *Communication, cognition, and anxiety.* [Special issue]. *Journal of Social Behavior and Personality,* **5,** 61–84.

Leippe, M., & Elkin, R. (1987). When motives clash: Issue involvement and response involvement as determinants of persuasion. *Journal of Personality and Social Psychology,* **52,** 269–278.

Leventhal, H. (1970). Findings and theory in the study of fear communications. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 5), New York: Academic Press.

Lundy, R. M., Simonson, N. R., & Landers, A. D. (1967). Conformability, persuasability, and irrelevant fear. *Journal of Communication,* **27,** 39–54.

Mewborn, C. R., & Rogers, R. W. (1979). Effects of threatening and reassuring components of fear appeals on physiological and verbal measures of emotion and attitudes. *Journal of Experimental Social Psychology,* **15,** 242–253.

Nunnally, J. C., & Bobren, H. M. (1959). Variables governing the willingness to receive communications on mental health. *Journal of Personality,* **27,** 38–46.

Petty, R. E., & Cacioppo, J. T. (1979). Issue involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology,* **37,** 1915–1926.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19). New York: Academic Press.

Petty, R. E., Harkins, S. G., & Williams, K. D. (1980). The effects of group diffusion of cognitive efforts on attitudes: An information-processing view. *Journal of Personality and Social Psychology,* **38,** 81–92.

Petty, R. E., Wells, G. L., & Brock, T. C. (1976). Distraction can enhance or reduce yielding to propaganda: Thought disruption versus effort justification. *Journal of Personality and Social Psychology,* **34,** 874–884.

Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *Journal of Psychology,* **91,** 93–114.

Rogers, R. W. (1983). Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In J. T. Cacioppo & R. E. Petty (Eds.), *Social psychophysiology: A sourcebook.* New York: Guilford.

Rogers, R. W., & Mewborn, C. R. (1976). Fear appeals and attitude change: Effects of a threat's noxiousness, probability of occurrence, and the efficacy of coping responses. *Journal of Personality and Social Psychology,* **34,** 54–61.

Sigall, H., & Helmreich, R. (1969). Opinion change as a function of stress and communicator credibility. *Journal of Experimental Social Psychology,* **5,** 70–78.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21). New York: Academic Press.

Worth, L. T., & Mackie, D. M. (1987). Cognitive mediation of positive affect in persuasion. *Social Cognition,* **5,** 76–94.