

FIFTEEN YEARS OF FEAR AROUSAL: RESEARCH ON THREAT APPEALS: 1953-1968

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Research on threat appeals has yielded conflicting findings concerning the relative effectiveness of high threat versus low threat in persuasion. Studies reviewed here have investigated the effects on persuasion of variables in each of five areas: (a) the nature of the recommendations, (b) personality characteristics of the recipients, (c) source credibility, (d) learning of the message content, and (e) the interest value of fear. Few variables have been found which consistently interact with fear. One conceptual consideration and four methodological considerations are suggested as possible sources of the inconsistency in the findings. A postulated curvilinear relationship between fear level and persuasion may help reconcile some of the conflicting findings on high-versus low-threat appeals.

The use of threat, or fear arousal, is quite common in many types of persuasive attempts. The procedure generally used is either to associate an undesirable practice (e.g., smoking) with negative consequences (e.g., lung cancer), or to associate a desirable practice (e.g., brushing teeth) with the avoidance of negative consequences (e.g., cavities). Then, after making the association, recommendations are offered for attitude change or for action to take to avoid the consequences. Typically the projected consequence of not conforming to the communication's recommendations is spelled out in vivid, threatening detail. The assumption is that the higher the level of fear aroused, the greater will be the persuasiveness of the communication.

Areas of persuasion which use such a "scare" technique might include public-opinion campaigns (e.g., safe-driving, health, and anti-smoking campaigns), propaganda efforts (e.g., atrocities committed by the enemy in war), advertising (e.g., mouthwash, toothpaste, and deodorant advertisements), and preaching (e.g., hellfire and damnation for sinners).

However, despite the widespread use of threat appeals in applied settings, the tech-

nique has only recently come under much rigorous experimental investigation. Table 1 shows 27 studies of fear-arousing appeals, published since 1953, which have involved experimental manipulation of the level of threat in a persuasive communication. Of these 27 studies, 17 (63% of the published experimental research in the area in the last 15 years) have been published within the last 4 years. Table 1 also indicates the levels of threat used in each study, which will be discussed later.

Reviews of the threat-appeal literature (see Janis, 1967, 1968a; Janis & Leventhal, 1968; Leventhal, 1965, 1967; McGuire, 1966, 1968; Miller, 1963) have revealed considerable inconsistency among the findings regarding the relative effectiveness of high threat versus low threat in persuasive messages. The first section of this paper indicates some of the variables which research since 1953 has indicated may affect the persuasiveness of threat appeals (see Hovland, Janis, & Kelley, 1953, for a review of the relevant research prior to 1953). In the second section are suggested some possible sources of the inconsistency among the findings on high threat versus low threat. Finally, the present state of theorizing and knowledge concerning fear-arousing appeals is summarized.

High Threat versus Low Threat

The "common-sense" approach used in many applied settings of persuasion suggests

¹The author is indebted to Richard Heslin and W. C. Redding for their valuable comments on earlier versions of this manuscript.

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that the more you scare someone the more likely he will be to accept your recommendations for avoiding the portrayed threat. However, Berelson and Steiner (1964) stated, as one of the scientifically substantiated facts of human behavior, that "strong appeals to fear, by arousing too much tension in the audience, are less effective in persuasion than minimal appeals [p. 552]." This conclusion may also be found in many introductory psychology textbooks (e.g., Hilgard, 1962; Morgan & King, 1966) and in some social psychology textbooks (e.g., Kretch, Crutchfield, & Ballachey, 1962; Secord & Backman, 1964).

The conclusion that low threat is superior to high threat in persuasion is based mainly on a study by Janis and Feshbach (1953) in which three groups of high school students were presented with three versions of an illustrated lecture on dental hygiene. Each version stated the dangers of dental neglect and recommended specific procedures for

tooth care, but the three versions differed in their vividness and in the degree to which they emphasized the possible dire consequences of such neglect. The results of the study indicated that the minimal-threat appeals were more effective than the high-threat appeals in eliciting reported conformity to the recommended procedures for tooth care. Subsequent studies which have been widely cited as supporting this negative relationship between fear arousal and persuasive effectiveness (although such an interpretation of their results is not completely justified in some cases, cf. Leventhal & Niles, 1965, Footnote 3) include Goldstein (1959), Haefner (1956), Janis & Feshbach (1954), and Janis and Terwilliger (1962).

Some studies, however, have found no relationship between fear arousal and persuasion (Frandsen, 1963; Millman, 1968; Moore, 1965; Payne, 1963). In some of these studies, the lack of a clear-cut relationship between fear level and persuasion may have been due

TABLE 1
THREAT-APPEAL STUDIES EXPERIMENTALLY MANIPULATING THREAT LEVEL

Studies	Fear, intensity, anxiety, or threat levels
Janis & Feshbach (1953)	Minimal, moderate, strong
Janis & Feshbach (1954)	Mild, strong
Moltz & Thistlethwaite (1955)	None, weak, strong
Goldstein (1959)	Minimal, strong
Nunnally & Bobren (1959)	Low, high
Berkowitz & Cottingham (1960)	Minimal, strong
Janis & Terwilliger (1962)	Mild, strong
Leventhal & Perloe (1962)	Optimistic, threatening
Frandsen (1963)	Minimal, moderate
Leventhal & Niles (1964)	Low, mild, high
Gollob & Dittes (1965)	No-threat, threat
Hewgill & Miller (1965)	Low, high
Insko, Arkoff, & Insko (1965)	Low, high
Leventhal, Singer, & Jones (1965)	Low, high
Powell (1965)	Mild, high
Stern, Lana, & Pauling (1965)	Neutral, fear-arousing
Chu (1966)	Mild, moderate, strong
Dabbs & Leventhal (1966)	None, low, high
Leventhal, Jones, & Trembly (1966)	Low, high
Leventhal & Singer (1966)	None, low, high
Leventhal & Watts (1966)	Low, medium, high
Miller & Hewgill (1966)	Mild, strong
Duke (1967)	Neutral, fear
Fischer, Cohen, Schlesinger, & Bloomer (1967)	Low, moderate, high
Leventhal, Watts, & Pagano (1967)	Moderate, high
Leventhal & Trembly (1968)	Low, high
Millman (1968)	Neutral, anxiety provoking

at least in part to methodological considerations, such as failure to arouse differential fear levels in the subjects (see Hewgill & Miller, 1965; Moltz & Thistlethwaite, 1955; Sastrohamidjojo, 1968).

Some research has yielded mixed findings concerning threat level and persuasion. For example, high fear has been found to affect attitude change without affecting behavior change (Leventhal, Singer, & Jones, 1965; Radelfinger, 1963); and Leventhal and Watts (1966) found that high fear produced more compliance in adopting the recommendations to decrease smoking, but less compliance for taking an X ray.

Thus, some studies have indicated a negative relationship between fear level and persuasion, others have found no relationship, and others have yielded mixed findings. However, most of the recent studies in the area have found a *positive* relationship between fear and persuasion. Studies finding that strong fear is more effective than weak fear have involved such diverse topics as dental hygiene practices (Haefner, 1965; Leventhal & Singer, 1966; Singer, 1965), smoking (Insko, Arkoff, & Insko, 1965; Leventhal & Niles, 1964; Leventhal & Watts, 1966; Leventhal, Watts, & Pagano, 1967; Niles, 1964; Snider, 1962), tetanus inoculations (Dabbs & Leventhal, 1966; Kornzweig, 1968; Leventhal, Jones, & Trembly, 1966; Leventhal et al., 1965), safe-driving practices (Berkowitz & Cottingham, 1960; Leventhal & Niles, 1965), fallout shelters (Hewgill & Miller, 1965; Miller & Hewgill, 1966; Powell, 1965), tuberculosis (DeWolfe & Governdale, 1964), roundworms (Chu, 1966), proper viewing of the sun during an eclipse (Kraus, El-Assal, & DeFleur, 1966), and even the use of stairway handrails for safety (Piccolino, 1966).

Not only have numerous studies found that a persuasive communication containing strong fear-arousing appeals can be effective, but there is evidence that even the arousal of fear which is irrelevant to the communication can facilitate persuasiveness (Lundy, Simonson, & Landers, 1967; McNulty & Walters, 1962; Simonson & Lundy, 1966).

VARIABLES WHICH MAY AFFECT THE PERSUASIVENESS OF THREAT

There is thus some inconsistency among the studies on fear-arousing communications, some indicating a negative relationship between threat level and persuasion, some indicating no relationship, and most studies indicating a positive relationship. Considerable research has been aimed at attempting to determine the variables which may affect the persuasiveness of threat (i.e., interact with the fear level). Although the review in this section is largely objective, at least two points are brought out in the studies summarized: First, few of the variables which have been studied have been found to interact with fear level consistently enough to account for inconsistencies in past studies. Second, some of the findings contradict the fear-drive model, which views fear as a force which motivates the recipients to reduce the fear.

Recommendations

Katz (1960) has stated that the findings of Janis and Feshbach (1953) may be due to a lack of a clear-cut relationship in the minds of the children between the failure to brush their teeth properly and the gangrene jaws of the aged (which were portrayed as one of the undesirable consequences in the high-fear group). He suggested that the use of fear arousal depends for its effectiveness upon the presence of well-defined paths for avoiding the punishment, that is, upon the recommendations which are given for avoiding the undesirable consequences portrayed in the communication. The nature of the recommendations has been the subject of several subsequent studies.

Dabbs and Leventhal (1966) found that manipulations of the effectiveness of the recommendations did not have any significant effect either on intentions to take action or on action taken (obtaining an inoculation for tetanus). Similarly, Moltz and Thistlethwaite (1955) found that although explicit assurance as to the efficacy of the recommended procedures was effective in producing anxiety reduction, the anxiety reduction was not associated with greater reported conformity to the recommendations. Thus, although

one study (Chu, 1966) did find a slight tendency ($p < .07$, $n = 1024$) for subjects to minimize the threat when the recommended solution was not seen as efficacious, research has not sufficiently indicated that perceived efficacy of the recommendations offered in a threat appeal significantly interacts with fear level in affecting persuasion.

Leventhal (1965), after his review of some relevant findings, concluded that when the actions recommended are clearly effective, attitude and behavior change are more likely to take place than if doubts exist about response effectiveness. However, this conclusion describes efficacy as a main effect; that is, regardless of the fear level, persuasion is more likely if the recommendations are perceived as efficacious. Therefore, the efficacy variable will not aid in reconciling inconsistencies in past studies.

Another variable which appears to be important as a main effect is the specificity of the recommendations. In communications on tetanus, Leventhal et al. (1966) and Leventhal et al. (1965) varied the fear levels and the specificity of instructions for obtaining shots. More of these subjects who received specific instructions actually took shots than those who did not receive specific instructions, regardless of the fear level of the communication. Similarly, Leventhal and Niles (1964) noted that the ease of carrying out the recommended action facilitated the effectiveness of a fear-arousing message. Thus, specific instructions are more effective in persuading subjects to change their behavior than are general instructions.

The lack of an interaction between fear level and efficacy or specificity of recommendations is not consistent with the fear-drive model. If fear becomes increasingly motivating as fear level increases, then specificity and efficacy of recommendations should have more effect for a high-fear message than for a low-fear message, since the recipient should be more motivated to take action to reduce the fear and to avoid the threat.

There is some suggestion that although efficacy and specificity may not interact with fear level, the mere presentation of recommendations (as compared with no recommendations on how to avoid the threat) may

interact with fear level. Leventhal et al. (1967) found a tendency ($p < .10$) toward an interaction between fear and instructions on how to stop smoking; the presentation of instructions made more of a difference in the high-fear condition than in the moderate-fear condition.

The positioning of the recommendations relative to the threat in the communication was suggested by Cohen (1957) as an important variable. Cohen found that a fear-arousing communication in which information assumed to satisfy the aroused needs is placed after need arousal brought more acceptance of that information than a situation in which information was placed before the need arousal.

In Cohen's study, however, fear level was not experimentally manipulated. Later studies do not indicate that positioning of the recommendations affects persuasion. Leventhal and Singer (1966) found that although fear reactions were reduced by moving the recommendations on dental hygiene from before, to intermixed with, to after the fear stimuli, this positioning had no effect on acceptance. Singer (1965) also found that the order of presentation of the recommendations did not significantly affect attitude change or behavior change. It may be noted that, as was true of the findings on efficacy and specificity (see previous discussion), the finding of no interaction between positioning and fear does not support the fear-drive model, which would suggest that the positioning of recommendations after the threat should be more effective than before the threat.

Although positioning of the recommendations apparently does not affect persuasion, one study indicates that positioning may affect the learning of the content of a threat appeal. Fischer, Cohen, Schlesinger, and Bloomer (1967) interspersed threatening material throughout safe-driving manuals and found that threatening stories after instructions were superior to stories preceding the instructions, in the retention of the message content by the subjects.

Thus, research on the recommendations in a fear appeal indicates that the specificity and efficacy of the recommendations may facilitate the persuasiveness of the appeal,

regardless of the fear level; that the presentation of recommendations may be more important in a high-fear appeal than in a low-fear appeal; and that the positioning of the recommendations relative to the threat is not an important factor in persuasion, although it may affect the retention of the message.

Personality Characteristics

In their review of some of the fear-arousal literature, Miller and Hewgill (1966) suggested that individuals differ in the kinds of statements they perceive as strong fear-arousing appeals. Similarly, Leibler (1967) suggested that the type of person who responds to a threatening mailed questionnaire is different from the type of individual who responds to a nonthreatening questionnaire. Thus, the characteristics and predispositions of the threat-appeal recipients may contribute to the relative effectiveness of high threat versus low threat.

Self-esteem of the recipients contributes to differential effects of fear on persuasion, according to a number of studies. In their investigation of the effects of threatening versus optimistic messages on the perception of army life, Leventhal and Perloe (1962) found that self-esteem was negatively related to acceptance of the threat appeals. Subjects high in self-esteem were influenced more by the optimistic communications, while subjects low in self-esteem were influenced more by the threatening communications. These results, however, occurred only among subjects who received communications from sources dissimilar to themselves with respect to personality characteristics.

The above study by Leventhal and Perloe did not vary fear level but rather had one pessimistic (threat) appeal and one optimistic appeal. In addition, the results held only for a certain kind of subjects. In contrast with the finding by Leventhal and Perloe of a negative relationship between self-esteem and persuasiveness of threat, subsequent studies have consistently found a *positive* relationship; that is, high-esteem subjects tend to be more persuaded by high-threat appeals, and low-esteem subjects tend to be more persuaded by low-threat appeals. Leventhal and Trembly (1968) found that increasing the

intensity of threat strengthened the coping (see following discussion) efforts of middle- and high-esteem subjects but decreased the efforts of low-esteem subjects. Going from mild- to high-threat messages, Dabbs and Leventhal (1966) found increases for high-esteem subjects and decreases for low-esteem subjects on stated intentions to take tetanus shots; and Kornzweig (1968) recorded a similar and stronger effect for actual shot taking. Consistent with these findings, Zemach (1966) observed that low self-esteem subjects were more persuaded by a low-guilt-arousing appeal than by a high-guilt-arousing appeal.

Thus, the interaction of self-esteem with fear level in persuasion is quite well supported. People with high self-esteem are more persuaded by a high-threat appeal than are people with low self-esteem. One reason for this may be that high-esteem subjects are less personally threatened by a high-threat appeal and thus can react to such an appeal by taking realistic action rather than by attempting to avoid thoughts about the threat (see subsequent discussion on these two reactions to fear), which may be the reaction of the low-esteem subjects.

Reference has already been made to coping behavior; and the "coping style" of a person (his characteristic means of dealing with tension-producing material) has been found by Goldstein (1959) to affect how the person will respond to a high-threat appeal. Goldstein's results indicate that "copers" receive strong-fear appeals better than "avoiders," whereas among avoiders the minimal-fear appeals receive greater acceptance. Coping style has also been found to be related to psychophysiological responses to tension arousal (Goldstein, Jones, Clemens, Flagg, & Alexander, 1965). Ability to cope with tension-producing material may be a facet of a high self-esteem (cf. Leventhal & Trembly, 1968). The directions of the results concerning self-esteem and coping style are consistent with this suggestion.

In addition to self-esteem and coping style, the subject's perceived vulnerability to danger appears to interact with threat level. Niles (1964), in a study on smoking and lung cancer, divided subjects on the basis of their

initial feeling of vulnerability to lung cancer. Only those people expressing low susceptibility were increasingly persuaded to stop smoking and to take X rays as threat increased; more vulnerable people showed no difference in their expressed desire to stop smoking or to take X rays as messages became more frightening. This indicates that high threat is more effective than low threat for people who do not feel especially vulnerable to the threat, but that threat level makes no difference for those who do feel vulnerable. An even stronger interaction between fear and vulnerability is indicated by the findings of Watts (1967) and Leventhal and Watts (1966) that higher feelings of vulnerability actually tended to *reduce* the desire to take action as the fear level of the message increased.

Leventhal et al. (1966) and Leventhal and Singer (1966) did not find significant effects of perceived vulnerability on persuasiveness of fear arousal. However, the consistency among those studies which did find such effects indicates that perceived vulnerability may be an important source of individual differences in responses to threat appeals. The indication is that perceived vulnerability interacts negatively with fear level, so that high fear is more effective for low-vulnerable subjects and low fear is more effective for high-vulnerable subjects.

Janis and Feshbach (1954) suggest that anxiety level may be an important variable for threat appeals. They found that subjects high in anxiety were less influenced by a strong fear appeal than were low-anxiety subjects. Consistent with this finding is a study on frustration and language intensity by Carmichal and Cronkhite (1965), which suggests that a subject at a high activation level tends to reject a persuasive speech that would further increase his activation. This negative relationship between chronic anxiety level and persuasiveness of increasing threat is an assumption underlying the defense-avoidance hypothesis of Janis and Feshbach (1953), who stated that high fear may be less effective than low fear because it arouses a high level of anxiety in the subjects and causes them to reject the anxiety-provoking message. Such an effect would presumably be greatest for

subjects who are high in anxiety before the message is presented.

However, the effect of chronic anxiety level reported by Janis and Feshbach (1954) has not been replicated in a number of subsequent studies which examined anxiety (e.g., Goldstein, 1959; Niles, 1964; Singer, 1965). Thus, one cannot say that an interaction between anxiety and fear level is substantiated by the research evidence.

Note that, again, the fear-drive model does not predict the results which have been obtained for some of the personality characteristics, such as the interactions of esteem and vulnerability with fear level and the lack of an interaction for anxiety and fear level. One response to such findings has been to abandon the concept of fear as a drive and to develop a model that explains the responses to fear appeals as being mediated by variables other than fear (see Leventhal, 1967, discussed subsequently).

Of the personality characteristics which have been suggested as interacting with fear level, self-esteem and perceived vulnerability appear to be well supported, coping style has been suggested in one study, and chronic anxiety level does not appear to be an important variable. Two other suggested variables are the recipient's concern with the topic (Singer, 1965) and his need for cognition (Cohen, 1957).

Source Credibility

The results of a study by Hewgill and Miller (1965), on attempts to persuade PTA members of the importance of fallout shelters, indicate that strong fear appeals bring about greater attitude change than do mild fear appeals when the source has high credibility with the recipients. Powell and Miller (1967) also found a positive relationship between source credibility and persuasiveness of increasing fear levels.

Incidental observations by the authors of two studies lend further support to the importance of source credibility in fear-arousing appeals. Insko et al. (1965), in their study on smoking, noted that their source was highly credible (source was a teacher, subjects were junior high students) and that this fact probably influenced the results of their

study, which yielded a positive relationship between fear level and attitude change. Rosenblatt (1962) found an interaction between threat and discrepancy (strong threat became less effective than weak threat the greater the amount of change advocated) and suggested that this was due to the effects of both variables on the intervening variable of credibility.

If the source is not highly credible then the response of the subjects may be merely to discredit the source further rather than to accept the recommendations of a high-threat communication. Miller and Hewgill (1966) presented evidence of a lack of attitude change by subjects exposed to strong-fear messages which were attributed to low-credibility sources, and they attributed this result to the possibility that the subjects may have further discredited the source in rejecting the message. Related to this suggestion is one made by Katz (1960), that when there is no clear relation between the punishment and the desired behavior in a threatening message, then the effect of high threat may be merely to create negative attitudes toward the person(s) associated with the negative sanctions (i.e., the source of the communication). Such a result appears to be more likely if the source were low in credibility than if he were highly credible.

In conclusion, there is considerable evidence that source credibility does interact with fear and thus is an important variable in determining whether high fear or low fear is more effective. High fear may be more effective than low fear when the source credibility is high but not when the source credibility is low.

Learning of Message Content

It may be that subjects exposed to different levels of threat learn different amounts of the factual materials presented in the communications and that this differential learning affects their attitude change. Duke (1967) suggested that this is so. Duke felt that the variable of communication length may have been confounded with level of fear in the Janis and Feshbach (1953) study, in which the high-fear messages were longer than the low-fear messages. In fact, the high-fear

messages are longer in many studies, because they often consist of the same material as that in the low-fear messages plus additional fear-arousing material. For example, such a procedure resulted in the high-fear messages being longer than the low-fear messages (270 words as compared with 190 words—42% longer) in the study by Janis and Milholland (1954) described subsequently. Duke's results indicate that there were differential learning effects as a function of communication length; subjects presented with the shorter communication (low fear) learned more.

In contrast with the finding by Duke (1967) of differential learning due to differential message lengths, several studies have not found any differences between the different levels of threat in the subjects' comprehension of the factual content of the communications (Fischer et al., 1967; Goldstein, 1959; Gollob & Dittes, 1965; Janis & Feshbach, 1953; Millman, 1968; Singer, 1965).

Although there is considerable evidence that threat level does not influence *how much* is learned, one study suggests that threat level may influence *what* is learned from the content of a persuasive communication. Janis and Milholland (1954) compared the verbatim recall of high-fear versus low-fear information and, although they too found no differences in the recall of the major content theme or the recommended conclusion, they did find a selective-recall tendency for certain specific information. That is, although there was apparently no marked loss in overall learning efficiency as a result of strong threat appeals, there may have been a selective learning of certain types of information. However, this result may have been confounded with the different lengths of their messages. It is not too surprising that subjects would tend to recall different material from two messages, one of which contains almost 50% more material than the other.

The best conclusion that can be drawn from the research relevant to learning of message content is that level of threat is not significantly related to learning of factual content. Thus, comprehension of the message is probably not a variable mediating differing

persuasiveness of different levels of fear arousal.

Interest

One situation in which strong fear may be effective in persuading may arise when one wishes to arouse interest before persuading. This suggestion was made by Janis and Feshbach (1953), even though they found low fear more effective in their study. Some subsequent studies have supported this suggestion. Berkowitz and Cottingham (1960) presented high- and low-threat messages on the use of safety belts and found that strong fear was indeed more persuasive than weak fear when the communication was initially low in interest value and that the dramatic value of the strong-fear communication made it more interesting than the weak-fear message.

Robbins (1962b) also found that fear level appeared to be positively related to attention; subjects seemed to show more interest in listening to a recording concerning smoking and cancer (developed by Robbins, 1962a) as the recording increased in anxiety-arousing level.

As with most variables related to fear-arousing communications, the research on the role of interest is not entirely consistent. Nunnally and Bobren (1959) found that high-anxiety messages actually depressed public interest concerning communications on mental health; and Cannell and MacDonald (1956) suggested that threat-avoidance may be an explanation for their findings that smokers read fewer articles about cigarettes and cancer than do nonsmokers.

There is thus no clear relationship between fear level and interest value. However, it may be noted that the above studies suggesting that high fear may arouse interest were in a laboratory setting, whereas those indicating that high fear may depress interest were in a field setting. It may be that with a captive audience high fear arouses the interest of those audience members who have no choice but to receive the message, whereas in natural settings people have the choice of avoiding the communication altogether. High fear may be more effective in getting the attention of both groups of people but may depress interest

in exposing oneself to such a message if one has the choice.

POSSIBLE SOURCES OF INCONSISTENCY AMONG STUDIES

The studies reviewed thus far have been concerned with the nature of the recommendations, personality characteristics of the recipients, source credibility, learning of factual content, and interest value of threat. In each of these areas, as well as in the general conclusion regarding the persuasiveness of high versus low threat, there has been conflicting evidence. There may be some considerations that have not been explicitly studied which may have contributed to the inconsistency of findings across studies. One conceptual consideration and four methodological considerations are suggested here.

Fear of What?

An important assumption underlying the research on fear-arousing appeals is that the studies have been investigating the same phenomenon because they have all been concerned with "fear arousal" and "threat." However, it may be that the only thing all of these studies really have in common is their concern with the arousal of different kinds of negative affective responses to different topics.

Thus, the question may be asked of the "fear arousal" literature—fear of what?² This question consists of two parts, which are considered separately. The first is, what is this thing called "fear"? The second is, what is it that the subjects fear?

Concerning the first question, the nature of the "fear" that is aroused by threat appeals, Leventhal (1965) and Janis and Leventhal (1968) have suggested that the reason fear motivates some people, but not others, to act is that the messages may arouse different kinds of fear. Thus, the arousal of "neurotic anxiety" by fear-arousing stimuli may cause subjects to attempt to reduce fear by eliminating *thoughts* about danger (via repression, denial, aggression, etc.), whereas those subjects in whom "realistic fear" is

² This consideration was suggested to the author by W. C. Redding (personal communication, September 1968).

aroused may take realistic *action* (e.g., adopt the communication's recommendations) to eliminate or avoid the danger.

Further support for the suggestion that the "fear" in all fear-arousal studies may not be the same thing is given in a study by Leventhal and Trembly (1968). These authors felt that stress films on automotive accidents, which they showed to high school students, created at least two distinct states of fear. "Anticipation fear" was a consequence of descriptions of threat agents, their approach, and their method of attack, and was characterized by muscular tension and attention to the environment and to methods of avoiding danger. "Inhibitory fear" seemed to follow descriptions of destruction and was accompanied by inner tension (nausea) and attention to actual or potential damage to the self. Their study suggested that a focus on anticipation fear would facilitate coping activity, whereas the focus on inhibitory fear would lead to depression, anger, and a sense of loss.

Consistent with the above suggestions by Leventhal (1965), Janis and Leventhal (1968), and Leventhal and Trembly (1968) concerning two kinds of fear, an analysis of the published studies on fear appeals suggests that these studies may have involved the manipulation of at least two different kinds of fear. The first type, corresponding to neurotic anxiety or inhibitory fear, may be a nauseated, sick feeling aroused by gruesome, vivid descriptions and pictures of such scenes as automobile accidents (e.g., Berkowitz & Cottingham, 1960), infected gangrene mouths (e.g., Janis & Feshbach, 1953), and surgery on cancerous lungs (e.g., Leventhal & Niles, 1964). The second type of fear, perhaps corresponding to realistic fear or anticipation fear, appears to be somewhat more concerned with the likelihood of the subjects' experiencing the threat than with the gruesome seriousness of the threat (e.g., Chu, 1966; Gollob & Dittes, 1965; Hewgill & Miller, 1965). That is, the threat to the subjects is that of a high probability of experiencing the portrayed consequences if they do not accept the communication's recommendations.

Not only may the experimental manipulations of fear have produced different kinds of fear but the criteria used for measuring the effectiveness of the fear-arousal manipulations also indicate that "fear" may mean different things in different studies. Thus, several studies have measured fear as the sum of a series of reported reactions such as fear, anxiety, nausea, depression, panic, anger, tension, disgust, nervousness, and discomfort (see Leventhal et al., 1966; Leventhal & Singer, 1966; Leventhal et al., 1965; Leventhal & Trembly, 1968; Leventhal & Watts, 1966; Leventhal et al., 1967). Some studies have considered fear primarily as the subjects' reports of anxiety (see Goldstein, 1959; Miller & Hewgill, 1966; Moltz & Thistlethwaite, 1955; Powell & Miller, 1967). Other studies have defined fear arousal primarily in terms of the subjects' reported worry or concern (see Chu, 1966; Hewgill & Miller, 1965; Janis & Feshbach, 1953, 1954; Powell, 1965). Finally, in some studies fear has been measured mainly in terms of reported fear (see Dabbs & Leventhal, 1966; Leventhal & Niles, 1965).

The second part of the question—fear of what?—concerns just what it is that the subjects fear. The consideration here is more with the object of the fear, whereas the preceding discussion was more concerned with the feeling of fear itself. There has been considerable variation in the topics of the fear-arousing communications (see Table 2). It seems unlikely to the present author that such fears as losing one's teeth, contracting tuberculosis or lung cancer, being killed in an automobile accident, or being killed by an atomic holocaust are perceived as equivalent fears with regard to such factors as seriousness, imminence, or realism. However, these fears do have at least one thing in common; they all involve some kind of physical danger to the subjects.

Some fear-arousal studies have used threats involving undesirable consequences other than physical danger. Threats have included social disapproval (Powell & Miller, 1967), unpleasant army life (Leventhal & Perloe, 1962), undesirable grading system (Cohen, 1957), undesirable effects of overpopulation (Frandsen, 1963; Millman, 1968), mental

illness (Millman, 1968; Nunnally & Bobren, 1959), and harm to other people valued by the subject (e.g., family—Hewgill & Miller, 1965; Powell, 1965). It seems that these types of threats may not be equivalent to each other nor to the physical threats enumerated above. If it is true that the “threat” in various fear-appeal studies is not equivalent, then it is not surprising that the studies have yielded different findings on the effectiveness of high threat versus low threat.

Further support for the suggestion that the topics studied may not yield equivalent threat is indicated by some studies which have shown that fear of physical dangers and fear of other types of danger may not be equivalent. For example, Miller and Hewgill (1966) found that, for a sample of college students, fears of losing loved ones by accident or separation scored higher in “meaningfulness” than fears of death or of annihilation of the human race in a nuclear war. Similarly, a factor analysis of a fear survey schedule by Rubin, Katkin, Weiss, and Efran (1968) indicated that fear of death and illness constituted a factor distinct from fear of interpersonal events. Finally, Hodges (1968) found that threats to self-esteem (ego threats) and threats of physical pain led to different degrees of anxiety arousal.

Thus, it may be that the concept of “threat” or “fear arousal” has been viewed in so many different ways that the studies on fear-arousing communications have not actually been studying the same phenomenon. Differences in the nature of the fear and in the objects of the fear may have contributed to the inconsistency of the findings on the arousal of fear in persuasion.

Topics

The variability in topics used for threat-appeal studies can be seen in Table 2. Even though threat-appeal studies have used at least 16 different topics, this diversity has seldom been considered as an important source of inconsistency in findings. For example, Duke (1967) designed a study as a test of the Janis and Feshbach (1953) findings. However, Duke used a different topic (syphilis rather than dental hygiene), as well as different subjects (college students rather than high school students). It is not surprising to this author that Duke’s findings concerning learning of factual content were different from those of Janis and Feshbach.

One reason that topic areas may contribute to differences in results among studies may be the differences in the subjects’ knowledge of a topic. It is probable that such diverse topics as smoking, dental hygiene, tetanus,

TABLE 2
TOPICS USED IN RESEARCH ON THREAT APPEALS

Topics	Representative Studies
Dental hygiene	Goldstein (1959), Janis & Feshbach (1953), Janis & Feshback (1954), Janis & Milholland (1954), Leventhal & Singer (1966), Moltz & Thistlethwaite (1955)
Smoking	Insko et al. (1965), Janis & Terwilliger (1962), Leventhal & Niles (1964), Leventhal & Watts (1966), Leventhal et al. (1967), Stern et al. (1965)
Tetanus	Dabbs & Leventhal (1966), Leventhal et al. (1966), Leventhal et al. (1965)
Safe driving	Fischer et al. (1967), Leventhal & Niles (1965), Leventhal & Trembly (1968)
Fallout shelters	Hewgill & Miller (1965), Powell (1965)
Population growth	Frandsen (1963), Millman (1968)
Mental health	Millman (1968), Nunnally & Bobren (1959)
Cancer	Gollob & Dittes (1965), Robbins (1962a, 1962b)
Safety belts	Berkowitz & Cottingham (1960)
Roundworms	Chu (1966)
Grades	Cohen (1957)
Tuberculosis	DeWolfe & Governdale (1964)
Syphilis	Duke (1967)
Viewing sun	Kraus et al. (1966)
Army life	Leventhal & Perloe (1962)
Donating blood	Powell & Miller (1967)

safe driving, fallout shelters, population growth, and mental health are not equally familiar to a given group of people. Hovland, Janis, and Kelley (1953) state that the emotional reactions evoked by communications which announce a threatening event will tend to be reduced by prior exposure to information about the event. Consistent with this suggestion is the finding of Lewan and Stotland (1961) that neutral information prior to an emotional appeal (although not specifically a threat appeal) lessened the effectiveness of the appeal. Lewan and Stotland suggested that the subjects' possession of prior information may have influenced the findings of Janis and Feshbach (1953). Also, in their study of the relationship between knowledge of lung cancer and smoking habits, Spelman and Ley (1966) indicated that heavy smokers distorted the information available to them. These authors suggested that this distortion may be a reason for the lack of effectiveness of some fear-producing propaganda against cigarette smoking.

As a check on the possibility that the topics may vary in familiarity, the author constructed a brief familiarity survey, in which subjects were instructed, for each of five topic areas, "based on your exposure to information concerning each of these areas, rate your familiarity with each of them by placing a check in the appropriate space along the scale." Each topic was followed by a 7-point scale ranging from "not at all familiar" to "extremely familiar." The topics included the three most commonly used in threat-appeal research (see Table 2): (1) dental neglect and improper tooth care, (2) cigarette smoking, (3) tetanus, (4) atomic fallout, and (5) careless automobile driving.

Since there might be a difference between subjects (see below) as well as between topics, the scale was administered to high school (ninth grade) males ($n = 20$, mean $[M]$ age = 14.8 years), college males ($n = 20$, M age = 19.2), college females ($n = 13$, M age = 18.9), and adult females ($n = 13$, M age = 40.6). Two two-way analyses of variance were computed—Subjects (2 between) \times Topics (5 within). In Analysis A, the high school and college males were compared, and in Analysis B, the college and adult females

were compared. The results of both analyses were strikingly parallel in all respects. In neither analysis was there a significant main effect for subjects, nor an interaction between subjects and topics. However, the main effect for topics was significant in both analyses (Analysis A, $F = 19.89$, $df = 4/152$, $p < .001$; Analysis B, $F = 21.23$, $df = 4/96$, $p < .001$).

Topics thus differed in their perceived familiarity for all subject groups. To determine which pairs of topics were rated as significantly different, the mean ratings were subjected to a Newman-Keuls analysis. For Analysis A, the order of familiarity (in decreasing order, the numbers referring to the five topics numbered above) was 5, 2, 1, 3, 4; for Analysis B the order was 5, 2, 1, 4, 3. The Newman-Keuls method indicated, for both analyses, that all differences between pairs of topics were significant ($p < .01$) except for 1-2, 3-4, and 2-5. In addition, Difference 1-5 was significant in Analysis A, but not in Analysis B. Thus, safe driving, dental hygiene, and smoking appear to be topics which are perceived as more familiar than tetanus and atomic fallout.

In summary, both analyses indicated that there are differences in perceived familiarity with the topics used in threat-appeal research. Greenwald and Sakumura (1967) found that differences in judged familiarity of statements on the United States in Vietnam were not related to learning of the statements, but that familiarity was positively related to acceptability of the statements. Perhaps acceptability of a threatening persuasive appeal varies with the subjects' familiarity with the topic of the appeal. Or high fear may have more interest value (see above) for topics with which the subjects are relatively unfamiliar. Further research on topic familiarity may be beneficial.

Besides differing in their familiarity, topics may differ in their importance. Colburn (1967) found a strong interaction between fear level and topics: The high-fear speech on cancer, the medium-fear speech on tuberculosis, and the low-fear speech on tooth decay were the most successful speeches in securing acceptance of their recommendations. Colburn attributed this to the differing im-

portance of the topics for his subjects (college students). Thus, high-fear appeals may be more effective than low-fear appeals for a topic which is important to the subjects (such as cancer) but may be less effective for a topic which is not too important to the subjects (such as tooth decay).

Two reasons have been suggested why topic differences may be an important source of inconsistencies in findings on fear appeals—familiarity and importance. In addition, topics may vary on such other dimensions as ego-involvement and nearness to the subject (in time or space). Such considerations suggest that the differences in topics used in threat appeals may have contributed to the differences in findings concerning the effectiveness of threat.

Subjects

Of course different studies must use different subjects; and it is common for several studies on one topic to involve different kinds of subjects. However, the diversity of subjects in studies on threat appeals may have been great enough to contribute to different findings on the effectiveness of these appeals. As can be seen in Table 3, subjects have ranged from elementary school children to college students to adults.

Leventhal and Niles (1965) mentioned subject sampling as a possible source of inconsistencies in findings on fear appeals, but many investigators do not appear to consider

this consideration as being too important. Thus, for example, Moltz and Thistlethwaite (1955) attempted to replicate the findings of Janis and Feshbach (1953) but failed to arouse differential fear levels in their subjects. This failure may have been due to the fact that army recruits (the subjects for Moltz and Thistlethwaite) may react differently to threats of dental neglect than do high school freshmen (the subjects for Janis and Feshbach).

Similarly, Leventhal and Singer (1966) attempted to replicate the Janis and Feshbach (1953) study using the same topic (dental hygiene) and obtained results contradictory to those of Janis and Feshbach. Perhaps the results were affected by the fact that the subjects for the Leventhal and Singer study were visitors to a state fair, varying over a wide range of ages and education levels. Again, it is not improbable that such a sample of subjects may react differently from high school freshmen to attempts at fear arousal on dental neglect. Singer (1965) found that even within high school freshmen there were differences between general-course students and college-preparatory students in dental concern and in responses to fear arousal.

Differences in familiarity with the topic areas was suggested above as a possible reason why differences in topics may be important. This same consideration may be a reason for the importance of differences in subjects. Subjects of wide age and education-level

TABLE 3
SUBJECTS USED IN RESEARCH ON THREAT APPEALS

Subjects	Representative studies
College students	Berkowitz & Cottingham (1960), Cohen (1957), Dabbs & Leventhal (1966), Duke (1967), Frandsen (1963), Gollob & Dittes (1965), Leventhal & Niles (1965), Leventhal & Perloe (1962), Leventhal et al. (1965), Leventhal et al. (1967), Millman (1968), Robbins (1962a, 1962b), Stern et al. (1965)
Adults	Hewgill & Miller (1965), Janis & Milholland (1954), Janis & Terwilliger (1962), Kraus et al. (1966), Leventhal et al. (1966), Powell (1965), Powell & Miller (1967)
Population cross-section (junior high to adults)	Leventhal & Niles (1964), Leventhal & Singer (1966), Leventhal & Watts (1966), Nunnally & Bobren (1959)
Junior high or high school students	Fischer et al. (1967), Goldstein (1959), Insko et al. (1965), Janis & Feshbach (1953), Janis & Feshbach (1954), Leventhal & Trembly (1968)
Army recruits	Moltz & Thistlethwaite (1955)
Student nurses	DeWolfe & Goverdale (1964)
Taiwan elementary school students	Chu (1966)

ranges may differ in their knowledge concerning any given topic (although it was found above they do not seem to differ in their *perceived* familiarity with the topics). For example, Cannel and MacDonald (1956) found that education level interacts with smoking habits in the perception of the relationship between smoking and lung cancer. Among nonsmokers, the higher the education the more likely the person was to accept this relationship as proved; but among smokers, the higher the education the *less* likely they were to accept it.

Besides differences in age and education, there is some evidence that sex differences between subjects may account partially for differences in reactions to fear arousal (Fischer et al., 1967; Leventhal et al., 1966). Few studies have considered this aspect of subject differences, even though one study used female subjects only (DeWolfe & Governdale, 1964) and several studies have used male subjects only (Duke, 1967; Leventhal & Perloe, 1962; Leventhal & Trembly, 1968; Moltz & Thistlethwaite, 1955; Powell, 1965).

Media

The various media for presentation of the communications in studies on threat appeals are shown in Table 4. The most common medium is the printed word, probably because it is easiest to control extraneous variables with a printed communication. The least common medium is live presentation, probably the most difficult situation in which to control extraneous variables.

Frandsen (1963) made a direct attempt to

determine the differential effects of media of transmitting threat appeals, using taped, televised, and live presentations. He found no differences but suggested that further experiments are necessary before any generalizations can be made. There is some evidence that live presentations are more persuasive than recorded messages, which, in turn, are more efficient than print (see Klapper, 1960), but this evidence does not specifically pertain to fear-arousing messages.

In one study which did specifically concern fear-arousing messages, Leventhal and Trembly (1968) found that different aspects, such as size and color, of the *same* medium (film) may have unanticipated information significance to the subjects. It seems even more likely that different aspects of *different* kinds of media may have important effects on responses to fear appeals. For example, the use of film, or of slides to accompany a verbal description, may be more conducive to a nausea-type fear than a concern-type fear (see discussion on kinds of fear above), because gruesomeness may be more vividly depicted via color pictures than via verbal descriptions. Verbal presentation of threat material may, in turn, be more conducive to concern-type fear.

Criteria

A final possible source of inconsistency in the threat-appeal findings lies in the criterion of persuasive effectiveness of a threat appeal. This may be an important practical consideration because, for example, in most applied settings a communication which changes only

TABLE 4
COMMUNICATION MEDIA USED IN RESEARCH ON THREAT APPEALS

Media	Representative studies
Printed	Dabbs & Leventhal (1966), Fischer et al. (1967), Gollob & Dittes (1965), Janis & Milholland (1954), Janis & Terwilliger (1962), Leventhal et al. (1966), Leventhal & Perloe (1962), Leventhal et al. (1965), Nunnally & Bobren (1959)
Tape recorded	Hewgill & Miller (1965), Millman (1968), Powell (1965), Powell & Miller (1967), Robbins (1962a, 1962b)
Tape recorded plus slides	Berkowitz & Cottingham (1960), Duke (1967), Goldstein (1959), Insko et al. (1965), Janis & Feshbach (1953), Janis & Feshbach (1954), Leventhal & Singer (1966), Moltz & Thistlethwaite (1955)
Film	Leventhal & Niles (1964), Leventhal & Niles (1965), Leventhal & Trembly (1968), Leventhal & Watts (1966), Leventhal et al. (1967)
Live, oral	Chu (1966), Cohen (1957), Stern et al. (1965)

TABLE 5
CRITERIA OF PERSUASION USED IN RESEARCH ON THREAT APPEALS

Criteria	Representative studies
Attitude or opinion change	Berkowitz & Cottingham (1960), Cohen (1957), DeWolfe & Goverdale (1964), Frandsen (1963), Gollob & Dittes (1965), Hewgill & Miller (1965), Janis & Terwilliger (1962), Leventhal & Perloe (1962), Millman (1968), Powell (1965), Powell & Miller (1967), Stern et al. (1965)
Conformity, or reported conformity, to recommended actions	Goldstein (1959), Janis & Feshbach (1953), Janis & Feshbach (1954), Kraus et al. (1966), Moltz & Thistlethwaite (1955)
Desire or intentions to act	Chu (1966), Insko et al. (1965), Leventhal & Niles (1965), Leventhal & Singer (1966), Leventhal & Trembly (1968)
Attitude change, intentions, and action	Dabbs & Leventhal (1966), Leventhal et al. (1966), Leventhal & Niles (1964), Leventhal et al. (1965), Leventhal & Watts (1966), Leventhal et al. (1967)

an attitude or an intention to act would probably not be equatable with one which also causes the recipients to take action on the recommendations presented.

Table 5 shows that in assessing the effects of fear arousal, studies have used several criteria: attitude or opinion change; conformity to the recommended actions; desire or intentions to act; and attitude change, intentions, and action. Whether high or low fear is more effective may be a function of which measure of effectiveness was used. For example, Leventhal et al. (1966) found that high fear produced more favorable intentions toward taking action but was unrelated to action taken. Similarly, Dabbs and Leventhal (1966) obtained an interaction effect between threat and self-esteem, but the results held only for attitudes, not for action.

Evans, Rozelle, Lasater, Dembroski, and Allen (1968) have developed what they feel is an adequate measure of behavioral conformity to certain recommendations on dental hygiene. This may make possible the use of actual conformity to the recommendations, rather than reported conformity to the recommendations, as a measure of effectiveness for threat appeals concerning dental hygiene.

A CURVILINEAR RELATIONSHIP?

This review thus far has been concerned with variables which may influence the effectiveness of threat in persuasion and with factors which may have contributed to some of the inconsistency in findings. The basic consideration underlying this analysis (i.e., the main area in which conflict occurs among

the findings) has been the fact that some studies indicate that high fear is more persuasive and others indicate that low fear is more persuasive.

Recent attempts by some authors to reconcile the conflicting findings on threat appeals have led to the suggestion of a curvilinear (quadratic), rather than a linear, relationship between fear level and persuasion (see Janis, 1967, 1968a, 1968b; Janis & Leventhal, 1968; McGuire, 1963, 1966, 1968; Millman, 1968). The suggestion is that attitude change, or behavior change, increases with increases in fear level up to a certain point then decreases with further increases in fear level. The postulated relationship is illustrated in Figure 1.

The way in which such a hypothesized relationship may serve to reconcile the different findings on high versus low fear may be described as follows. If the low and high fear levels in one study were at, for example, Levels A and B, respectively, on the fear-level axis, then the results of that study would indicate a positive relationship between fear level and persuasion. However, if the low and high fear levels in another study were at Levels B and C, or A and C, respectively, then the results of that study would show a negative relationship between fear level and persuasion.

Unfortunately, there is no accurate way of determining the comparability of fear levels from one study to another. As indicated in Table 1, fear levels used in various studies have been described in such terms as "low," "weak," "minimal," "mild," "medium,"

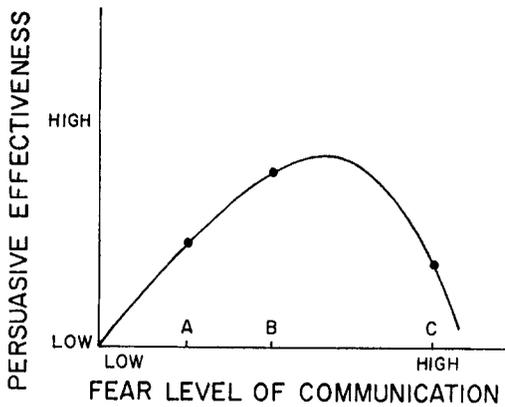


FIG. 1. Postulated curvilinear relationship between level of fear arousal and persuasive effectiveness of the communication.

"moderate," "high," and "strong." What may have been labeled "high fear" in one study may have been equivalent to "medium fear" in another study—if the two kinds of "fear" were even equivalent (see above).

Also, there has been little possibility for discovery of a curvilinear relationship in most studies which have been published in the last 15 years. As indicated in Table 1, most such studies have used only two fear levels (omitting the no-fear control groups as a fear level). Of the 27 studies which experimentally manipulated the fear levels, only 5 used three fear levels. The best way to determine if a curvilinear relationship exists between fear level and persuasive effectiveness is through future studies using more than two fear levels.

The hypothesis of a curvilinear relationship between fear arousal and persuasion does not explain anything in itself. Theorists have apparently resorted to the curvilinear hypothesis primarily because research has not been very successful in yielding variables which interact with fear consistently enough to account for conflicting findings (see preceding discussion of such variables). Thus, for the curvilinear hypothesis to be of use, one must explain the curve in terms of some underlying variables which cause it.

Several underlying variables which may cause a curvilinear relationship between fear arousal and persuasion have been suggested. For McGuire (1966), the factors determining the point on the curve at which further fear

increases lead to decreases in persuasion are chronic level of anxiety, concern over the issue, and message complexity. Research has indicated that chronic anxiety level is probably not an important variable, although concern with the topic may be important. One study has looked at message complexity (Gollob & Dittes, 1965). Millman (1968) suggested that comprehension of the message content is an important variable. Again, the research summarized does not support this conclusion. Janis (1967, 1968a, 1968b) maintained that defensive avoidance is the underlying variable. That is, increases in fear lead to increases in persuasion until the fear becomes so unpleasant that the subject rejects the message. Other than the Janis and Feshbach studies (1953, 1954), this interpretation lacks empirical support.

Higbee and Heslin (1968) have suggested a variable which the author feels may account for the curvilinear relationship, and which may be somewhat more parsimonious than some of those previously suggested. This variable is the probability that the undesired consequence will occur if no preventive action is taken. This consideration may be important because if the recipient feels that the consequence is unlikely to occur, he will not be motivated to take action to avert it (i.e., he will not adopt the recommendations of the communication).

The severity of the consequences (threat level) and the probability of their occurrence may be negatively related. Thus, a highly threatening consequence (e.g., paralysis or blindness) may not be seen as too likely to result from not brushing one's teeth, whereas it may be seen as more likely that not brushing one's teeth could lead to cavities. If such a negative relationship exists, then increases in fear level could lead to decreases in perceived probability of occurrence of the threat and thus to decreased persuasiveness.

Thus, there may be two main factors influencing the persuasiveness of a fear-arousing communication. The first is the threat level of the threatened consequence, which (according to most previous studies) facilitates opinion or behavior change as it increases. The second factor is the likelihood of occurrence of the threat, which may be negatively related

to the threat level of the undesirable consequences. The interaction of these two factors may result in a curvilinear relationship between fear level and persuasion: As fearfulness of the threatened consequence increases, motivation to avoid it increases. But perceived probability of occurrence may be *decreasing* at the same time, until some point is reached where the threat seems so unlikely to the subjects that the improbability of occurrence outweighs the effects of the fearfulness of the consequences and reduces the persuasiveness of the communication. From this point, the curve dips downward.

This hypothesis of an interaction between fear level and probability of occurrence does not rest upon the model of fear as a drive, which model has been shown to be inconsistent with several empirical relationships established. Rather, the Higbee and Heslin hypothesis may be viewed as the interaction of two cognitive variables—perceived magnitude of danger and perceived likelihood of occurrence. Such an approach is not the first to attempt to explain fear-appeal findings as being mediated by variables other than a fear emotion. Leventhal (1967), after expressing his dissatisfaction with the fear-drive model, has developed and been working on a “parallel response paradigm,” which depicts the fear appeal as consisting of components which may influence acceptance responses or emotional responses or both—however, these responses are viewed as parallel and do not necessarily influence one another.

Although two unpublished studies on perceived probability of occurrence as a variable underlying a curvilinear relationship between fear arousal and persuasion (Snider, 1962; Wuebben, 1966) have not been especially encouraging, this hypothesis seems reasonable enough to warrant further study.

SUMMARY AND CONCLUSIONS

Research on fear-arousing appeals from 1953 through 1968 has yielded conflicting findings concerning the relative effectiveness of high versus low threat in persuasion. This research has also yielded some inconsistencies in attempting to determine what variables

may interact with fear level to cause low fear to be more effective in some situations and high fear to be more effective in other situations. From the research reviewed in the present paper, the author feels that the following conclusions concerning the present state of knowledge are justified:

1. The widely cited conclusion that high fear arousal creates a defensive-avoidance reaction which causes high threat to be less persuasive than low threat is not true in most situations. Most relevant research has indicated that high threat is superior to low threat in persuasion.

2. The nature of the recommendations has been the subject of considerable study. The specificity and ease of implementation of the recommendations appear to increase the effectiveness of a fear appeal, regardless of the level of fear. Efficacy may also be important as a main effect but has received only weak support as interacting with fear level. Positioning of the recommendations relative to the threat within the communication does not appear to be important.

3. Responses to fear arousal differ among individuals. Characteristics of the recipients which may influence how they respond to fear appeals include self-esteem, coping style, and feelings of vulnerability to danger. Chronic anxiety level has been suggested as an important variable, but its interaction with fear level is not supported by research findings.

4. High fear arousal appears to be more effective than low fear arousal when the message source is perceived by the recipients as highly credible.

5. There is apparently no differential learning of the factual materials in high- and low-threat communications.

6. The available evidence on the interest value of high fear is not consistent. Further research may help in determining the situations in which high fear may arouse interest and the situations in which high fear may depress interest.

One conceptual consideration and four methodological considerations were suggested as sources of the inconsistency in the findings on fear appeals: (a) the nature and the objects of the “fear” in different studies, (b) the diversity in topics, (c) the diversity in

subjects, (d) the variability in media of presentation of the communications, and (e) the differences among studies in criteria of persuasive effectiveness.

Despite the considerable amount of research in the area of fear appeals, Miller (1968) has suggested that "the surface of the fear-arousal problem has only been scratched [p. 270]." In making this observation he may inadvertently be hinting at one reason we know so little for certain after so much research. Many researchers in the area have only been "scratching" at the problem, conducting one or two studies in which they manipulate and measure what they interpret as "fear," and perhaps using whatever subjects, topic, and media may be most convenient at the time. Few researchers have settled down to dig a little more into the problem, the only really concerted efforts at a program of study in the area being that of Leventhal and his associates. The result of so many researchers scratching at the problem is the diversity in topics, subjects, media, and criteria which makes interpretation and comparison across studies difficult.

Future research should do a little less scratching on the surface of the problem and a little more digging in one place. Such digging would involve at least two considerations: First, if one is interested in testing the findings of a particular study (i.e., replication), he should vary only the variable of interest and not also use a different topic, subjects, medium, and/or criterion. Second, if one wishes to do research which may be meaningfully compared with previous research, he should consider using a topic, subjects, medium, and criterion used in several previous studies (unless, of course, his main interest is in one of these as the dependent variable), so that his results can be compared with the results of other studies. It is true that added generality may be given to a finding if it is replicated in a different context, but when different results are obtained in different contexts the cause is difficult to interpret.

What the author is suggesting is similar to the suggestion of Dabbs and Leventhal (1966) that fear appeals differ along a large number of different dimensions, and that

with such confounding it is impossible to attribute increases in attitude change solely to increases in fear. This is an inherent difficulty when fear is manipulated by the use of differing descriptions of danger. Another approach should be developed by anyone wishing to manipulate fear independently of other aspects of a persuasive communication [p. 53].

What Dabbs and Leventhal have suggested concerning the threat communication itself, the present author suggests should also be applied to the other situational variables involved in any study on fear appeals.

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(Received February 12, 1969)