

FOREST SERVICE
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PACIFIC SOUTHWEST Forest and Range Experiment Station

THREE FIRE PREVENTION TELEVISION FILMS VARYING IN "THREAT" CONTENT. . . .

their effectiveness in changing attitudes

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— **The Author** —

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The campaign to disseminate fire prevention information has for some years relied heavily on a belief in the efficacy of television. Consequently, numerous public service films on fire prevention have been produced and beamed over commercial television channels in the hopes of achieving a reduction in the number of man-caused forest fires. Television continues to be used for this purpose despite a paucity of knowledge about its actual effectiveness in general, or about the effectiveness of various presentation techniques in particular.

The belief in the efficacy of TV can be said to arise out of three assumptions: (a) a TV spot message would be received by a large audience; (b) the proportion of the target population who view the film spots would be even greater than that in the general population because the population considered high risks for starting fire spends an above-average amount of time watching TV (Folkman 1965); and (c) the impact of a television spot would be kept and translated into appropriate behavior when the viewer is in a fire-risk situation.

In 1967, Albert G. Stoll, formerly of the fire prevention research staff, Pacific Southwest Forest and Range Experiment Station, developed three experimental 1-minute television films. The three color films differed in the amount of "threat" content. One film concentrated on portraying wildfire in the process of damaging trees and other vegetation. The second film portrayed intact forest and wildland with wildlife activity, including a scene of two young racoons playing affectionately. A third film alternated between scenes of damaging wildfire, and scenes of an intact forest with some wildlife activity, but stopped short of a "final embrace" by the two racoons. The music in the three films differed, but the narration was the same for all three

except for the P.O. Box number and for one sentence that was altered so it related more closely to the content of the film. The changes from one film to the other are given in *italics*:

"No Threat" narration

If you had told grandfather that someday we would have to pay for space in the street to park the car, he would have laughed at you. But values change in this increasingly populated world of ours and the price is going up on many natural resources besides space. Our forests for example, the ones grandfather used to know. *These lives will go on only if we're careful.* Spread the word. Remind yourself and others to be careful with fire with a free bumper sticker. Send your name and address to Fire Prevention, Box 961. San Francisco, California.

"Mild Threat" narration

The seeds of life are there. We can have either this or this.

Box 322

"Threat" narration

Can we afford to lose them? Or is their future just a matter of time.

Box 154

To test indirectly the assumptions we made about the use of TV spots two different types of studies were tried. The first study did not draw the amount of response we expected, and so it was abandoned. In the second study—the focus of this paper, we measured the attitudinal responses of a sample of 194 junior college students in northern California. The students completed a questionnaire before and after

seeing the films and an adjective checklist to show their emotional reactions to them. This paper reports the results of these two sets of tests: One on the relative effectiveness of the TV spots, which differed

in the amount of “threat” content, in changing attitudes; and the other on whether viewers perceived the films in accord with the film-maker’s expectations.

OBJECTIVES

The general objective was to determine the relative effectiveness of three fire prevention TV spots in changing the attitudes of viewers toward one of greater concern for fire prevention. A secondary objective was to answer such questions as: Is the film portraying wildfire and accompanying damage perceived by viewers as frightening or alarming? Does the film portraying flourishing forests and wildlife activity elicit a feeling of optimism (no-threat)? Does the film combining these two situations make the viewer feel somewhat anxious? If one of the films produced attitude change, but did not elicit the emotional reaction expected, then we would need to find out what elements in the film were responsible for producing attitude change.

Scientifically stated, the objective of the study was to test this hypothesis: Positive attitude change is more likely to occur after a strong fear-arousing communication than after a no-threat communication or a mild fear-arousing communication (i.e., one alternating between strong fear-arousing content and non-threatening content). As to the subject matter of the study, the hypothesis may be restated as follows: Attitude change in the direction of greater fire caution will be more pronounced after a strong fear-arousing film (one depicting only damaging wildfire) than after a non-threatening film (forest scenes with no fire depicted) or a mild fear-arousing film (one combining some fire and some intact forest scenes) or than after a control film on an unrelated subject.

METHODS

In the first experiment, the films were exposed over commercial television channels and incorporated a crude measure intended to gauge the proportion of the audience whose attention was attracted to a particular spot. At the end of each film the viewer was asked to send for a free fire prevention bumper sticker. The ratio of requests to estimated viewers, at the time each spot was shown, was to suggest the relative impact of each spot.

Two of the spots were shown in conjunction with popular programs, but only a few requests for bumper stickers were received. Therefore, this first experiment was abandoned, for I felt that the requests for bumper stickers quite likely did not validly measure the attention-getting potential of each spot, but more likely measured the desire for bumper stickers.

In the second experiment, I wanted to test indirectly the third assumption—that TV spots can effect behavior change. Actually, the experimental design incorporated a measurement of attitude change, and therefore was based upon still another assumption—that attitude change is accompanied by consonant behavioral change. Cox (1964, p. 387) points out that attitude change sometimes *follows*

behavior change. Furthermore, because I had conducted a laboratory experiment that relied on a captive audience, I could not consider the effect of selective exposure and other predispositional factors which might be counteracted in a laboratory-testing situation (Cox 1964, p. 375-386). The balance of this report concerns this second experiment.

The films’ producer chose as the experimental variable the amount of fear-arousal content to be incorporated in each of the three films. He did so because he felt that the motivating force of most fire prevention films is fear—apparently on the assumption that the portrayal of wildfire will arouse an anxiety in the viewer which he will be motivated to reduce.

Several questions need to be answered to test this assumption: First of all, is the information perceived as fearful? If so, does this fear-oriented information of fire prevention films facilitate communication with fire users, especially those who have low knowledge of or poor attitudes toward fire prevention or both? Or might the anxiety created by fear result in the viewer’s apparent withdrawal or defensive avoidance of the message? If the fear motive is effective, might there be an optimum level of threat?

Experimental Subjects

This experiment was carried out through the cooperation of five instructors at the Diablo Valley Junior College in Concord, California, who “volunteered” one or more of their classes. These consisted of a psychology, a history, and an anthropology class, as well as several classes each in humanities and social sciences. A total of 194 students participated.

Junior college rather than university students were deliberately chosen in an effort to test a group that might be more likely to have a high incidence of some characteristics of the high fire-risk population in Butte County, California. A survey there showed that the high fire-risk residents tended to be young unmarried persons with a limited amount of schooling for their age (Folkman 1965). If employed, they were apt to have only a part time job in the operative, clerical or laborer occupations, and to have family incomes in the low to medium range. Because junior colleges have no entrance fees and accept all applicants 18 years of age and over, whether high school graduates or not, I felt there might be a higher concentration of persons with these attributes than at a university. Therefore, it might also follow that there would be more persons with low fire prevention knowledge and attitude scores at a junior college than at a university.

The questionnaires completed by the students did not cover all the demographic characteristics obtained in the Butte County survey, but information was obtained on age, marital status, and employment status. In these three categories the students were similar to the Butte County high fire risk population; i.e., 91 percent of the students in this experiment were in the age range 18 to 25 years; 87 percent were single and had never been married; and 69 percent were employed part time or just part of the past year. I could not determine how much schooling they had completed before entering junior college, because 77 percent of the subjects checked 1 to 4 years of college as the highest level of education they had completed. But I assumed that because a high school diploma is not required for junior college entrance that there were some high school drop-outs.

The students tested lower in fire prevention knowledge on three out of four knowledge questions than did the general population in Butte (see tables 1 to 4 in Appendix).

On three out of four of the more discriminating attitude statements, a greater proportion of respondents had low (less favorable) before-film attitude scores than did respondents in the Butte County test (see tables 5 to 8 in Appendix).

Procedures

To avoid bias that might result from the use of intact classes, the instructors were asked to have their students count off from 1 to 4, and to direct all students with the number one to attend a particular experimental film session, all those with the number two to another experimental film session, and so on. In theory, about equal numbers of each class would be found in each of the four experimental film sessions (one was a control film). In actuality, however, the division was not perfect. Some students who had numbered off (because of time limitations this counting off was done 2 days earlier) probably did not show up for the experiment. And others, who had not been present at the previous class meeting, probably showed up on experiment day, entered their usual classrooms, and remained.

An attitude questionnaire and an Adjective Check List for self report of affective state or emotional disposition were administered to each group before the showing, in the experimental groups, of a fire prevention film, and in the control group, of a neutral non-fire prevention film.¹ After the film showing, the Adjective Check List was again administered. It was followed by a final questionnaire covering knowledge and attitudes regarding fire prevention, recall of film content and other information, and socioeconomic characteristics of the respondents.

Questionnaires and Checklist

“Before” Attitude Questionnaire

The “before” attitude questionnaire was designed to determine the fire prevention attitudes of the subjects before the showing of the films. Entitled *Education, Community, and Environment* this questionnaire consisted of 48 items of which 11 pertained to fire prevention attitudes (see Appendix). The remainder were filler items intended to disguise the purpose of the questionnaire, and to interfere, I hoped, with recall of specific answers given to the fire prevention questions which were repeated in the *After Questionnaire*.

A set of attitude statements in which there are five possible responses (strongly agree, agree, undecided, disagree, and strongly disagree) was used (Likert 1967). To avoid response set—a tendency to select

¹A 1-1/2 minute Animation Workshop color film of abstract designs with a narration of an Ogden Nash poem. Available from the University of California, Extension Media Center, Berkeley.

the same response for all statements—about half of the fire prevention attitude statements were worded so that agreement denoted a favorable attitude, and the remainder so that disagreement denoted a favorable attitude. (The response most favorable to fire prevention was scored 5, and that least favorable was scored 1.)

Six of the 11 attitude statements were selected from the Butte County study (Folkman 1965, p. 30-32). The six questions chosen were among those that were differentiating; i.e., participants in the Butte County study did not all respond to these questions in the same way. The wording was slightly altered in two of the six questions to avoid response set.

Adjective Check List

The *Adjective Check List* has been found to be useful in estimating change in mood or emotional arousal after a variety of experimental treatments.² The List used in this study consists of 75 adjectives which describe affect or mood or conscious emotion. Each subject was instructed to check those terms that described the way he felt at that moment. Each adjective falls into one of a number of dimensions representing different moods or emotional states, such as fear, guilt, general excitement, hostility, and depression. Scoring consists in counting the number of adjectives checked which represent the emotional dimensions being measured. Nowlis (1953, p. 126) claims that “the adjective check list seems to succeed by partially freeing the checking behavior from directly controllable verbalizations, in getting groups of responses whose probabilities vary quite directly with changes in conscious emotion or affect.”

The adjectives making up the “Fear Cluster”—the emotional state with which this study was most concerned—were alarmed, anxious, apprehensive, fearful, frightened, horrified, scared, startled, threatened, and worried. The adjectives making up the “General Excitement Cluster” (which Haefner³ found to vary

positively with increases in the “Fear Cluster”) are disturbed, emotional, excited, nervous, serious, shocked, tense, uneasy, unsure, upset, jittery, and keyed-up.

After Attitude and Informational Questionnaire

An *After Questionnaire* was administered to students immediately after a second Adjective Check List was filled out, following the film showing. It consisted of 31 questions.

It had five questions on reactions to the films seen, 19 questions on the amount of wildland experience of the respondent (including a repeat of the 11 attitude questions in the “before” questionnaire), and seven questions on background or personal information.

Operational Indicators

To test the hypotheses about attitude changes and about the filmmaker’s intentions, I used the scoring from the 11 attitude questions and from the two adjective clusters.

Whether a student underwent a positive attitude change toward fire prevention was measured by comparing his “before” and “after” scores on each of the 11 attitude questions. I also measured any change by computing the differences between (a) total “after” and total “before” attitude scores, and (b) summed “after” scores on three differentiating attitude statements and summed “before” scores on these three statements.

To find out which of the 11 attitude statements were the most discriminating I analyzed the results of a pilot test of the questionnaires conducted at Merritt Junior College, Oakland, California. I found that the three statements that best differentiated between students with the most favorable “before” attitude and those with the least favorable “before” attitude were, in order of discriminating ability. . .

1. Fire prevention literature is a waste of taxpayer’s money.

2. People should be required to obtain fire permits much on the same basis as drivers’ licenses.

3. Schools should not be permitted to use school time for instruction in forest fire prevention.⁴

The three statements were selected by determining the differences between the scores of the 25 highest scorers on the 11 attitude questions and the scores of

²Nowlis, V., H. Nowlis, and M. H. Taylor, Jr. *Development of clusters of adjectives for self-report of affective responses*. In, Nowlis, V. Annual status report. Project No. NR 171-342, 1954. As cited by Don P. Haefner, *Some effects of guilt-arousing and fear-arousing persuasive communications on opinion change*. (Unpublished Ph.D. thesis, University of Rochester, New York, 1956.)

³Haefner, Don P. *Some effects of guilt-arousing and fear-arousing persuasive communications on opinion change*. 1956. (Unpublished Ph.D. thesis on file at Univ. Rochester, Rochester, New York.)

⁴The smallest difference (i.e., the least discriminating statement) between the extreme high scorers and the extreme low scorers was on the statement “‘Smokey Bear’ does a good job of alerting the public to fire danger.”

the 25 lowest scorers. This method for determining which are the most discriminating statements is called the criterion of internal consistency (Likens 1967, p. 92-95).

I used two types of measures to determine if a particular film aroused in the viewers the emotion intended by the films' producer: one was objective, the other subjective.

The objective measures were the differences between the "after" and "before" scores for each of the two adjective clusters—fear and excitability—within the Adjective Check List. If the film intended to be strong-fear arousing *is* fear-arousing, we would expect those viewing that film to check more adjectives in the two clusters than they had before they saw the film. This should also be true, but to a lesser extent, for those viewing the mild fear-arousing film. Those viewing the no-threat film would be expected to

check about the same number of adjectives or fewer in these clusters than they had before seeing the film. And this would be the pattern for the control group if the film chosen, as intended, did not arouse emotion.

The subjective measures of whether each film aroused the type of emotional reaction intended were in the form of these questions:

Which of the following best describes how you felt while viewing the film? Alarmed...Somewhat troubled or anxious...Neutral or indifferent ...Contented and/or hopeful...Elated.

Did you feel that the message of the film was generally hopeful, neutral, or generally *not* hopeful about solving the man-caused forest fire problem?

Did you feel that the scenes portrayed were *generally* very pleasant, pleasant, unpleasant, or very unpleasant?

RESULTS

Attitude Changes

On only one of the 11 attitude statements did the responses yield a statistically significant difference in the attitude-change scores of the four film groups. This difference occurred in response to the statement: "Where the countryside or forests are green one need not worry about discarding cigarette butts or used matches on the ground."⁵

Most students did not change their attitude toward this statement after viewing the films. The size of the no-change groups ranged from three-fifths of the Control film viewers to three-fourths of the "Threat" film viewers (*table 9 in Appendix; fig. 1*).

In all film groups, except the "No Threat" film group, the largest proportion of those whose attitude changed shifted to a less favorable position (a lower score) on that statement than they had held before the film. This was particularly true in the Control film group. All but one of those respondents whose attitude changed had a slightly less favorable attitude toward this statement after viewing the Control film.

Computation of the Mann Whitney U test⁶ of

significance on individual pairs of fire prevention film groups revealed no statistically significant differences between the film groups when paired. Although the fire prevention films did not differ significantly from each other in their resulting distribution of attitude-change scores, each did differ significantly from the Control film.⁷ The most significant difference occurred between the "No Threat" film group and the Control group.

I interpret these findings to mean this: A respondent's attitude on fire prevention when tested before and after a film, is less likely to decline in favorableness after viewing a film on fire prevention than after viewing one on a totally unrelated subject. Responses to the statement "Where the countryside or forests are green, one need not worry about discarding cigarette butts and used matches on the ground" would seem to support this interpretation. In fact, the "No threat" film was the only one in which the shift to a more favorable attitude was greater than the shift to a less favorable attitude after film viewing.

An analysis of the "before" attitudes toward this statement (*table 10 in Appendix*) reveals, however, that the results may not be due to the effect of the "No Threat" film but rather to the fact that viewers of the "No Threat" film had more opportunity for change to a more favorable attitude than viewers of

⁵The Kruskal-Wallis One-Way Analysis of Variance Test of Statistical Significance was used—this yielded an H of 12.66 which, with $df = 3$, shows $0.001 < P < .01$ (Siegel 1956, p. 184-194).

⁶The Mann Whitney U test for two independent samples, like the Kruskal-Wallis One-Way Analysis of Variance for k independent samples, is performed on ungrouped data and has the same power-efficiency, i.e., about 95.5 percent (Siegel 1956, p. 116-127).

⁷"Mild Threat" vs. Control [$P(Z \geq 1.54) = .061$]; "Threat" vs. Control [$P(Z \geq 1.78) = .041$]; "No 'threat'" vs. Control [$P(Z \geq 2.72) = .003$].

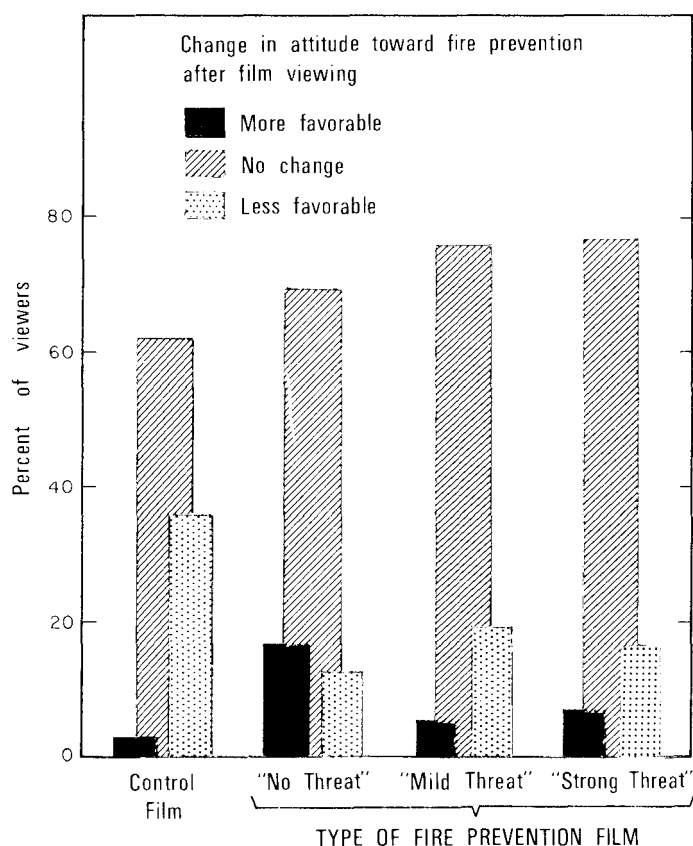


Figure 1—Three fire prevention films were not very effective in producing a more favorable attitude toward fire prevention. But, any one of them was more effective than the Control film. Of the three fire prevention films the "No Threat" film was significantly more effective than the Control film. Attitude change was measured by calculating the difference between the before and after response scores on the statement "Where the countryside or forests are green one need not worry about discarding cigarette butts and used matches on the ground."

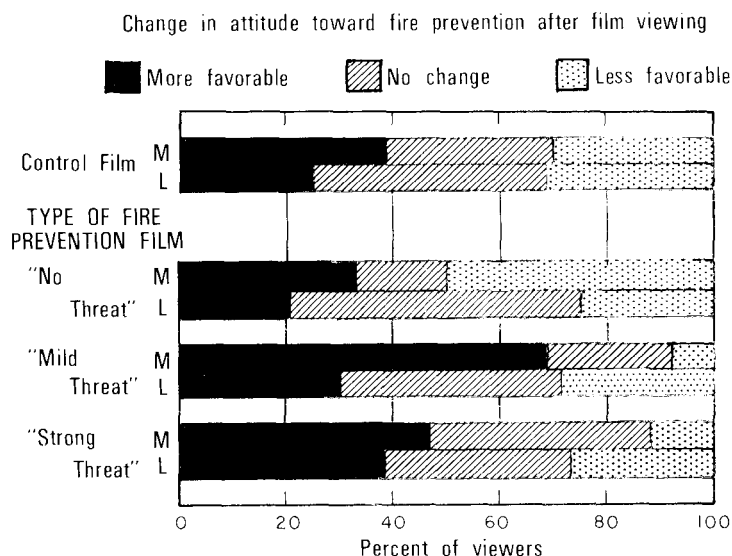
the other films. The attitude statement "Where the countryside or forests are green, one need not worry about discarding cigarette butts or used matches on the ground" evidently was not a discriminating statement. Among the students tested, all but two persons either disagreed or strongly disagreed with the statement; most subjects strongly disagreed with it. In the "No Threat" group, however, only 63 percent strongly disagreed with it before seeing their film (another one-third merely disagreed with it); in the other film groups 76 percent to 84 percent strongly disagreed with the statement and the balance merely disagreed with it before seeing their films.

Comparing the four film groups' attitude-change scores in response to the 10 other attitude statements taken singly, or when summed for a total score on all 11 statements, or on the three differentiating statements, I found that *no one film changed attitudes significantly more than any other film including the Control film.*

The criterion of a film's effectiveness is subsequent positive attitude *change*, and does not include mere maintenance of prior attitude. Nevertheless, it should be noted (since it parallels the finding reported in the

following section concerning anxiety reactions to the films) that, when those students showing no change in their total attitude score are grouped with those who show a favorable attitude change, the resulting proportion of students becomes progressively larger as the subject matter changes from non-fire prevention to fire prevention and as the amount of threat content increases. Those showing a favorable attitude change together with those showing no attitude change made up 1/3 of the Control group, more than 2/5 of the "No Threat" group, 1/2 of the "Mild Threat" group, and 3/5 of the "Threat" group. The importance of this progression, of course, depends upon whether those experiencing no change have an initially favorable (high total score) or unfavorable (low total score) fire prevention attitude, i.e., the maintenance of a poor attitude is not indicative of film effectiveness.

When the students were categorized according to whether or not the message was relevant to them, I found some significant differences in attitude change where attitude change is indicated by the differences between the summed "before" and summed "after" response scores on three differentiating attitude



M= Viewers to whom fire prevention is more relevant because they lived or worked in wildlands in past year

L= Viewers to whom fire prevention is less relevant because they did not live or work in wildlands in past year

statements.⁸ Used as an indicator of relevance was the question "Did you live or work in any forest or other wildland areas during the past year?" When individual pairs of treatments were compared, a significant difference in the effects of the "Mild Threat" and "No Threat" films was shown— $0.02 < P (H \geq 8.52, df = 3) < .05$.⁹ This difference is apparently due to the contrasting responses of the subject for whom prevention of fire is relevant (fig. 2). In the "Mild Threat" group, 92 percent of those subjects for whom fire prevention is more relevant either showed no change in their before film attitude or changed to a more favorable attitude, whereas only 50 percent of the 'more relevant' subjects viewing the "No Threat" film were in these categories. In seeking an explanation for the greater effectiveness of the "Mild Threat" film a check of the fear-arousing potential of each of the films revealed that the "Mild Threat" film produced less alarm and anxiety (table 11 in Appendix) than either the "No Threat" or the "Threat" films. Approximately equivalent propor-

Figure 2—A "Mild Threat" fire prevention film was the most effective in producing favorable attitude change among students who had recently worked or lived in wildlands. The differences between the effects of the "Mild Threat" film and the "No Threat" film were statistically significant. Attitude change was measured by calculating the difference between the summed "before" and summed "after" response scores on three differentiating attitude statements.

tions of students viewing the "No Threat" and "Threat" films experienced an increase in anxiety after their film. This proportion exceeded that in the groups viewing the "Mild Threat" and Control films. One might conclude that the so-called "No Threat" film's anxiety provocation was compensated for by a reaction of defensive avoidance (Janis and Feshback 1953) except that the "Threat" film, which produced an equivalent proportion experiencing anxiety increase, did not produce an accompanying defensive avoidance.

The "Mild Threat" film was more effective than the "No Threat" film in producing favorable attitude change among students who had lived or worked in forest or wildland areas recently. The "Threat" film appears to have been next most effective with this higher relevance group. Among these students, not only was there favorable attitude change in response to the "Threat" film, but unlike in the "No Threat" group, there was a sizable proportion who retained their "before" film attitudes. These findings appear to contradict those of Berkowitz and Cottingham (1960), who found that a strong threat was more effective than a weak one only among the low relevance subjects, i.e., those who had little experience with the subject matter.

Fear-Arousing Potential

Differences between the four film groups in the

⁸The Kruskal-Wallis One-Way Analysis of Variance Test of Statistical Significance was used this yielded an H of 19.82 which, with $df = 6$, shows $.001 < P < .01$.

⁹The "Mild Threat" film effects are also significantly different from those of the Control film [$.02 < P (H \geq 8.32, df = 3) < .05$].

direction and amount of change in the number of fear adjectives or excitability adjectives checked after the film showing were not statistically significant.

Students who saw the fire prevention films, tended, however, to check more, or the same number, rather than fewer fear adjectives than those who saw the Control film. And this tendency increased as the amount of threat content in the film increased:

- More than 75 percent of those viewing the “Threat” film showed no change or checked a few more fear adjectives than before viewing their film.
- More than 66 percent of students in both the “Mild Threat” and “No Threat” film groups showed no change or checked a few more fear adjectives after viewing their films.
- Less than 60 percent of students in the Control group checked the same number or a few more fear adjectives than they had before viewing their film.
- The “Threat” and the “No Threat” film groups had the highest proportions checking more fear adjectives after seeing their films: 51 percent and 41 percent, respectively. The percent showing no change or checking a few more or a few less fear adjectives after viewing film:

Film Group:	<u>No change</u>	<u>A few more</u>	<u>A few less</u>
“Threat”	26	51	23
“Mild Threat”	41	28	31
“No Threat”	26	41	33
Control	22	36	42

The most pertinent subjective measure of a viewer’s reaction to a film was his response to the question about how he felt while viewing the film: alarmed, somewhat troubled or anxious, neutral or indifferent, contented and/or hopeful, or elated? While the differences in reactions reported were not significant at the 5 percent level, the probability of their occurring by chance was less than 10 percent. However, the differences found were not those expected (*see table 11 in Appendix*). The “No Threat” film rather than being the least threatening had the greatest proportion (10 percent) of students who reported feeling “alarmed” while viewing their film. In fact, when the two categories ‘alarmed’ and ‘somewhat troubled or anxious’ are grouped together, the proportions of students in the “No Threat” and the “Threat” film groups reporting these feelings were virtually equal (about 44 percent).

The most typical reaction expected in response to the “Mild Threat” film was feeling ‘Somewhat troubled or anxious.’ However the “Mild Threat” film evoked this response from a smaller proportion than did the “No Threat” or “Threat” films. A large

proportion (47 to 51 percent) in all groups but the “No Threat” group reported they were ‘neutral or indifferent’ while viewing their film.

I used three other subjective measures of reactions to the films. They were the responses to these questions: (1) Did you feel that the message of the film was generally hopeful, neutral, or generally *not* hopeful about solving the man-caused fire problem? (2) Did you feel that the scenes portrayed were *generally* very pleasant, pleasant, unpleasant, or very unpleasant? (3) How interesting was this film to you: very interesting, somewhat interesting, not very interesting, not at all interesting? The differences in responses among the four film groups were statistically significant.

The largest proportion—51 percent—of any group feeling that the film it viewed had a hopeful message about solving the man-caused fire problem was in the “Mild Threat” film group (*table 12 in Appendix*). Another 35 percent of the group felt the film was neutral and 14 percent felt it was not hopeful.

The largest proportion—44 percent—of any group feeling that its film’s message was not hopeful was in the “Threat” film group. The remainder (56 percent) was divided equally between those who thought the film neutral and those who thought it hopeful.

The “No Threat” film group had the smallest proportion (about 25 percent) feeling the film was neutral; 39 percent felt it was hopeful, and 37 percent felt it was not hopeful. Almost half of the respondents in the Control film group felt their film was neutral in solving the man-caused forest-fire problem; 40 percent thought it not hopeful, and 9 percent thought it hopeful.

As to whether the scenes portrayed were perceived as very pleasant, pleasant, unpleasant, or very unpleasant, 91 percent of the “Threat” film group reported them as either unpleasant or very unpleasant. The “Mild Threat” group was split—half reported some degree of unpleasant and half some degree of pleasant. In the “No Threat” film group, 84 percent reported the scenes were pleasant or very pleasant; and 14 percent, that they were unpleasant. In the Control group, 53 percent reported the scenes pleasant; and 47 percent, that they were unpleasant (*table 13 in Appendix*).

Among the fire prevention film groups the proportion of students who considered their film very interesting or somewhat interesting decreased as the amount of “threat” was increased. Over four-fifths of the “No Threat” film group found their film interesting, whereas three-fourths of the “Mild Threat” group and two-thirds of the “Threat” group found their films interesting (*table 14 in Appendix*).

DISCUSSION AND CONCLUSIONS

Results of experiments on attitude and behavioral change using fear-arousing techniques have not been consistent: Some of the earliest work by Janis and Feshback (1953, 1954) suggested that high-fear arousal produced less attitude change, presumably because high Fear produced responses of defensive avoidance. Goldstein (1959), Janis and Terwillinger (1962) and Nunnally (1961) reported similar findings. Berkowitz and Cottingham (1960) found that a communication with strong fear appeal produced more attitude change than one with a weak fear appeal, but this held only for those to whom the communication was of low relevance. Others who have reported that strong fear arousal made attitude changes easier include Chu (1966), DeWolfe and Governale (1964), Leventhal and Niles (1965), Leventhal, Singer and Jones (1965), Piccolino (1966), and Powell (1965). Leventhal, Singer and Jones' study found that although fear produced attitude change, it did not produce behavioral change unless combined with specific plans for action.

Chu's (1966) study adds additional variables to early research on fear arousal. He found that the more a person saw a means of averting threat, the greater was the effect of a strong fear-arousing communication. But, although a mild fear arousal communication was less effective than one with a strong fear arousal, the attitudes achieved were more resistant to counterpropaganda.¹⁰

In this study the so-called non-threatening film with scenes of wild animals, birds, and intact forests and *no* wildfire was perceived as the most pleasant and the most interesting film. And it was perceived to be just as threatening as the so-called threatening film with its damaging wildfire scenes. These findings

suggest that if one wishes to test the effectiveness of threat in producing change, one may be just as successful in creating the test variable by using *implied* threat to valued objects, rather than using the apparently scarier scenes of damaging wildfire. Miller (1963) suggests that researchers should "Stop and back up a step...rather than assuming that 'everyone knows a fear appeal when he sees one'...." He feels that rationales should be developed for labeling certain classes of stimuli as "universally" anxiety-arousing. He had been investigating the possibility that cues denoting social approval fall in this category.

Regardless of how the films were perceived by their respective audiences, no one film in this study could be considered superior to another in its attitude-changing effectiveness for the audience as a whole. But for those subjects who had recently lived or worked in forest or wildland areas, the "Mild Threat" film was most effective in producing favorable attitude change. Since prevention of fire was relevant (by criterion: recently lived or worked in wildlands) for less than one-third of the students, perhaps we may draw these conclusions:

- A "Mild Threat" film may be the most successful (compared to a "No Threat" or a "Strong Threat" film) in improving fire prevention attitudes among groups of persons living, working, or presently camping in wildland areas.
- For high fire risk persons who are not currently camping, or who are not known to have recently lived or worked in wildland areas, we must find ways to make fire prevention relevant by associating it, in our messages, with subject matter known to be relevant to this target population.

SUMMARY

Bernardi, Gene C.

1970. **Three fire prevention television films varying in "threat" content. . . their effectiveness in changing attitudes.** Berkeley, Calif., Pacific SW. Forest & Range Exp. Sta., 26 p., illus. (USDA Forest Serv. Res. Paper PSW-63)

Oxford: 432.13:0301.153-0654.197.

Retrieval Terms: fire prevention education; television research; threat appeals; attitude change.

¹⁰For an excellent review of the last 15 years of fear arousal research, see Higbee (1969).

An experiment to test the relative effectiveness in changing attitudes of three fire prevention TV films intended to vary in the intensity of threat portrayed (none, mild, and strong) was conducted among 194 junior college students in California. A fourth film, not concerned with fire prevention, served as the control film.

The scenes of the three fire prevention films, each in color and lasting 1 minute, differed in content and musical background. The narration for the three films was the same except for the P.O. Box number and for one sentence.

The hypotheses that (a) the films would elicit the emotions intended by the producer and that (b) the film intended to have the strongest threat would be the most effective in producing positive attitude change, were not confirmed.

A significant difference among the four film groups in attitude change occurred in response to only one out of the 11 attitude statements used. This significant change to a more favorable attitude occurred in the group that viewed the "No Threat" film. But this change could not be attributed to the superior effectiveness of the "No Threat" film because of the distribution of attitudes in this group before the film was viewed. The proportion of viewers in the "No Threat" film group who were *able* to move to an even more favorable position after film viewing was twice as large as that in the "Mild Threat" and "Strong Threat" film groups. When the responses of students who had lived or worked in

wildlands recently were compared with those of students who had not, the "Mild Threat" film was found to be significantly more effective than the "No Threat" film in producing favorable attitude change among those for whom fire prevention was apparently more relevant.

Neither an objective measure—checking off items in an Adjective Check List—nor the most direct subjective measure—asking each subject how he felt while viewing the film—resulted in any significant differences among the four films in the extent of anxiety reaction experienced. However, both of these measures indicated that the "No Threat" and "Threat" films tended to produce an approximately equivalent proportion experiencing an anxiety reaction. And this proportion was greater than that expressed by either the "Mild Threat" or Control groups. There was apparently greater potential in the "No Threat" film for arousing some kind of emotional reaction, whether anxiety or hope-oriented, rather than mere indifference or neutrality.

Significant differences were also found in the other less direct subjective measures of students' emotional reactions to the films. The degree of pleasantness perceived and the amount of interest in a film seemed to vary together. The largest proportion (83 percent) experiencing the film viewed as both pleasant and interesting was in the "No Threat" group. Both the perception of pleasantness and the amount of interest decreased as the threat content of the films was increased.

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APPENDIX

Table 1-Answers to question on the flammability of green trees and shrubs in California

Answer chosen	Junior College students who saw film . . .					Butte County survey respondents ¹ (N=761)
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)	
	Percent					
Correct ("will catch fire and burn very rapidly")	60.0	46.9	47.4	51.1	51.0	43.4
Incorrect	22.2	24.5	24.6	23.3	23.7	48.9
Don't know	17.8	28.6	28.0	25.6	25.3	7.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

¹See Folkman, William S. *Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention*. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

Table 2-Answers to question on potential of starting a fire by driving in dry grass

Answer chosen	Junior College students who saw film . . .					Butte County survey respondents ¹ (N=761)
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)	
	Percent					
Correct (both exhaust and friction sparks set fires)	37.8	55.1	43.9	55.8	47.9	61.8
Incorrect	37.8	22.5	26.3	23.3	27.3	27.0
Don't know	24.4	22.4	29.8	20.9	24.8	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

¹See Folkman, William S. *Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention*. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

Table 3-Answer to question on the surest way to put out a campfire

Answer chosen	Junior College students who saw film . . .					Butte County survey respondents ¹ (N=761)
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)	
	Percent					
Correct ("Pour water on it and stir thoroughly")	24.5	20.4	19.3	30.2	23.2	56.6
Incorrect	71.1	77.6	75.4	67.5	73.2	42.6
Don't know	4.4	2.0	5.3	2.3	3.6	.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

¹See Folkman, William S. *Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention*. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

Table 4-Answers to question on when fire permits are required

Answer chosen	Junior College students who saw film . . .					Butte County survey respondents ¹ (N=761)
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)	
	Percent					
Correct (all types of fires)	20.0	40.8	28.1	23.3	28.4	58.7
Incorrect	46.7	30.6	38.6	46.5	40.2	32.0
Don't know	33.3	28.6	33.3	30.2	31.4	9.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

¹See Folkman, William S. *Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention*. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta. Berkeley, Calif. 32 p. 1965.

Table 5-Responses of Junior College students and Butte County, California, residents to statement: "Forest fire danger in California open country is highly overrated"

Attitude ¹	Junior College	Butte County ²
	Percent	
Strongly disagree (5)	57.2	16.3
Disagree (4)	32.5	56.2
Undecided (3)	5.7	18.4
Agree (2)	1.5	5.4
Strongly agree (1)	2.6	2.0
No answer given	.5	1.7
Total	100.0	100.0

¹Score (5) represents the most favorable attitude.

²Folkman, William S. *Residents of Butte County, California their knowledge and attitudes regarding forest fire prevention*. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

Table 6-Responses of Junior College students and Butte County, California, residents to statement: "People should be required to obtain fire permits much on the same basis as drivers' licenses"

Attitude ¹	Junior College	Butte County ²
	Percent	
Strongly agree (5)	10.3	16.2
Agree (4)	38.1	44.7
Undecided (3)	21.7	13.0
Disagree (2)	25.3	24.0
Strongly disagree (1)	3.6	1.8
No answer given	1.0	.3
Total	100.0	100.0

¹Score of 5 represents the most favorable attitude.

²See Folkman, William S. *Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention*. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

Table 7-Responses of Junior College students and Butte County, California, residents to statement: "Fire prevention literature is a waste Of taxpayers' money"

Attitude ¹	Junior College (N=194)	Butte County ² (N=761)
	Percent	
Strongly disagree (5)	19.6	29.1
Disagree (4)	58.2	61.9
Undecided (3)	15.5	4.3
Agree (2)	6.2	2.0
Strongly agree (1)	.0	2.5
No answer given	.5	.1
Total	100.0	³ 100.0

¹Score of 5 represents the most favorable attitude.

²See Folkman, William S. Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

³Columns may not add to 100.0 because of rounding.

Table 8-Responses of Junior College students and Butte County, California, residents to statement: "Schools should not be permitted to use school time for instruction in forest fire prevention"

Attitude ¹	Junior College (N=194)	Butte County ² (N=761)
	Percent	
Strongly disagree (5)	22.7	24.4
Disagree (4)	62.4	64.1
Undecided (3)	9.8	4.7
Agree (2)	4.6	4.7
Strongly agree (1)	.0	1.6
No answer given	.5	.5
Total	100.0	100.0

¹Score of 5 represents the most favorable attitude.

²See Folkman, William S. Residents of Butte County, California: their knowledge and attitudes regarding forest fire prevention. U.S. Forest Serv. Res. Paper PSW-25, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif. 32 p. 1965.

Table 9-Respondents' changes in attitude about fire prevention as measured by change in attitude toward statement: "Where the countryside or forests are green, one need not worry about discarding cigarette butts and used matches on the ground"

Attitude after film	Junior College students who saw film ¹ . . .				
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)
	Percent				
More favorable	2.2	16.3	5.3	7.0	7.8
No change	62.2	69.4	75.4	76.7	71.1
Less favorable	35.6	12.3	19.3	16.3	20.6
No answer given	-	2.0	-	-	.5
Total	100.0	100.0	100.0	100.0	100.0

¹The Kruskal Wallis One-Way Analysis of Variance test of statistical significance was applied to ungrouped data (attitude change scores ranged from -4 to +2). This yielded an H of 12.66 which, with df=3, shows .001 < P < .01.

Table 10–*Respondents’ attitude about the statement “Where the countryside or forests are green one need not worry about discarding cigarette butts or used matches on the ground” before they saw films*

Responses	Junior College students before saw film . . .				
	Control (N=45)	“No Threat” (N=49)	“Mild Threat” (N=57)	“Threat” (N=43)	Total (N=194)
	<i>Percent</i>				
Strongly disagree	75.6	63.3	82.5	83.7	76.3
Disagree	22.2	32.7	17.5	16.3	22.2
Undecided	2.2	2.0	–	–	1.0
Agree	–	–	–	–	–
Strongly agree	–	–	–	–	–
No answer given	–	2.0	–	–	.5
Total	100.0	100.0	100.0	100.0	100.0

Table 11–*Answers to question: “Which of the following best describes how you felt while viewing the film?”*

Answer chosen	Junior College students who saw film ¹ . . .				
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)
	<i>Percent</i>				
Alarmed	2.2	10.2	5.3	4.7	5.7
Somewhat troubled or anxious	17.8	32.6	26.3	39.5	28.9
Neutral or indifferent	51.1	28.6	47.4	46.5	43.3
Contented and/or hopeful	20.0	24.5	17.5	7.0	17.5
Elated	8.9	4.1	1.8	2.3	4.1
No answer given	–	–	1.7	–	.5
Total	100.0	100.0	100.0	100.0	100.0

¹Kruskal Wallis One Way Analysis of Variance test of statistical significance yielded an $H = 7.75$ which, with $df = 3$, shows $.05 < P < .10$.

Table 12–*Answers to question: “Did you feel the film message was hopeful about solving the man-caused fire problem?”*

Answer chosen	Junior College students who saw film ¹ . . .				
	Control (N=45)	“No Threat” (N=49)	“Mild Threat” (N=57)	“Threat” (N=43)	Total (N=194)
	<i>Percent</i>				
Generally hopeful	8.9	38.8	50.9	27.9	33.0
Generally neutral	48.9	24.5	35.1	27.9	34.0
Generally <i>not</i> hopeful	40.0	36.7	14.0	44.2	32.5
No answer given	2.2	–	–	–	.5
Total	100.0	100.0	100.0	100.0	100.0

¹Kruskal Wallis One-way Analysis of Variance test of statistical significance yielded an $H = 20.20$ which, with $df = 3$, shows $P < .001$.

Table 13-Answers to question "Did you feel the scenes portrayed were generally . . . ?"

Answer chosen	Junior College students who saw film ¹ ...				
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)
	<i>Percent</i>				
Very pleasant	2.2	36.7	8.8	2.3	12.9
Pleasant	51.1	47.0	40.4	7.0	37.1
Unpleasant	35.6	12.3	35.1	53.5	33.5
Very unpleasant	11.1	2.0	14.0	37.2	15.5
No answer given	–	2.0	1.7	–	1.0
Total	100.0	100.0	100.0	100.0	100.0

¹Kruskal Wallis One-Way Analysis of Variance test of statistical significance yielded an H=60.20 which, with df= 3, shows P<.001.

Table 14-Answers to question "How interesting was this film to you?"

Answer chosen	Junior Colley students who saw film ¹ . . .				
	Control (N=45)	"No Threat" (N=49)	"Mild Threat" (N=57)	"Threat" (N=43)	Total (N=194)
	<i>Percent</i>				
Very interesting	13.3	20.4	24.6	18.6	19.6
Somewhat interesting	31.1	61.2	52.6	46.5	48.5
Not very interesting	37.8	18.4	12.3	32.6	24.2
Not at all interesting	15.6	–	8.8	2.3	6.7
No answer given	2.2	–	1.7	–	1.0
Total	100.0	100.0	100.0	100.0	100.0

¹Kruskal Wallis One-Way Analysis of Variance test of statistical significance yielded an H=13.44 which, with (11-3, shows .001 > P > .01.

EDUCATION, COMMUNITY, AND ENVIRONMENT

Directions: Below you are presented with a series of statements or opinions. Read each statement. Then mark an X in the box (as follows: ☒) after that one of the provided alternatives: Strongly agree ☐, Agree ☐, Undecided ☐, Disagree ☐, or Strongly disagree ☐, which best describes your feeling about the initial statement.¹

(NOTE: The word esthetic² as used in this questionnaire has reference to the beautiful or to the appreciation of the beautiful.)

1. The goals of education should be dictated by children's interests and needs as well as by the larger demands of society.
2. The more education a person has the better able he is to enjoy life.
3. Everyone should have a little training in esthetic matters.
4. There are too many fads and frills in modern education.
5. Education helps a person to use his leisure time to better advantage.
6. Schools today are neglecting the three R's.
7. Education helps one enjoy the beauty of natural and man made things, such as sunsets, landscapes, music, paintings and sculpture.
8. Appreciation of beautiful things aids in making life happier.
9. The practical advantages of freeways do not offset the detrimental effects on our visual environment.
10. I see no reason for the government to spend money on esthetic objects and activities.
11. People should be allowed to pick wildflowers in order to enhance the beauty of their lives.
12. The educational curriculum should consist of subject matter to be learned and skills to be acquired.
13. Improved construction of freeways and automobiles makes driving skills less necessary today than five years ago.

~~¹In the original form, five boxes were shown below each statement.~~

²In the original form, the word *esthetic* was spelled *aesthetic* throughout.

14. The laws against littering should be more strictly enforced.
15. Schools should not be permitted to use school time for instruction in safe driving skills.
16. I sometimes go driving or walking in the countryside or state parks, but my reasons are usually other than those of esthetic pleasure.
17. Where the countryside or forests are green one need not worry about discarding cigarette butts or used matches on the ground.
18. Forest fire danger in California open country is highly overrated.
19. Drivers who disregard traffic regulations should be punished even when they have not caused damage or injury.
20. Leaving an occasional tin can in the woods is all right because it will rust out in the winter snows.
21. Fire prevention rules and regulations should be more strictly enforced.
22. One of the big difficulties with modern schools is that discipline is often sacrificed to the children's interests.
23. The curriculum should contain an orderly arrangement of subjects that represent the best of our cultural heritage.
24. "Smokey Bear" does a good job of alerting the public to fire dangers.
25. Deciphering messages carved in trees and park benches is intriguing.
26. People should be required to obtain fire permits much on the same basis as drivers' licenses.
27. The driver of a car should decide when it is safe to pass on curves.
28. The true view of education is so arranging learning that the child gradually builds up a store house of knowledge that he can use in the future.
29. Even though in an experienced camper's judgment it is perfectly safe to build a fire; he nevertheless should be punished if he does so in a prohibited area.
30. Progress in achieving insect-free fruits and vegetables should take precedence over concern with the balance of nature.
31. Because "things just happen" one should not be concerned with the prevention of fires and other accidents.

32. When litter cans are not provided, garbage should be left where it is fully exposed to the irradiating effects of sunlight.
33. Rangers should have more important things to do than going around checking on the fire behavior of forest visitors.
34. Our schools encourage an individual to think for himself.
35. The present emphasis on the enforcement of traffic rules should be reduced.
36. Fire prevention literature is a waste of taxpayers' money.
37. You don't have to worry about the woods because Mother Nature will always take care of the trees.
38. Observing fire prevention rules is my personal responsibility.
39. School training is of little help in meeting the problems of real life.
40. Esthetic education is nonsense.
41. A neat and tidy car is more important than a few pieces of paper on the freeway.
42. Schools should not be permitted to use school time for instruction in forest fire prevention.
43. I like beautiful things because they give me genuine pleasure.
44. Education in artistic things is a waste of public funds.
45. Education and educational institutions must be sources of new social ideas; education must be a social program undergoing continual reconstruction.
46. high school courses are too impractical.
47. Practical considerations should come first, beauty second.
48. A high school education makes a man a better citizen.

ADJECTIVE CHECK LIST

Check each of the adjectives which you feel is descriptive of your feeling, state or mood at this moment. Use a double check (☒ ☒) to the left of the number of the adjective if the adjective definitely applies, a single check (☐ ☒) if it slightly or possibly applies, leave it blank if it seems not to apply or if you cannot decide, and cross the adjective out with a straight line if it definitely does not apply. Leave less than half of the adjectives blank (i.e., 37 or less).

☐ ☐ 1. bored	☐ ☐ 26. light-headed	☐ ☐ 51. uneasy
☐ ☐ 2. neutral	☐ ☐ 27. capable	☐ ☐ 52. jittery
☐ ☐ 3. serious	☐ ☐ 28. confused	☐ ☐ 53. upset
☐ ☐ 4. careful	☐ ☐ 29. cautious	☐ ☐ 54. threatened
☐ ☐ 5. kindly	☐ ☐ 30. headache	☐ ☐ 55. agreeable
☐ ☐ 6. witty	☐ ☐ 31. amused	☐ ☐ 56. disinterested
☐ ☐ 7. washed-out	☐ ☐ 32. fearful	☐ ☐ 57. industrious
☐ ☐ 8. worried	☐ ☐ 33. restless	☐ ☐ 58. keyed-up
☐ ☐ 9. indifferent	☐ ☐ 34. annoyed	☐ ☐ 59. sympathetic
☐ ☐ 10. helpful	☐ ☐ 35. blue	☐ ☐ 60. powerful
☐ ☐ 11. friendly	☐ ☐ 36. goodnatured	☐ ☐ 61. warm-hearted
☐ ☐ 12. attentive	☐ ☐ 37. intoxicated	☐ ☐ 62. tense
☐ ☐ 13. scared	☐ ☐ 38. doubtful	☐ ☐ 63. frightened
☐ ☐ 14. quiet	☐ ☐ 39. nervous	☐ ☐ 64. calm
☐ ☐ 15. unsure	☐ ☐ 40. startled	☐ ☐ 65. disturbed
☐ ☐ 16. dizzy	☐ ☐ 41. suspicious	☐ ☐ 66. emotional
☐ ☐ 17. tired	☐ ☐ 42. shocked	☐ ☐ 67. anxious
☐ ☐ 18. reserved	☐ ☐ 43. easygoing	☐ ☐ 68. optimistic
☐ ☐ 19. nonchalant	☐ ☐ 44. contented	☐ ☐ 69. critical
☐ ☐ 20. regretful	☐ ☐ 45. defiant	☐ ☐ 70. obliging
☐ ☐ 21. adventurous	☐ ☐ 46. cheerful	☐ ☐ 71. peaceful
☐ ☐ 22. cooperative	☐ ☐ 47. drowsy	☐ ☐ 72. sexy
☐ ☐ 23. dubious	☐ ☐ 48. horrified	☐ ☐ 73. elated
☐ ☐ 24. solemn	☐ ☐ 49. apprehensive	☐ ☐ 74. responsive
☐ ☐ 25. alarmed	☐ ☐ 50. hopeful	☐ ☐ 75. excited

AFTER QUESTIONNAIRE

Directions: Choose only one answer for each question by marking an X in the box (as follows: ☒) after that statement which you think is the best answer, or which best describes your feelings regarding the initial statement.

PART I. Re: "T.V." Film Spot

- (1) Which of the following best describes how you felt while viewing the film?
- Alarmed ☐ 1
Somewhat troubled or anxious ☐ 2
Neutral or indifferent ☐ 3
Contented and/or hopeful ☐ 4
Elated ☐ 5
- (2) Did you feel that the message of the film was generally hopeful, neutral, or generally not hopeful about solving the man-caused forest fire problem?
- Generally hopeful ☐ 1
Generally neutral ☐ 2
Generally not hopeful ☐ 3
- (3) Did you feel that the scenes portrayed were generally very pleasant, pleasant, unpleasant, or very unpleasant?
- Very pleasant ☐ 1
Pleasant ☐ 2
Unpleasant ☐ 3
Very unpleasant ☐ 4
- (4) Which of the following statements most accurately describes the message of the film?
- Forests will continue to be destroyed if people are not careful with fire ☐ 1
Forests will continue to grow if people are careful with fire ☐ 2
Forests will grow or be destroyed, depending on people's care with fire ☐ 3
The film I saw was not about forests ☐ 4
- (5) How interesting was this film to you?
- Very interesting ☐ 1
Somewhat interesting ☐ 2
Not very interesting ☐ 3
Not at all interesting ☐ 4

PART II. Forest and Wildland Experience

(Note: By wildland areas we mean uncultivated areas covered with brush, grass, or trees.)

- (6) Did you visit (i.e. drive through, picnic, camp, hike, swim, boat, hunt, fish, or etc.) in any forest or other wildland areas during the past year?

No ☐ 1

Yes ☐ 2

- (7) Did you live or work in any forest or other wildland areas during the past year?

No ☐ 1

Yes ☐ 2

- (8) All in all, how often would you say you have been in forest and wildland areas during the past year?

Not at all ☐ 1

1 or 2 times ☐ 2

3 to 5 times ☐ 3

6 to 10 times ☐ 4

11 or more times ☐ 5

- (9) In areas where campfire permits are required, they are required for the use of: (Check only one answer)

Gasoline or propane type campstoves ☐

Fire grates and charcoal burners ☐

Open campfires ☐

All of these ☐

Do not know ☐

- (10) Where the countryside or forests are green, one need not worry about discarding cigarette butts and used matches on the ground.

Strongly agree ☐

Agree ☐

Undecided ☐

Disagree ☐

Strongly disagree ☐

- (11) Forest fire danger in California open country is highly overrated.

Strongly agree ☐

Agree ☐

Undecided ☐

Disagree ☐

Strongly disagree ☐

- (12) The surest way to put out a campfire, assuming all these methods are available, is to: (Check only one answer)

Four water on it ☐
Completely cover with dirt ☐
Pour water on it and completely
cover with dirt ☐
Pour water on it and stir thoroughly ☐
Spread out the embers and let
it burn itself out ☐
Do not know ☐

- (13) Observing fire prevention rules is my personal responsibility.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (14) Rangers should have much more important things to do than going around checking on the fire behavior of forest visitors.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (15) If you drive your car off the road in dry grass areas:

Exhaust sparks can start a fire ☐
Sparks made by contact of metal parts of
the car with rocks can set fires ☐
Both 1 and 2 are correct ☐
Neither 1 or 2 are correct ☐
Do not know ☐

- (16) "Smokey Bear" does a good job of alerting the public to fire dangers.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (17) Schools should not be permitted to use school time for instruction in forest fire prevention.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (18) Have you ever observed a wildland fire close at hand?

No ☐ 1
Yes ☐ 2

- (19) Fire prevention literature is a waste of taxpayers' money.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (20) Even though in an experienced camper's judgment it is perfectly safe to build a fire; he nevertheless should be punished if he does so in a prohibited area.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (21) Green trees and shrubs of California:

Are very difficult to burn ☐
Will not burn at all ☐
Will catch fire and burn very rapidly ☐
Will burn only in hot summer months ☐
Do not know ☐

- (22) Because "things just happen" one should not be concerned with the prevention of fires and other accidents.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (23) People should be required to obtain fire permits much on the same basis as drivers' licenses.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

- (24) Fire prevention rules and regulations should be more strictly enforced.

Strongly agree ☐
Agree ☐
Undecided ☐
Disagree ☐
Strongly disagree ☐

PART III: Background Information

- (25) Do you live: (Check only one answer)

In a city ☐ 1
In a suburb ☐ 2
In a small town ☐ 3
On a farm ☐ 4
In the open country, but not on a farm ☐ 5

- (26) Was your previous residence: (Check only one answer)

In a city ☐ 1
In a suburb ☐ 2
In a small town ☐ 3
On a farm ☐ 4
In the open country, but not on a farm ☐ 5
I have never moved ☐ 6

- (27) Please check the highest level of education you have completed.

Some grade school ☐ 1
Completed grade school (grades 1-8) ☐ 2
Some high school ☐ 3
Completed high school (grades 9-12) ☐ 4
1 to 4 years of college ☐ 5
Completed college ☐ 6
Post graduate work ☐ 7

(28) Please check the age category you represent.

- 10 or under ☐ 1
- 11 - 13 years ☐ 2
- 14 - 20 years ☐ 3
- 21 - 24 years ☐ 4
- 25 - 34 years ☐ 5
- 35 - 49 years ☐ 6
- 50 - 64 years ☐ 7
- 65 and above ☐ 8

(29) Were you fully employed (30+hours/week) for the entire past year, or did you work part-time or just part of the year?

- Fully employed ☐ 1
 - Part-time or just part of year ☐ 2
 - No work at all:retired or disabled ☐ 3
 - No work at all:student ☐ 4
 - No work at all:housewife ☐ 5
 - No work at all:unemployed ☐ 6
 - No work at all:other (specify below) ☐ 7
-

(30) Are you married; widowed, divorced, separated; or single (never married)?

- Married ☐ 1
- Widowed, divorced, separated ☐ 2
- Single (never married) ☐ 3

(31) Sex:

- Male ☐ 1
- Female ☐ 2