Current Issues and Research in Advertising, vol. 11 (1988, #1), 21-40
To link to this article: https://doi.org/10.1080/01633392.1988.10504926

Fear Appeals and Persuasion:
Assumptions and Errors in Advertising Research

Herbert Jack Rotfeld

"Mixed" findings from past research of high fear not always being more persuasive than lower fear communications are explained by suggesting that researchers might have been incorrect in assuming that a certain type of message would always engender the greatest degree of fear with all subjects. The oft-repeated "optimal level of fear" for persuasion is not a supported theory that explains such findings but a data artifact, resulting, in part, from unquestioned assumptions. Seeking applications, not questioning past research assumptions and being inspired by misperceptions of psychology data and theories, many advertising researchers have sought the chimera of "best" literal fear communications.

Introduction

Research by advertising scholars on fear appeals and persuasion has drawn heavily on findings in psychology and related fields, or, rather, their oft-repeated perceptions of those findings. In general, reviews of fear appeal data for advertising research have concluded either that there is an "optimal level of fear" to maximize persuasive power, or, after listing a handful of studies, that past research data are "mixed." Research based on these reviews has, in turn, sought copywriter guidelines for an optimal level of fear.

This implies three inter-related assumptions and errors in the use of fear appeal concepts and theories in advertising research.

The first and most basic error, not confined to advertising research, has been the unquestioned acceptance of all past data as valid assessments of subjects' responses to different amounts of fear. Data findings and conclusions are often reviewed, but assumptions behind those data are not questioned. Mixed re-

The author wishes to thank Arno Rethans, Kim Rotzoll and Tom Leigh for their extensive comments on earlier drafts of this manuscript, and Sharon Stenzler for research assistance.

search findings on whether or not higher degrees of fear create stronger appeals would be resolved by revealing that the consequences portrayed in some high fear communciations might not have engendered greater subject fear than the lower fear messages.

Second, even though numerous thorough literature reviews have illustrated that the concept of an "optimal level fear" for persuasion has not been supported by data, the notion continues to be repeated, discussed and tested in marketing and advertising journals as if it were the prevailing theoretical explanation. While a hypothetical inverted-U relationship between amount of fear and persuasion has repeatedly been shown to be an inadequate explanation for past data, many advertising researchers cling to its validity and assert its support is "equivocal."

Third and more pragmatic, while data and resulting theory on fear and persuasion have mostly been gathered by psychologists seeking to understand the role of fear in human behavior, advertising researchers have blindly presumed that the data and theories all apply to mass media contexts.

As a logical result of these three errors, many advertising researchers have sought the single fear appeal form that would be the most persuasive, guidelines for message tactics that would work "in general." Although basic communication theory indicates no one claim or appeal should ever be expected to engender the greatest degree of persuasion for all audiences, assumptions and errors have helped inspire a body of research that implicitly assumes just that.

What follows is a strong perspective of cautions when using behavioral science findings indiscriminately in marketing. Some sections might already be known to readers who are extremely familiar with the fear appeal literature, but the nature of the topic is such that virtually everyone in advertising research has a smattering of knowledge and (mis)information on the topic.

Decades of Data Collection

Research has attempted to ascertain how fear appeals may influence behavior in diverse areas such as dental hygiene [Dembroski, Lasater and Ramirez 1978; Evans *et al.* 1970; Janis and Feshbach 1953; 1954; Leventhal and Singer 1966], life insurance selection [Wheatley and Oshikawa 1970], attitudes toward auto safety issues [Berkowitz and Cottingham 1960; Leventhal and Niles 1964], preventive medicine against roundworm infestation [Chu 1966], attitudes toward the energy crisis [Haas, Bagley and Rogers 1975], tetanus inoculations [Dabbs and Leventhal 1966; Leventhal, Jones and Trembly 1966], cigarette smoking [Beck and Davis 1978; Insko, Arkoff and Insko 1965; Janis and Terwilliger 1962; Spelman and Ley 1966], preventing eye damage during a solar eclipse [Krause, El-Assal and DeFleur 1966] and selection of a health maintenance organization [Burnett 1981; Burnett and Oliver 1979; Burnett and Wilkes 1980].

However, the basic experiment situation has been fairly standard. Comparable groups of subjects are shown what the researcher determines are high, medium, and/or low fear communications. The main measurements seek correlations between exposure to the different persuasive messages and changes in subjects' attitudes and/or behavior.

A few studies found the greatest degree of subject persuasion for the test message with the lowest level of fear [e.g. Janis and Feshback 1954]; other studies found high fear to be best [e.g. Beck and Davis 1978]. Data from some studies indicate that the "amount of fear" in the persuasive message is an irrelevant variable in predicting listener "conformity to message recommendations" [e.g. Wheatley 1971; Wheatley and Oshikawa 1970; also see discussions in: Adler and Pittle 1984; Beck and Frankel 1981; Duke 1967; Higbee 1969; Leventhal 1971; 1970; Ray and Wilkie 1970; Sutton 1982].

For over three decades, numerous researchers have theorized and tested variables that might have caused the lower fear levels to be more persuasive in some instances. As can be seen from a partial review of the studies, the data fail to consistently support any one theoretical explanation.

One hypothesis was that higher levels of fear would be more persuasive *if* subjects were certain the recommendations would actually prevent the feared harm. Chu [1966] found strong fear messages to increase in persuasive power as the anti-roundworm drug was said to be more effective. However, Dabbs and Leventhal [1966] found that subjects' beliefs about tetanus inoculation effectiveness did not influence their reactions. Other studies also failed to find format or strength of recommendations to influence reactions to dental hygiene messages [Evans *et al.* 1970; Leventhal and Singer 1966].

Hewgill and Miller [1965] found greater acceptance of the recommendations with high source credibility, but graduate theses replications reported in the literature did not find any such relationship.

Goldstein [1959] found that individuals determined to possess high self-esteem were more readily persuaded by the high fear messages. On the other hand, Leventhal and Perloe [1962] found self-esteem had a negative relationship with fear-strength and persuasion. Some studies found that subjects' perceived vulnerability to disease tended to interact with the reactions to the fear level of the anti-smoking message [e.g. Leventhal and Watts 1966], but Leventhal and Singer [1966] did not find a significant relationship.

Intuitively, strong fear appeals would be more persuasive if subjects were grouped in terms of the topic's "relevance." Berkowitz and Cottingham [1960] defined relevance to subjects of seat belt appeals by subjects' frequency of car use. Other studies defined "relevance" in various ways: for tetanus shots, relevance meant the subjects have not had a shot [Leventhal, Jones and Trembly 1966; Leventhal, Singer and Jones 1965; Radelfinger 1965]; for cigarette smoking, relevance meant amount of smoking, "heavy," "light" or "non" [Leventhal and Niles 1964; Leventhal and Watts 1966]. Findings on the influ-

ence of this variable have been mixed, possibly for reasons related to the problems of defining the terms (and, as seen in the next section, similar to problems of defining "fear").

The above are representative of the "most cited" research on fear appeals; a more extensive listing would devolve into a vapid checklist. These should be adequate to reveal the continuing problems of reconciling contradictions in past research findings.

Error #1: Degree of Threat $\neq$ Degree of Fear

The reason for mixed research results could logically be seen as a function of findings on researchers' definitions of fear: subjects in some studies might not have been most afraid of the consequences portrayed in high-fear messages. In other words, the reason some studies did not find "high fear" to be more persuasive than lower fear experimental communications might lie in Higbee's [1969] off-handed (and subsequently ignored) comment that the experiments might not have been measuring responses to fear.

As part of a theory on fear appeals, Rogers and Mewborn [1976] state that the degree of fear in an appeal is directly related to "the magnitude of noxiousness of a depicted event" [also discussed in Rogers 1975]. In other words, they define the degree of fear as synonymous with the severity of a threat. While not all researchers explicitly accept Rogers' theories, the validity of assertions that greater threats engender greater fear has almost always been implicitly presumed. In the majority of studies, depictions of greater degrees of injury or greater quantities of the gross details of disease or death are simply presumed to cause the greater levels of fear in the subjects.

For example, safe driving or seat belt usage studies often show the subjects movies of traffic accidents, the variation among treatments being length of exposure, more "fear" meaning more exposure to blood and gore [e.g. Leventhal and Niles 1964]. Other studies showed high fear films of the gory aftermath of numerous collisions, including groans and scenes of mutilations, set against low fear films of car maintenance or dummies in accidents [e.g. Griffeth and Rogers 1976; Leventhal and Trembly 1968; Rogers and Mewborn 1976]. One study used ten color slides, "some showing gruesome car accidents," against low fear materials of cartoon slides and "emotionally neutral information" on seat belts [Berkowitz and Cottingham 1960]. Another used a film of a near collision as the low fear, medium fear presented films of events leading up to an accident in which people died and high fear used films of the medium fear accident, plus visuals and sounds after the crash [Kohn *et al.* 1982].

In anti-smoking studies, the higher fear appeals often involved "graphic depiction of a lung operation in vivid color." Moderate or low fear is typically shown by films of a man discovering he has lung cancer caused by smoking. A lower fear stimulus, if used, would often be a film showing a person talking

with reference to charts or perhaps a set of pamphlets on cancer instead of a film [for example, see: Beck and Davis 1978; Leventhal and Niles 1964; Leventhal and Watts 1966; Leventhal, Watts and Pagano 1967; Rogers and Deckner 1975; Rogers and Mewborn 1976]. One study used pictures of diseased body tissues for both low and high fear communciations, the former in black and white and the latter in color [Insko, Arkoff and Insko 1965].

Similarly, in studies on dental care, high fear used color slides of decay and disease with frequent references to pain and suffering. Low fear showed decay by use of models of teeth, not actual mouths, with reference to a person's discomfort, not pain [e.g. Janis and Feshbach 1953; 1954; Ramirez and Lasater 1977].

Maybe, "as any fool can plainly see," death is more feared than stubbing a toe. However, to high school students (a common subject for these studies) lung cancer, gum disease or near-fatal injury might not be realistic possibilities. Fear of social disgrace could be a stronger fear appeal for them. Scenes of blood and gore may engender nausea or distress, but not necessarily fear of portrayed outcomes as something to take steps to avoid. Past research findings might be mixed because the subjects disagreed with researchers as to what was most fearful.

For example. Evans *et al.* [1970] found that the messages they labeled "positive" were more influential than the high or low fear appeals. However, the description of the positive message implied that a person might be unpopular if he or she did not practice good dental hygiene. This social threat could logically be a much more dreaded outcome for the teen-aged subjects than the physical threats in the researcher-designated high and low fear appeals.

Though not studying fear appeals and persuasion, Canton and Sparks [1984] illustrated this problem with their survey of parents asking which specific elements of the media they felt caused their children to experience fear. Very broadly, children of different ages were found to fear different things.

In other words, there exists a basic problem with prior studies. The "levels of fear," the core of virtually all research on fear appeals and persuasion, has been a very loose concept, depending mostly on intuitive and *ad hoc* delineation. Even when questioning past definitions, the researchers still retain an intuitive belief that the generation of subject discomfort is fear. For example, using circular logic, Haas, Bagley and Rogers [1975] defined fear *a priori* as a function of noxiousness of portrayed outcomes, so the check was a set of attitude measures on perceived severity of outcomes. (In another study [Mewborn and Rogers 1979], physiological measures of stress were used in addition to subject self-reports).

It seems that this research tradition has ignored the nuance of Janis and Milholland's [1954] statement that threat appeals are *"likely* to stimulate at least a mild degree of emotional tension *and may sometimes* elicit intense fear" (emphasis added).

Kreshel's review of emotion research cited Janis and Terwilliger [1962] as "one of the few instances in which an independent assessment of 'fear arousal' was made" [1984, p. 25]. They simply observed subjects' reactions during exposure to the materials, spotting more "disturbance responses" to high threat than to other items. Similarly, Sigall and Helmreich [1969] reported that subjects in their "high stress situation" appeared tense and verbally expressed apprehension.

It is uncertain if these approaches yield a valid measurement of fear, but other tests reported, while more precise, offer little or no support for their validity. Rarely have the exact nature, relevance and/or validity of the tests been clearly explained.

Leventhal and Trembly [1968] used two motion pictures that they stated were "pretested for the emotional qualities they created," though the nature of the pretest was not elucidated. Using messages about eye damage during a solar eclipse, Kraus, El-Assal and DeFleur [1966] stated that they judged messages about "complete blindness" and "burning eyes out" to be high fear appeals and that "interviews . . . supported these subjective conclusions." How they were supported was not explained.

A common method to check on fear arousal has been some type of self report [e.g. Miller and Hewgill 1966; Robbins 1962a; 1962b]. Powell [1965] asked subjects whether they felt "concerned about safety" after hearing the speeches on fallout shelters. Horowitz [1969] and Horowitz and Gumenik [1970] used a 10-point self-report questionnaire asking "it did not effect me" or "it made me very concerned and upset" at the other extreme.

Some studies utilized a fear-check measurement that possessed some face validity, but background rationales were omitted. They measured differences in reactions to the communications, but it is unclear if the differences were fear. Nomikos *et al.* [1968] measured physiological stress. Wheatley and Oshikawa [1970] used Saradon's Lack of Protection Test; Fischer *et al.* [1967] used the Taylor Manifest Anxiety Test.

While these experiments tested degrees of differential responses, it was never established that such responses were fear unless it is accepted as synonymous with noxiousness or stress (and numerous theories assert that it is not) [see: Hamilton 1979; Janis and Milholland 1954].

Some researchers merely assert as their reference to authority that the manipulation tests or communications materials were used in previous studies.

For example, Rogers and Thistlethwaite [1970] state that their high and low fear materials are "the same as those found to be differentially arousing in several previous experiments" (citing Leventhal and Niles [1965] and Leventhal and Watts [1966], among others). Similarly, their test, a nine-point scale asking the extent to which each of six moods characterized subjects' feelings (fright, tension, nervousness, anxiety, discomfort and nausea), referred the same use-history as authority. (This scale and rationale was also used by Grif-

feth and Rogers [1976] and Rogers and Mewborn [1976]. None mention research on whether the scales validly measure fear. (This is also a problem in other types of experiments involving latent independent variables [see: Perdue and Summers 1986].)

Discussing another area of psychological testing, Dershowitz pointed out "It must never be forgotten that many years of experience administering an untested system will not always increase the accuracy of that system. . . . The unknown mistake of the past becomes the foundation for a confident, but erroneous, prediction for the future" [1971, p. 317].

It should also be noted that differences in subject reactions to the levels of fear were not significant in some studies; the researchers report that the "manipulation of fear was not successful" [e.g. Beck and Davis 1978]. However, such a research failure does not seem to be a hindrance to the findings being reviewed and repeated without mention of the failed manipulation check that might weaken generalizations.

Furthermore, most studies only report the mean responses of fear measurement for each experimental treatment cell. It is difficult to judge with certainty, but in some experiments, there appears to exist considerable variation in the fear resposes within each cell and some overlap in degree of fear responses between cells. (The technical definition of "overlap" in psychometric research greatly understates this, since it refers to the proportion of one group whose scores exceed the *median* score of the other.) In other words, some of the subjects in the low-fear group might be found more fearful than some of the subjects who viewed the hgh-fear messages, assuming, of course, that the manipulation check was measuring fear.

Boster and Mongeau reported that of all research conducting such internal tests, "The mean fear manipulation-perceived fear correlation, $r = .36$, indicates that, in the main, researchers do not create strong fear appeal manipulations" [1984, p. 362]. However, while concluding that the solution would simply entail more and better copy testing and advance planning of research materials, they later noted, "It is not clear exactly what features of a persuasive message are fear arousing" [p. 370].

Boster and Mongeau saw the problem but seemed to miss the solution. The research errors were more basic than copytesting needs. The psychological literature seems to have an often-admitted difficulty defining fear and distinguishing fear from anxiety [Hamilton 1979, p. 385–389]. In each study, the definitions of fear and its relationship to other psychological or emotional concepts depends on the basic paradigm-perceptions of the theorists. While these implicit problems with fear definitions are intuitively obvious, various literal fear appeals in persuasion research have been assumed to possess a ubiquitous potential impact of unquestioned or obvious nature.

While research actually tested responses to varying degrees of threat, operationally defined as varying degrees of physical harm, the theory and discussions

have presumed that the materials were actually varying degrees of "fear-arousing communications," generating degrees of subject fear as delineated by the different treatment groups [e.g. Beck and Davis 1978; Krisher, Darley and Darley 1973; Leventhal 1967; 1970; 1971; Radelfinger 1965; Robbins 1962a; Rogers and Thistlethwaite 1970]. Research has not progressed beyond the Nunnally and Bobren's [1959] apparently intuitive pronouncement that a message has "relatively high anxiety if it pictures people in physical danger, pain, fear and embarrassment. It is said to have relatively low anxiety if it does not picture people in physical danger, pain, fear and embarrassment."

This is not to assert that all fear definitions ever used are worthless. However, past research has, for the most part, not studied fear appeals, but rather, what should more properly be designated as appeals *to* fear. There exists great variety in the research definitions of fear as well as in the tests of the fear manipulation and, when used, the latter almost all share a lack of measurement validation. Theories attempt to account for unexpected data, but, lacking a consistent, tested and valid definition, since different people fear different things, past assumptions and inconsistent manipulation tests make variable data a virtual certainty.

Error #2: The Dogma of the "Inverted-U"

Brief summaries of fear appeal research are commonly found in general college texts on consumer behavior or mass communciations research [e.g. Engel and Blackwell 1982; Tan 1981] and colleagues often reveal that the outstanding "fact" that almost everyone remembers from a general course on buyer behavior is that there is some optimum level of fear that should be generated in a target audience for maximum persuasion power in the communications. It appears in many texts as one of the few certainties of consumer behavior findings [e.g. Hawkins, Best and Coney 1983], sometimes with a graph of an inverted-U as a primary illustration [e.g. Percy and Rossiter 1980]. New articles in the advertising literature repeatedly assert that support for the hypothesis is, at worst, equivocal.

However, since the late 1960s, extensive literature reviews and meta-analysis of past data have repeatedly failed to find the inverted-U as a potentially meaningful or valid explanation for why the high fear treatment was not always most persuasive.

There exist numerous literature reviews on fear appeals that attempt to summarize past findings or support new theories [e.g. Beck and Davis 1978; Boster and Mongeau 1984; Higbee 1969; Leventhal 1970; McGuire 1977; 1966; Miller 1963; Miller and Hewgill 1966; Ramirez and Lasater 1977; Spence and Moinpour 1972; Sternthal and Craig 1974; Sutton 1982; Wheatley 1971]. There even exists a review of theories and concepts on fear appeals as presented in

the writings of the ancients, such as Aristotle and Cicero [Sussman 1973]. All these reviews—except, of course, for Sussman—address the possible validity of what they perceive as the popular wisdom, the "optimal level of fear" as a theory to explain past research data. Yet their conclusions consistently rejecting that theory have been basically the same for 20 years [e.g. Duke 1967; Higbee 1969; Leventhal 1970].

It is not intended herein to repeat at great length what has been exhaustively described so many times before: numerous thorough literature reviews or meta-analyses since 1970 failed to find support for the inverted-U as a mass communications phenomenon. Reviews of past research repeatedly conclude that increases in fear are generally associated with changes in behavior, attitudes or intentions, though the relationships are sometimes quite small and less definitive for behavior than intentions [e.g. Beck and Frankel 1981; Leventhal 1971; 1970; Sutton 1982; Boster and Mongeau 1984]. As early as two decades ago, Duke [1967] pointed out how the original studies seen as supporting the inverted-U [Janis and Feshbach 1953; 1954] have been overgeneralized in the literature.

Yet discussion of Miller's [1963] view that people resist strong fear messages or repetition of the various curvilinear hypotheses [e.g. Janis 1967; Janis and Leventhal 1968; McGuire 1966] remain quite common in the marketing and advertising literature.

It is unclear why the inverted-U has retained such loyalty in advertising research, yet there exist some strong adherents. With religious fervor, journal reviewers and authors consider inadequate the arguments relying upon past rejections in numerous other detailed articles, including some by the theory's original proponents [e.g. Leventhal 1970; 1971], plus recent meta-analyses [e.g. Boster and Mongeau 1984].

In a typical brief summary of fear appeals found in the advertising literature, Gelb, Hong and Zinkham [1985] note that the "findings are not consistent. The most controversial point is the relationship between the level of fear and the amount of persuasion; that is whether . . . persuasion increases with higher fear level, or whether it is a nonmonotonic relationship in which persuasion increases with low to moderate fear conditions but decreases with higher fear level. Recent studies are not unanimous in this respect."

Actually, the concern in the psychology journals centers on the various theories that attempt to reconcile inconsistencies in past data. There might exist a controversy over explanations of why the lower fear conditions were the most persuasive in some experiments, but not whether certain findings are more "correct" than others. Gelb, Hong and Zinkham transform a theoretical explanation for diverse data as an expectation of "correct" data and that might help explain the popularity of the inverted-U. Presenting a statement of expected outcomes, it lends itself to direct copytesting procedures. As long as

some experiments find lower fear levels as more persuasive, the theory's adherents can still point to "some" support [e.g., see "defense" of the inverted-U in Ray and Wilkie 1970].

But the fact remains that, when subjected to thorough analysis, the inverted-U explanation repeatedly fails to prove adequate. Most recently, Sutton's [1982] extensive review found a score of experiments that conducted direct assessments of the inverted-U hypothesis and only two of those showed an inverted-U-shaped pattern in response to significant increases in the fear variable [Janis and Feshbach 19853; Krisher, Darley and Darley 1973]. Similarly, Boster and Mongeau's [1984] meta-analysis could not find support for any of the curvilinear hypotheses.

Error #3: Presumptions of Data Relevance

The first two errors would be sufficient to cause several problems in conceptualizing new research. However, another factor contributing to a misdirection of advertising research is the failure to observe that many experimental contexts and communications materials described in social science journals are far removed from what consumers encounter in real world interactions with advertising and mass media [see discussion in Preston 1985]. The studies were designed and executed with the goal of understanding fear in human motivation, *not* its potential influence in mass communications and use for advertising appeals.

Originally, fear was seen as a drive, similar to hunger. Miller [1948] discussed animal-behaviorist studies that used electric shock treatments as punishment animals would wish to avoid. The fear of punishment served as a drive, a motive for the animals to learn information. In parallel human studies, Darley [1966] defined fear as a threat of future electric shocks, testing whether or not it influenced persuasion. Krisher, Darley and Darley [1973] manipulated subject fear by providing false bio-feedback information on heart rate.

While there remains a desire to be able to make broad applications of animal research to human behavior, to take a "ratamorphic" view of humans, people's fear responses were found not to be one-dimensional. The research goal then became to discern how possible mental constructs might interact with fear and influence learning, attitude change or changes in behavior.

For example, Janis [1968] discussed how a surgery patient's pre-operative level of fear influenced post-operative recovery. Patients who were moderately fearful asked more questions and were, in general, better informed about what to expect; after the operation, they slept better and had few complaints. The low-fear patients were not motivated to ask questions; the high fear patients, verging on neurotic, were incapable of developing realistic expectations [also see: Leventhal 1967]. Schwarz, Servay and Kumf [1985], testing whether subjects' ability to attribute nervousness to something other than the commu-

nications messages influences the degree of attitude change, gave subjects a placebo and told them it would be either arousing, tranquilizing, or have no side effects. Other studies manipulated subjects' perceived vulnerability to disease by having them engage in role-playing as cancer patients. [Janis and Mann 1965; Mann 1967; Mann and Janis 1968].

Psychologists sought some common human cognitive structure that can explain how and why people change attitudes and/or behavior. They did not wish to find if it was high or low fear that was most persuasive *per se*. The goal was to understand how people learn and the overall influences of communications on cognitive structures. They were seeking generalizations, sometimes looking to build upon animal research findings [see discussion in Miller 1948], sometimes raising functional concerns for the study of attitudes [e.g., see: Katz 1960].

It should also be noted that the first two decades of fear appeal research were based on balance or consistency attitude theories. Much of the research was trying to control ways the subject might attain cognitive balance in ways other than by paying attention to the communications' recommendations [e.g., see: Miller and Hewgill 1966].

This has two implications. First, some of the past research considered the fear manipulations almost secondary to concerns for how the subjects might have attained cognitive balance. Second, as modern attitude models discard the unsupported balance theories as a basis for research, prior data remain useful only in reference to how they might be reconceptualized to support, test or understand contemporary models.

Future theories and research conceptualizations need not consider all data and experiment conclusions in the literature. For advertising management concerns, some of it might be a distraction.

Searching for Universal ("Optimal") Fear

As a logical result of these three errors and assumptions, advertising research on fear appeals and persuasion could easily be described as eclectic data collection, attempts to discover which "level" of fear is best. Since past research presumed that "high threat" equaled "high fear" and, seeing all past data as applicable to advertising contexts, an adopted theory of an "optimal level of fear" indicated to advertising researchers that there might exist some optimal fear appeal form that could be discovered as most persuasive in sales contexts.

These problems and misdirections are easily seen with reference to research on fear appeals by public health researchers who made similar adoptions from social science data. Psychologists, looking for generalizable cognitive structures, sought variables that would be consistent across types of groups; public

health researchers simply wished to find if fear appeals could "work" [e.g., see discussion in: Kraus, El-Assal and DeFleur 1966]. It should not be surprising that discussion of public health concerns often discussed, not fear, but threats, and how they influence virtually everyone [Beck and Frankel 1981; Adler and Pittle 1984].

Public health officials are concerned only with effective campaigns. However, similar data gathered to study efforts to sell Bonds during World War II noted that "significant changes in behavior as a result of [public information] campaigns are the exception rather than the rule" [Cartwright 1949]. Such conclusions are equally valid for modern campaigns for many of the same reasons [Adler and Pittle 1984]. Regardless, public health researchers sought broad, general and direct effects, and advertising researchers have adopted these concerns as their own.

Experiments in advertising and marketing journals do not study the influence of fear on consumer responses to mass communications, but rather, the audience impact of appeals *to* fear. The studies are mostly copytests of limited generalizability, with conclusions restricted to saying what "worked" [e.g. Brooker 1981; Burnett 1981; Menasco 1981].

For example, Burnett and Wilkes [1980] tied audience research responses to fear appeal brochures for a health maintenance organization (HMO) to various audience segmentation variables. Segments who showed the greatest response to the high fear communication became the target customers for an extremely successful direct mail advertising effort using that appeal. However, the authors stressed that the same groups might not respond as well to high fear appeals for different medical services and might not respond the same even for another HMO. As stated in a related article, "[A] response to fear is probably specific to the situation, topic, person and criterion. Thus, the form of the relationship will vary across combinations of these four factors" [Burnett and Oliver 1979].

Obviously, the valid conclusions are limited: for some groups, in some cases, under some conditions, an appeal to fear might be most persuasive for some communications formats. Burnett and Oliver [1979] and Burnett and Wilkes [1980] present a copy test, an approach for selecting a creative strategy and for finding segments with whom it is optimal, but the results cannot be directly applied to other situations.

Of course, this type of research is not atypical. Many studies have compared different types of appeals to see which ones "work," such as appeals to humor [Brooker 1981] or to guilt [Bozinoff and Ghingold 1983; Yinon *et al.* 1976].

There might be value to a body of research that gave broad copywriting guidelines, not unlike that found in data from years of commercial syndicated readership studies. Yet fear appeal research methodologies are so varied and researcher idiosyncratic, such combinations are impossible [see discussion in Higbee 1969; Leventhal 1970; Rogers 1975]. In marketing and advertising,

each article limits discussion to how the fear appeals of the study can be effective or ineffective only in reference to the specific materials and audiences tested.

As Gould [1985, essay #9] notes about all scientific research, "We often think, naively, that missing data are the primary impediments to intellectual progress—just find the right facts and all problems will dissipate. But the barriers are often deeper and more abstract in thought. We must have access to the right metaphor, not only the requisite information. Revolutionary thinkers are not, primarily, gatherers of facts, but weavers of new intellectual structures."

To date, fear appeals in advertising research have yielded large amounts of data but minimal generalizable conclusions and no solid basis for new intellectual structures. After decades of data collection, it might now be important to ask what, if anything, this body of research might provide for future experiments and theory generation.

The Future?

At this time, since few have delved into issues of the definitions of fear, flaws or inconsistencies in those definitions and research assumptions would explain why no one theory has received general data support. This oversight, coupled with advertising researchers' canonization of the concept of an optimal level of fear and assumptions that all psychology data would be relevant to advertising concerns, has provided the impetus for research seeking a literal optimal "fear level" that would work best on all consumers.

Once the past "high fear" situations are more correctly recognized and labeled as "high threat," it can readily be seen that persuasion might always be maximized by generating the greatest degree of subject fear. The mixed findings of the past were not because there is an optimal level of fear for persuasion, but rather, because different people are most fearful of different things. Past research found high-fear *might* be more persuasive, with some people, under some conditions simply because researcher intuition cannot validly label high-fear or low-fear communications for all audiences. Burnett [1981], Burnett and Oliver [1979] and Burnett and Wilkes [1980] found sales success by discerning which segments were most fearful of possible appeals and making them the campaign targets.

The unresearched question remains how different responses of actual fear (as opposed to different levels of threat appeals *to* fear) influence attitudes and behavior with different individuals. With so little discussion of the nature of actual fear-engendering communications in the literature, with the concern with "degrees" of fear in the marketing and advertising literature defined as synonymous with degrees of threat, research has done little to propose or test

new theories, or, for that matter, give a basis to present an operational definition of fear.

Instead of testing different forms of threat materials and their respective correlates with attitude or behavior change, research might be better served by first defining and measuring fear and persuasion alone. While past research attempted to relate fear levels from the communications to attitude or behavior change, no one checked for direct correlations between reported degrees of fear found in the manipulation checks and persuasion. A possible direction for future research would be to present a single potentially fearful communications to a variety of subjects. Using a valid operational definition of fear, the primary measurement should entail correlations between different subjects' varying fear responses after exposure to that single communication form and their (a) changes in attitude and/or in behavior intentions, and (b) their classifications by various segmentation variables.

However, "levels of fear" actually might not be a meaningful concern, as opposed to how the mere presence of a fear-inducing message influences learning, attitudes and/or consumer decision-making. Before more data are gathered, researchers must ask how fear appeals might relate to current understanding of attitudes or other features of information processing. For example, subject fear, even when the source is irrelevant to communications, might increase attitude change [Simonson and Lundy 1966]. But then, is that a research question relevant for advertising concerns?

At this time, there should exist some doubts about fear appeals as providing useful or insightful research questions. After this review of past research, there remains a very important (but unasked) question. Should fear appeals be treated as a distinct research topic for theory generation?

After all these years, there does not exist a sound and supported theory about fear *per se*. Boster and Mongeau's [1984] and Sutton's [1982] meta-analyses of all past research attempted to apply the data to any and all extant theories. None were supported. Boster and Mongeau's recommendations for future research, however, amounted to more of the same, maybe with better pretesting of communications materials.

Sutton [1982], however, taking a broader view, theorized that fear should be "assumed to have no causal role in mediating the effects of fear-arousing communications . . . regarded merely as an epiphenomenon that may reflect in part the person's cognitions concerning the unpleasant consequences in question." In other words, at least in terms of advertising concerns, fear appeals might be a dead end as a distinct research topic.

Fear appeals are clearly one of the oldest areas of mass communications research, but data in the advertising literature have not aided in building a theory, instead providing little beyond a plethora of data piles, based upon misapplied and misunderstood (and sometimes archaic) theories lifted unquestioned from psychology journals.

REFERENCES

Adler, Robert S. and R. David Pittle (1984). "Cajolery or Command: Are Education Campaigns an Adequate Substitute for Regulation," *Yale Journal of Regulation* 1 (#2): 159–93.

Beck, Kenneth H. and Clive M. Davis (1978). "Effects of Fear-Arousing Communications and Topic Importance on Attitude Change," *Journal of Social Psychology* 104 (February): 81–95.

——— and Arthur Frankel (1981). "A Conceptualization of Threat Communications and Protective Health Behavior," *Social Psychology Quarterly* 44 (September): 204–17.

Berkowitz, Leonard & Donald R. Cottingham (1960). "The Interest Value and Relevance of Fear Arousing Communications," *Journal of Abnormal and Soial Psychology* 60 (January): 37–43.

Boster, Franklin J.and Paul Mongeau (1984). "Fear-Arousing Persuasive Messages," *Communications Yearbook 8*, Robert N. Bostrom, ed., Beverly Hills: Sage Publications: 330–75.

Brooker, George (1981). "A Comparison of the Persuasive Effects of Mild Humor and Mild Fear Appeals," *Journal of Advertising* 10 (4): 29–40.

Bozinoff, Lorne and Morry Ghingold (1983). "Evaluating Guilt Arousing Marketing Communications," *Journal of Business Research* 11 (June): 243–55.

Burnett, John J. (1981). "Internal-External Locus of Control as a Moderator of Fear Appeals," *Journal of Applied Psychology* 66 (June): 390–93.

——— and Richard L. Oliver (1979). "Fear Appeal Effects in the Field: A Segmentation Approach," *Journal of Marketing Research* 16 (May): 181–90.

——— and Robert E. Wilkes (1980). "Fear Appeals to Segments Only," *Journal of Advertising Research* 20 (October): 21–24.

Cantor, Joanne and Glenn G. Sparks (1984). "Children's Fear Responses to Mass Media: Testing Some Piagetian Predictions," *Journal of Communication* 34 (Spring): 90–103.

Cartwright, Dorwin (1949). "Some Principles of Mass Persuasion: Selected Finding of Research in the Sale of United States War Bonds," *Human Relations* 2 (July): 252–67.

Chu, G. (1966). "Fear Arousal, Efficacy and Imminency," *Journal of Personality and Social Psychology* 4 (November): 517–24.

Dabbs, J.M. and Howard Leventhal (1966). "Effects of Varying the Recommendations in a Fear-Arousing Communication," *Journal of Personality and Social Psychology* 4 (5): 525–31.

Darley, John M. (1966). "Fear and Social Comparisons as Determinants of Behavior," *Journal of Personality and Social Psychology* 4 (July): 73–78.

Dembroski, Theodore M., Thomas M. Lasater, and Albert Ramirez (1978). "Communicator Similarity, Fear Arousing Communications and Compliance with Health Care Recommendations," *Journal of Applied Social Psychology* 8 (July-September): 254–69.

Dershowitz, Alan M. (1971). "Preventive Detention," in *Crime, Law and Society*, Abraham Goldstein and Joseph Goldstein, ed., New York: Free Press.

DeWolfe, A. and C. Governals (1964). "Fear and Attitude Change," *Journal of Abnormal and Social Psychology* 69 (July): 119–23.

Duke, J.D. (1967). "Critique of the Janis and Feshbach Study," *Journal of Social Psychology* 72 (July): 71–80.

Engel, James F. and Roger D. Blackwell (1982). *Consumer Behavior*, 4th edition, Chicago: Dryden Press.

Evans, Richard I., Richard M. Rozelle, Thomas M. Lasater, Theodore M. Dembroski and Ben P. Allen (1970). "Fear Arousal, Persuasion and Actual Versus Implied Behavior Change; New Perspective Utilizing a Real-Life Dental Hygiene Program," *Journal of Personality and Social Psychology* 16 (2): 220–27.

Feshbach, S. and I.L. Janis (1954). "Personality Differences Associated with Responsiveness to Fear Arousing Communications," *Journal of Personality* 23: 154–66.

Fischer, Edward H., Stanley L. Cohen, Lawrence E. Schlesinger and Richard H. Bloomer (1967). "Some Effects of Relevant Stories Portraying Danger on Retention of Information Associated with the Stories," *Journal of Social Psychology* 73 (October): 75–87.

Frandsen, Kenneth D. (1963). "Effects of Threat Appeals and Media Transmission," *Speech Monographs* 30 (June): 101–4.

Gelb, Betsy D., Jae W. Hong and George M. Zinkham (1985). "Communications Effects of Specific Advertising Elements: An Update," *Current Issues and Research in Advertising 1985* 2: 75–98.

Goldstein, Michael J. (1959). "The Relationship Between Coping and Avoiding Behavior and Response to Fear-Arousing Propaganda," *Journal of Abnormal and Social Psychology* 59 (March): 247–52.

Gould, Stephen Jay (1985). *The Flamingo's Smile: Reflections in Natural History*, NY: W.W. Norton & Co.

Griffeth, Roger W. and Ronald W. Rogers (1976). "Effects of Fear-Arousing Components of Driver Education on Students' Safety Attitudes and Simulator Performance," *Journal of Educational Psychology* 68 (August): 501–6

Haas, Jane W., Gerrold S. Bagley and Ronald W. Rogers (1975). "Coping with the Energy Crisis: Effects of Fear Appeals Upon Attitudes Toward Energy Consumption," *Journal of Applied Psychology* 60 (December): 754–56.

Haefner, Don P. (1965). "Arousing Fear in Dental Health Education," *Journal of Public Health Dentistry* 25: 140–46.

Hamilton, Vernon (1979). "Information Processing Aspects of Neurotic Anxiety and the Schizophrenias," in *Human Stress and Cognition* Vernon Hamilton and David M. Warburton, ed., London: John Wiley and Sons.

Hawkins, Del I., Roger J. Best and Kenneth A. Coney (1983). *Consumer Behavior: Implications for Marketing Strategy*, Plano, TX: Business Publications, Inc.

Hewgill, Murray A. and Gerald R. Miller (1965). "Source Credibility and Response to Fear-Arousing Communication," *Speech Monographs* 32 (June): 95–101.

Higbee, K.L. (1969). "Fifteen Years of Fear Arousal: Research on Threat Appeals: 1953–1968," *Psychological Bulletin* 72 (6): 426–44.

Horowitz, Irwin A. (1969). "Effects of Volunteering, Fear Arousal, and Number of Communications on Attitude Change," *Journal of Personality and Social Psychology* 11 (January): 34–37.

_____ and William E. Gumenik (1970). "Effects of the Volunteer Subject, Choice, and Fear Arousal on Attitude Change," *Journal of Experimental Social Psychology* 6 (July): 293–303.

Hovland, Carl I., Irving L. Janis and Harold H. Kelley (1953). *Communication and Persuasion*, Hew Haven: Yale University Press.

Insko, Chester, Abe Arkoff and Verla M. Insko (1965). "Effects of High and Low Fear-Arousing Communications upon Opinions Toward Smoking," *Journal of Experimental Social Psychology* 1 (August): 256–66.

Janis, Irving L. (1967). "Effects of Fear Arousal on Attitude Change: Recent Developments in Theory and Experimental Research" in *Advances in Experimental Social Psychology* 3, L. Berkowitz, ed., New York: Academic Press: 166–224.

_____ (1968). "When Fear is Healthy," *Psychology Today* 1 (April): 46–48, 60, 61.

Janis, Irving and S. Feshbach (1953). "Effects of Fear-Arousing Communications," *Journal of Abnormal and Social Psychology* 48 (January): 78–92.

_____ and S. Feshbach (1954). "Personality Differences Associated with Responsiveness to Fear-Arousing Communications," *Journal of Personality* 23 (December): 154–66.

Janis, Irving and P. Field (1958). "Sex Differences and Personality Factors Related to Persuasibility," *Personality and Persuasibility* in C. Hovland and I. Janis, eds., New Haven: Yale University Press.

Janis, Irving L. and H. Leventhal (1968). "Human Reactions to Stress," in *Handbook of Personality Theory and Research*, E. Borgatta and W. Lamberts, eds., Boston: Rand McNally and Co.

_____ and Leon Mann (1965). "Effectiveness of Emotional Role-Playing in Modifying Smoking Habits and Attitudes," *Journal of Experimental Research Personality* 1 (October): 84–90.

_____ and Harry C. Milholland, Jr. (1954). "The Influence of Threat Appeals on Selective Learning of the Content of a Persuasive Communication," *Journal of Psychology* 37 (January): 75–80.

_____ and Robert F. Terwilliger (1962). "An Experimental Study of Psychological Resistances to Fear-Arousing Communications," *Journal of Abnormal and Social Psychology* 65 (6): 403–10.

Katz, Daniel (1960). "The Functional Approach to the Study of Attitudes," *Public Opinion Quarterly* 24 (Summer): 163–204.

Kohn, Paul M., Michael S. Goodstadt, Gaynoll M. Look, Margaret Sheppard and Godwin Chan (1982). "Ineffectiveness of Threat Appeals About Drinking and Driving," *Accident Analysis and Prevention* 14 (December): 457–64.

Kraus, Sidney, Elaine El-Assal, and Melvin L. DeFleur (1966). "Fear-Threat Appeals in Mass Communication: An Apparent Contradiction," *Speech Monographs* 33 (March): 23–29.

Kreshel, Peggy J. (1984)."Emotion and Advertising: The 'Grande Idée' of the 80's," Advertising working paper #17 (November) Urbana, IL: University of Illinois Advertising Department.

Krisher, Howard Penn, Susan A. Darley and John M. Darley (1973). "Fear-Provoking Recommendations, Intentions to Take Preventive Actions and Actual Preventive Actions," *Journal of Personality and Social Psychology* 26 (May): 301–8.

Lawton, M. Powell (1962). "Psychosocial Aspects of Cigarette Smoking," *Journal of Health and Human Behavior* 3 (Fall): 163–70.

Leventhal, Howard (1971). "Fear Appeals and Persuasion: The Differentiation of a Motivational Construct," *American Journal of Public Health* 61 (June): 1208–24.

_____ (1965). "Fear Communications in the Acceptance of Preventive Health Practices," *Bulletin of the New York Academy of Medicine* 41: 1144–68.

——— (1967). "Fear—For Your Health," *Psychology Today* 1 (September): 54–58.

——— (1970). "Findings and Theory in the Study of Fear Communications," in *Advances in Experimental Social Psychology* 5, L. Berkowitz, ed., New York: Academic Press, 119–86.

——— Susan Jones and Grevilda Trembly (1966). "Sex Differences in Attitude and Behavior Change Under Conditions of Fear and Specific Instruction," *Journal of Experimental Social Psychology* 2 (4): 387–99.

——— and Patricia Niles (1964). "A Field Experiment of Fear-Arousal with Data on the Validity of Questionnaire Measures," *Journal of Personality* 32 (September): 459–79.

——— (1965). "Persistence of Influence for Varying Durations of Exposure to Threat Stimuli," *Psychological Reports* 16 (February): 223–33.

——— and Sidney I. Perloe (1962). "A Relationship Between Self-Esteem and Persuasibility," *Journal of Abnormal and Social Psychology* 64 (June): 385–88.

——— and Robert Paul Singer (1966). "Affect Arousal and Positioning of Recommendations in Persuasive Communications," *Journal of Personality and Social Psychology* 4 (February): 137–46.

——— Robert Singer and Susan Jones (1965). "Effects of Fear and Specificity of Recommendation Upon Attitudes and Behavior," *Journal of Personality and Social Psychology* 2 (1): 20–29.

——— Grevilda Trembly (1968). "Negative Emotions and Persuasion," *Journal of Personality* 36 (March): 154–68.

——— and Jean C. Watts (1966). "Sources of Resistance to Fear Arousing Communications on Smoking and Lung Cancer," *Journal of Personality* 34 (June): 155–75.

——— Jean C. Watts and Francia Pagano (1967). "Effects of Fear and Instructions on How to Cope with Danger," *Journal of Personality and Social Psychology* 6 (3): 313–21.

Mann, Leon (1967). "The Effects of Emotional Role-Playing on Desire to Modify Smoking Habits," *Journal of Experimental Social Psychology* 3 (October): 334–48.

——— Mann, Leon and Irving L. Janis (1968). "A Follow-Up Study on the Long Term Effects of Emotional Role-Playing," *Journal of Personality and Social Psychology* 8 (4): 339–42.

McGuire, W.F. (1977). "Attitudes and Opinions," *Annual Review of Psychology* 17: 475–514.

McGuire, William J. (1966). "Personality and Susceptibility to Social Influence" in *Handbook of Personality Theory and Research,* E. Borgattan & W. Lambert, eds., Chicago: Rand McNally.

Menasco, M. (1981). "Threats and Promises in Advertising Appeals," *Advances in Consumer Research* Vol. IX, A.A. Mitchell, ed., Ann Arbor, MI: Assoc. for Consumer Research: 221–27.

Mewborn, C.R. and 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 (3): 242–53.

Miller, Gerald R. (1963). "Studies on the Use of Fear Appeals: A Summary and Analysis," *Central States Speech Journal* 14 (May): 117–25.

——— and Murray A. Hewgill (1966). "Some Recent Research on Fear-Arousing Message Appeals," *Speech Monographs* 33 (November): 377–91.

Miller, Neal E. (1948). "Studies of Fear as an Acquirable Drive: Fear as Motivation and Fear Reduction as Reinforcement in the Learning of New Responses," *Journal of Experimental Psychology* 38 (February): 89–101.

Nomikos, Markellos L., Edward Opton, James R. Averill, and Richard S. Lazarus (1968). "Surprise Versus Stress in the Production of Stress Reaction," *Journal of Personality and Social psychology* 8 (2): 204–8.

Nunnally, Jum C. and Howard M. Bobren (1959). "Variables Governing the Willingness to Receive Communications on Mental Health," *Journal of Personality* 27 (March): 38–46.

Percy, Larry and John R. Rossiter (1980). *Advertising Strategy: A Communication Theory Approach*, New York, Praeger Publishers.

Perdue, Barbara C. and John O. Summers (1986). "Checking the Success of Manipulation in Marketing Experiments," *Journal of Marketing Research* 23 (November): 317–26.

Powell, Frederic A. (1965). "The Effects of Anxiety-Arousing Messages When Related to Personal, Familial and Impersonal Referents," *Speech Monographs* 32 (June): 102–6.

Powell, Frederic and G. Miller (1967). "Social Approval and Disapproval Cues in Anxiety-Arousing Communications," *Speech Monographs* 34 (June): 152–59.

Preston, Ivan L. (1985). "The Developing Detachment of Advertising Research from the Study of Advertisers' Goals," *Current Issues and Research in Advertising 1985* 1: 1–16.

Radelfinger, Sam (1965). "Some Effects of Fear-Arousing Communications on Preventive Health Behavior," *Health Education Monographs* (#19): 2–15.

Ramirez, Albert and Thomas M. Lasater (1977). "Ethnicity of Communicator, Self-Esteem and Reactions to Fear-Arousing Communications," *Journal of Social Psychology* 102 (June): 79–91.

Ray, M. and W. Wilkie (1970). "Fear: The Potential of an Appeal Neglected by Marketing," *Journal of Marketing* 34 (January): 54–62.

Robbins, Paul R. (1962a). "An Application of the Method of Successive Intervals to the Study of Fear-Arousing Information," *Psychological Reports* 11 (December): 757–60.

——— (1962b). "Self-Reports of Reactions to Fear-Arousing Information," *Psychological Reports* 11 (December): 761–64.

Rogers, Ronald W. (1975). "A Protection Motivation Theory of Fear Appeals and Attitude Change," *Journal of Psychology* 91 (September): 93–114.

——— and C. William Deckner (1975). "Effects of Fear Appeals and Psychological Arousal Upon Emotion Attitudes, and Cigarette Smoking," *Journal of Personality and Social Psychology* 32 (2): 222–30.

——— and C. Ronald Mewborn (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 (1): 54–61.

——— and Donald L. Thistlethwaite (1970). "Effects of Fear Arousal and Reassurance on Attitude Change," *Journal of Personality and Social Psychology* 15 (3): 227–33.

Schwarz, Norbert, Servay Wolfgang and Martin Kumf (1985). "Attribution of Arousal as a Mediator of Effectiveness of Fear-Arousing Communications," *Journal of Applied Social Psychology* 15 (2): 178–88.

Sigall, Harold and Robert Helmreich (1969). "Opinion Change as a Function of Stress and Communication Credibility," *Journal of Experimental Social Psychology* 5 (January): 70–78.

Simonson, Norman R. and Richard M. Lundy (1966). "The Effectiveness of Persuasive Communication Presented under Conditions of Irrelevant Fear," *Journal of Communication* 16 (March): 32–37.

Spelman, M.S. and P. Ley (1966). "Knowledge of Lung Cancer and Smoking Habits," *British Journal of Social and Clinical Psychology* 5 (September): 207–10.

Spence, H. and R. Moinpour (1972). "Fear Appeals in Marketing: A Social Perspective," *Journal of Marketing* 36 (July); 39–43.

Sternthal, Brian and C. Samuel Craig (1974). "Fear Appeals: Revisited and Revised," *Journal of Consumer Research* 1 (November): 22–34.

Stuteville, John R. (1970). "Psychic Defenses against High Fear Appeals: A Key Marketing Variable," *Journal of Marketing* 34 (April): 39–45.

Sussman, Lyle (1973). "Ancients and Moderns on Fear and Fear Appeals: A Comparative Analysis," *Central States Speech Journal* 24 (Spring): 206–11.

Sutton, Stephen R. (1982). "Fear-Arousing Communications: A Critical Examination of Theory and Research," in *Social Psychology and Behavioral Medicine*, J. Richard Eiser, ed., John Wiley & Sons Ltd.: 303–37.

Tan, Alexis S. (1981). *Mass Communication Theories and Research*, Columbus, OH: Grid, Inc.

Wheatley, John J. (1971). "Marketing and the Use of Fear- or Anxiety-arousing Appeals," *Journal of Marketing* 35 (April): 62–64.

_____ and Sadaomi Oshikawa (1970). "The Relationship Between Anxiety and Positive and Negative Advertising Appeals," *Journal of Marketing Research* 7 (February): 85–89.

Yinon, Yoel, Aharon Bizman, Sarah Cohen and Arie Seger (1976). "Effects of Guilt-Arousal Communications on Volunteering to the Civil Guard: A Field Experiment," *Bulletin of the Psychonomic Society* 7 (6): 493–94.