

Persuasion and instructional media:  
The use of a fear provoking videotape to change attitudes  
toward smoking in field dependent/independent college students

by

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## CHAPTER 1. INTRODUCTION

In 1969, at Cubberly High School in Palo Alto, California, a social studies teacher named Ron Jones conducted an experiment involving persuasion with his classes. The experiment began after students viewed a movie on the treatment of Jewish people by the German government during the holocaust years of World War II.

Jones' students stated they could not understand how an entire country could be persuaded to condone such violent acts. Jones began his persuasion experiment by writing "STRENGTH THROUGH DISCIPLINE" on the chalkboard. He further reinforced the message by pointing out the beauty of discipline in all areas where a person's success was determined by will power. Areas such as art, dancing, sports, drama, and academics were discussed. Jones instituted strict discipline to illustrate the point. Students, at first skeptical, expressed positive feelings as they practiced correct posture, took assigned seats upon command, and answered questions in a controlled manner. Students discovered they were more attentive and efficient as even the fringe members of the class were brought together by a new found sense of belonging and unification.

Jones continued the enforcement of his code of strict discipline and gave the group an identity by calling it The Wave. He assigned some students to watch and report on other student's activities. Student support for The Wave reached the fanatic level as students publicly

declared their support of The Wave. Students began cutting other classes to attend Jones'. There were reports of students who spoke out against the experiment being verbally and physically harrassed. Censorship was even applied to school publications concerning the experiment.

The experiment came to a climactic end when Jones brought The Wave members into the school auditorium to hear what he said was a nationally broadcast address by a leader of other Wave organizations across the country. By now, The Wave membership was over half the student population and only three months had passed since the first day the topic was presented in class. Jones showed the auditorium audience an address by Adolf Hitler included in the movie Jones had initially shown his class on the holocaust. The auditorium was stunned to learn they had been persuaded to exhibit behavior similar to the kind they had previously stated they could never follow.

The ease and speed that Jones was able to change his students' attitudes focused attention on the use of attitude change by teachers in schools. The use of fear, intimidation, persuasion, and coercion frequently used by teachers on students caused many to question if the Jones experiment in Palo Alto was unique or just a common event that happened to be well-publicized.

#### Purpose of the Study

Disraeli said, "Fear makes us feel our humanity." Educators have intuitively realized this for years, noting students seem to respond best to one of two stimuli: those things the students really like, and

those things the students really hate. Some current research shows this feeling may have some basis in fact. "Learners who experience a purposeful emotional involvement or arousal during instruction are likely to change their attitudes in the direction of the mediated message" (Simonson, 1981).

Why is it important to change attitudes of students? In spite of the possible negative consequences of misused attitude change, as "The Wave" experiment demonstrated, it is important to study attitude change because attitude change often leads to an influencing of behaviors. This study will look at a number of aspects of attitude change including why and how attitudes are altered. Second, the study will explore the use of media to change attitudes. Third, the study will examine why there is a variation in the amount of change in attitude that may be related to the type of media used to deliver the message, the type of message, and the difference in learning styles of students.

Educators have long felt student attitudes were important in the learning process because of the role of attitudes in directing learner behavior. However, researchers have been unsuccessful in identifying a cause and effect relationship between liking and learning, even though common sense would seem to indicate someone would be likely to try to do well at something they liked.

However, the link between liking and learning need not be the main reason educators concern themselves with shaping or changing attitudes. There are situations, especially social situations, when the need to

shape or change an attitude related to an important behavior is the primary goal of a learning activity. Examples of this would be fastening seat belts in automobiles, wearing safety glasses at work, obtaining immunization shots, or proper nutrition for mothers during pregnancy.

The three categories of messages delivered by media are informative, entertaining, and persuasive. Communication experts generally agree that regardless of whether they are primarily informative or entertaining, all messages carry with them some form of persuasion (Rose, 1963).

The problem examined in this study was how to use media to change attitudes and why some learners' attitudes were changed more than others'. There are some possible reasons for this variation such as the medium used to deliver the message or the organization of the message. Still, another possibility is the way a learner processes the message.

#### Relationships:

##### Media, Field Dependence, Fear, Attitude

Simonson (1978) did an extensive review of research dealing with learner attitude and media. Simonson's study showed learners liked to learn from media and, all other things being equal, were more likely to experience attitude change when the media type used to deliver a persuasive message was concrete, realistic, and had a variety of visual cues for the learner. However, media professionals agreed that there was not one best way to change attitudes for all students. Most professionals did feel that attitude change occurred because of interactions between the message, the media delivery system, and the characteristics of the learner.

### Field dependence

Researchers, such as Cronbach (1975), have been studying Aptitude-Treatment-Interaction in order to obtain a better idea of the relationship between learner characteristics and instructional treatment. They have worked under the assumption that different groups of learners do learn better under certain circumstances. Wager (1975) went even further by saying learning style and media were more highly related to effective attitude change than to cognitive or knowledge growth.

According to Zimbardo and Ebbesen (1969), every member of an audience has certain persuasibility characteristics that include intelligence, motivation, and knowledge. Attitudes are comprised of what people know about a topic, their actions related to the topic, and general conceptualization of the topic. Additionally, because of the way a person processes information, their cognitive style will have an impact on their attitude.

Witken et al. (1962, 1977) did extensive research on cognitive styles and defined them as pervasive traits affecting a person's perception and personality. Briefly, cognitive styles are the characteristic, self-consistent modes of functioning that individuals show in their perceptual and intellectual activities. Field dependence was considered such a style and was listed by Ausburn and Ausburn (1978) as one of eleven common styles. Field dependent learners generally perceive information as a whole and rely on external referents as guides. Field independent learners generally perceive the different



parts of information and rely on internal referents as guides. Kloock et al.'s 1982 study showed that field independent learners, as a group, had their attitudes changed more than field dependent learners as a group when presented with a persuasive film designed to change their attitudes toward soil conservation. McLeod et al. (1978) reported field dependence as being stable over a long period of time and consistent across a variety of tasks. It was also noted that level of field dependence had an overriding effect on the way an individual reacts.

#### Fear and attitude change

Janis and Feshback (1953) documented fear appeal as a technique frequently used to influence behavior and attitude. Implicit in the use of fear is the assumption that when fear is aroused subjects will become more highly motivated to accept beliefs or recommendations advocated by the communicator. However, Janis and Feshback also noted that under certain conditions an individual's psychological and intellectual mechanisms may trigger reactions that are highly undesirable from the standpoint of the communicator. These defenses could be evidenced by withdrawal from the problem area, apathy towards the problem, or even an increase of the problem behavior. Janis and Feshback further reported that while fear was frequently used in influencing behavior and attitudes, it is unclear why some learners change more or less than other learners.

A contemporary problem area is smoking. The Surgeon General of the United States has declared that cigarette smoking is hazardous to smoker's health (Public Health Service, 1964). Since the initial warning, the total number of cigarettes smoked has gone down. However, research shows the number of teenage women who smoke has increased (Center for Disease Control, 1976; Wechsler and Gottlieb, 1979). Efforts have been made to change the attitudes of teenage women about smoking using media. Films, such as the one used in this study, have been one technique used to reach young female smokers with the message that smoking is bad for them.

#### Summary

The problem that this study deals with is the use of media to change attitudes about smoking. The study will examine why some people's attitudes are changed more than others by looking at the way the message is delivered, by the way the message is organized to effectively use fear, and by the way the message is processed by the learners.

#### Definitions

##### Attitude

A mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related (Thomas and Znaniecki, 1918). Zimbardo and Ebbesen (1970)

added to this definition an explanation of the three components of attitude: Affective, Cognitive, and Behavior. The affective component was stated to be a person's evaluation of, liking of, or emotional response to some object or person. The cognitive component was defined as a person's beliefs about, or factual knowledge of the object or person. The behavioral component consisted of the person's overt behavior directed towards the object or person.

#### Attitude toward smoking

A person's evaluation, liking, or emotional response toward the smoking of tobacco as measured by the Smoking Attitude Scale.

#### Smoking Attitude Scale

Smoking Attitude Scale (S.A.S.) is an instrument developed by D. J. Baer (1966) to determine attitude toward smoking. In this study, attitude towards smoking is operationally defined as the post-treatment SAS score. This measure was administered immediately after treatments.

#### Attitude change

Operationally defined as the difference between the scores obtained on SAS for the two treatment groups when compared to the control group.

#### Treatment groups

1. The "Fear Alone" group viewed a fifteen-minute videotape containing only fear evoking scenes about smoking edited

from the film, "The Feminine Mistake." This group was given the SAS after viewing.

2. The "Fear with Alleviation" group viewed a fifteen-minute videotape that contained fear-evoking scenes and scenes that attempted to alleviate the stressful situations. Scenes were derived from the film, "The Feminine Mistake." This group was given the SAS after viewing.
3. The "Control" group was not given a videotape treatment but was given the SAS attitude measure.

#### Field dependence

Learner characteristic typified by learners who rely on external referents as guides in information processing as determined by the Consulting Psychologists Press Group Embedded Figures Test (GEFT) (Witkin et al., 1971). For this study, field dependent learners were operationally defined as those with GEFT scores from 0 to 12 on a scale of 0 to 18.

#### Field independent

Learner characteristic typified by learners who rely on internal referents as guides in information processing as determined by GEFT. For this study, field independent learners were operationally defined as those with GEFT scores from 14 to 18 on a scale of 0 to 18.

### Fear

An unpleasant and often strong emotion caused by expectations, perceptions, or awareness of danger. Fear is operationally defined as the individual scenes in the videotape treatments designed to arouse stressful feelings of danger for the viewer.

### Persuasion

The conscious attempt by one individual to change the attitudes, beliefs, or behavior of another individual or group of individuals through the transmission of some message.

### Null Hypotheses

The null hypotheses tested in this study were:

1. There is no significant difference in attitude between learners in either treatment group and the control group.
2. There is no significant difference in attitude between field dependent and field independent learners regardless of treatment.
3. There is no significant difference in attitude between males and females regardless of treatment.
4. There is no significant difference in attitude between current smokers, non-smokers, and former smokers in each treatment group.
5. There is no significant difference in attitude between subjects with parents having different smoking habits.

6. There is no significant difference in attitude of field independent learners regardless of treatment.
7. There is no significant difference in attitude of field dependent learners regardless of treatment.
8. There is no significant interaction between treatment and field dependence/independence.

## CHAPTER 2. REVIEW OF THE LITERATURE

This Review of the Literature attempted to identify previous research in the areas important to this study and its hypotheses. This review will attempt to give a history of attitude research as well as the research that deals with the procedures for changing attitudes. This study will also examine the research done in the area of media and attitude change. Also being looked at will be the Aptitude-Treatment-Interaction research that examines field dependent/field independent learners.

The study is a modified replication of Teryl Kooock et al.'s 1982 study. An explanation of the Klock study is included. Since the study's treatments included concepts of Smoking and Fear, the Review of Literature also has an overview of research done in these areas.

### Media - Attitude Research

In the 1950s and 1960s, many films were produced by public and private organizations that attempted to change the attitudes of learners by using fear. Intended to persuade viewers of the need for tougher drunk driving laws, the need to wear seatbelts, or the hazards of smoking, for example, the productions used fear as a key ingredient of the treatment for delivering their message. It was thought that by scaring viewers it would be likely that their attitudes would be changed to come into line with the socially preferable position advocated in the film, and that since attitudes are "pre-dispositions to respond," related behaviors would be influenced.

In order to understand how this line of reasoning came to be, a look at the history of media-attitude research is in order. The research about media and attitudes appears to have developed through four phases. Phase one, the earliest type of research, was focused on a learner's preference for one media type over another media type. Phase two was research into a learner's preference of one media type over another media type. Phase three was research done concerning the learner's attitude toward the content of the media. Phase four was research done concerning the learner's attitude change brought about through media (Simonson, 1978).

As early as 1931, Thurstone found film could change attitudes in both a positive and a negative direction. A variety of studies have shown students like to learn from media. This included learning from television (Neidt, 1967), films (Redemsky, 1959), and still pictures (VanderMeer, 1961). There were generally considered to be three major purposes for media: to entertain, to inform, or to persuade (Rose, 1963). It should be noted that learners reported liking media better when it was used for entertainment rather than informational purposes (Greenhill, Carpenter, and Ray, 1956).

Comparison studies that examined the relationships between media did not show consistently significant differences in learner achievement or attitude when various media or methods were compared (Browning, 1975). However, there appeared to be a notable difference when media was used compared to the "traditional" lecture. Research showed there was a positive learner reaction to the mediated instruction over the lecture method (Morrison, 1967).



Generally speaking, merely converting a message from one media delivery type to another media delivery type had little positive effect on the attitudes of learners towards the instructional activity or the content presented. Researchers, while agreeing media had an effect upon influencing learners' attitudes, demonstrated in a variety of studies (Walton, 1963; Bachens, 1970; Meyer and Gute, 1972; Levine, 1973) that there was no "best" medium for influencing attitude.

#### Attitude Change

How then are attitudes changed by media? The most current stage of research on instructional media and attitudes concerns how attitudes change. Zimbardo and Ebbesen (1970) identified the three components of attitude as Affective, Cognitive, and Behavioral. In the affective area falls items such as a learner's like or dislike of a subject or object and the learner's emotional response. In the cognitive area is the learner's factual knowledge about a subject. In the behavioral area are the learner's overt actions for or against a topic. Researchers have looked into methods of using these individual components of attitude to change the attitudes of learners.

Garschow (1970), as well as Booth and Miller (1974), are examples of researchers who examined the affective component of attitude. These studies seemed to point to "realistic" media as being preferred by learners. Levonian (1963) offered a supportive study that stated technically well done media that caused intellectual arousal had a significant relationship to retention and to attitude.

The cognitive component of attitude appears to be changed most effectively when new information is presented (Jouko, 1972). When information was presented in a credible manner by a credible source (O'Brien, 1973), there was often a predictable influence produced.

The behavioral component of attitude presents the most obvious kind of attitude study. Learners who were actively involved in a media production tended to be more favorable to the mediated message (Simonson, 1977). A variety of researchers (Janis and Feshback, 1953; Miller, 1969; Rogers, 1973) have concluded that any techniques of production, design, or delivery that tended to increase a learner's emotional involvement were likely to produce desired attitudes or attitude changes if there was opportunity during the instructional situation for the learner to alleviate any excessive arousal produced.

Reflecting back to research concerning attitude toward content of media, Simonson (1980) concluded that for three general types of media (television, film, and slides), altering only the media type will not result in any significantly different attitude change toward the message delivered. Simonson did say that attitudinal outcomes were produced when presentations were designed to bring about those changes, just as cognitive outcomes can be produced in well-developed instructional lessons.

Is it possible to come up with a cookbook for persuasion of learners? Probably not, but in 1979, Simonson did identify six guidelines that, if included in the planning, production, or use of mediated

instruction, would contribute to the development of desired attitudinal outcomes. Simonson's guidelines were based on results gathered from over one hundred research studies on attitudes and media. Simonson's six guidelines are:

1. Learners react favorably to mediated instruction that is realistic, relevant to them, and technically stimulating.
2. Learners are persuaded, and react favorably, when mediated instruction includes the presentation of new information about the topic.
3. Learners are affected in a positive manner when persuasive messages are presented in as credible a manner as possible.
4. Learners who are involved in the planning, production, or delivery of mediated instruction are likely to react favorably to the instructional activity and to the message delivered.
5. Learners who participate in post-instruction discussions and critiques are likely to develop favorable attitudes toward delivery method and content.
6. Learners who experience a purposeful emotional involvement or arousal during instruction are likely to change their attitudes in the direction advocated in the mediated message.

The idea of emotional involvement or arousal has been studied to see how arousal could be used to persuade a learner to change an attitude. Miller (1980) said persuasion was the conscious attempt by

one individual to change attitudes, beliefs, or the behavior of another individual or group through transmission of some message. In persuasion research, attitude is an internal mediator that intrudes between presentation of a particular overt stimulus and observation of a particular overt response (Fishbein and Aizen, 1975).

Robert Bostrom (1981) stated persuasion could be thought of as a process in which change occurs. Change is the one element distinguishing persuasion from other forms of communication activity. Bettinghaus (1973) built on this component of "change" by stating that perception of a persuasive message was not a passive, but an active process on the part of the learner or receiver of the message. Bettinghaus went further to say the attitudes and beliefs of the message receiver mediate the way the message will be received and responded to. Petty's 1977 study on cognitive response made the inference that individuals persuade themselves to adopt or reject the position advocated by the communicator. Miller (1980) points out that persuasion is not coercion. Coercion, says Miller, is guns or economic sanctions. However, Miller adds, coercion plays an indirect part in persuasion.

#### Aptitude Treatment Interactions

One of the important aspects of attitude research has been the work done in the area of Aptitude-Treatment-Interaction (A.T.I.). A.T.I. researchers have examined the interactions between the messages, the media delivery system, and the characteristics of the learner.

A.T.I. studies differ in design from comparison studies that have examined only macro-differences between media.

Extensive investigations have been conducted recently on the characteristics of learners, with much of the focus on the field dependence aptitude. Ausburn and Ausburn (1978) conducted research on cognitive styles and listed field dependence as a cognitive aspect deeply ingrained in a learner's personality that was a result of environmental influences of early childhood training. The study also reported that field dependence was a rather stable variable over long periods of time and remained consistent across a variety of tasks. Field dependent traits were also fairly dominant determinants of the way an individual reacted to the environment (McLeod et al., 1978).

McLeod et al. (1978) provided research results that stated that field dependent learners relied on external referents as guides in information processing while field independent learners rely on internal referents. Field dependent learners have been reported to view concepts holistically, and respond to a stimulus as a whole entity rather than parts of the whole. Field independent learners appeared to be capable of seeing the many components of a message. Field dependent learners also have been reported to appear to make use of external social frames of reference in determining their attitudes. Field dependent learners were reported to be highly influenced by social cues from others and like to become involved with people. Field independent learners, on the other hand, had a more non-social orien-

tation. They were more impersonal and solitary than their field dependent counterparts and appeared to be more insensitive to social cues.

Eagle (1969) found field dependent learners to be better at learning and remembering incidental social material and also to be more affected by external reinforcement like praise or criticism. Ferrel (1971) reported field independent learners had strong self concepts and showed more leadership than field dependent students. One of the more interesting results reported about field dependency was that field dependent learners were found to be more influenced by the Janis-Field Persuasibility Test for written communication than were field independent learners. The Janis-Field Persuasibility Test is a measure of a learner's tendency toward dissuasion by persuasive messages. In other words, field dependent learners appeared to be more readily persuaded toward a certain position advocated by the written word than were field independent learners (Graham, 1959). It should be stressed that superior performance in cognitive tasks that require disembedding, which is at the heart of the field dependence dimension, carries no implication about competence in other classes of cognitive tasks (Witken et al., 1971).

#### Kloock's Study

This study is a modified replication of a study done by Teryl Kloock in 1982. Kloock was attempting to study the use of media to change attitudes as those attitudes pertained to soil conservation.

She used two treatments to deliver the same content. One was a film on soil conservation and the second treatment was a slide presentation using stills taken from the motion picture. The narrative both groups received was the same. Kloock also tested and divided the research subjects according to their level of field dependence/field independence. She reported that the field independent subjects had greater attitude change than field dependent subjects and that field independent learners in the film treatment group had significantly more positive attitude change than any other group. In other words, the field independent subjects who viewed the persuasive film had more attitude change than any other treatment or control group.

One of the differences between the Kloock study and this study was the content of the treatment. Kloock chose soil conservation as the theme of the persuasive message while this study selected smoking. There have been many studies done in the area of smoking behavior and attitude. The Surgeon General of the United States, in his 1964 message on smoking habits, announced that cigarette smoking was considered hazardous to the smoker's health. Before the Surgeon General's announcement, and certainly since, many efforts have been made to alter people's attitudes towards smoking.

O'Keefe (1971) found in a study of adult smokers that they understood the message but refused to change their behavior. O'Keefe found that almost 100% of the subjects who smoked agreed that it was bad for health but 66% did not want to quit smoking.

Merhi et al. (1968) found the same dichotomy between smoking attitude and behavior in younger people. They set up two methods to study high school and junior high students involving an individualized approach and a mass communication approach. No significant difference was found in the two approaches in changing behavior of smokers. The study did find the high school students liked the mass communication approach the best, while the junior high students showed a preference to the individualized approach.

The physical effect smoking has upon a subject's ability to reason has also been studied. Bowen's (1969) research included a study of the physical effect of smoking on subject's responses to anxiety eliciting cues. Bowen monitored the heart rate, skin resistance, and muscle potential of smokers as they watched a fear evoking film called "Subincision." All 96 subjects were smokers. Half the group was encouraged to smoke during the film and half was told not to smoke. The hypothesis being tested was that smoking will reduce anxiety. The results showed that smoking raised the subject's heart rate, raised the subject's skin resistance, and lowered a subject's muscle potential. Smoking behavior did not affect self report measures of anxiety. Bowen concluded anxiety was a unitary concept not directly related to the physical act of smoking.

Another variable this study examined was the use of fear in messages. Dabbs and Leventhal (1966) reported that fear and its influence upon learners depended upon the situation in question, but



generally, fear worked best when immediate action by the subject was possible. Fear appeals seemed to lose their persuasive effectiveness over time if not reinforced. Dabbs and Leventhal also found fear appeared to be most effective when used against a person's loved ones. This idea was earlier reported by Hovland and Weiss (1951). Koeske and Crano (1968) reported fear effective when it came from a credible source, and Bryan and Test (1967) reported positive results when the fear message dealt with a subject that the listener was unfamiliar with. Mills and Jellison (1968) reported fear effective when aimed at a person's esteem.

Rogers' 1973 study appeared to reinforce the thought that fear without an alleviation of the fear is not as effective as fear with some alleviation provided the viewer. Broadbent (1978), in research on arousal due to noise, found that as a person became more aroused there was a tendency to select information from a smaller data area. In other words, there was a greater tendency to select the first solution to a problem that came to mind. The study of fear is useful in the light of Haskins' 1966 study showing that information by itself almost never changes attitudes. Therefore, the persuasive methods one uses to deliver the information intended to persuade is important to understand.

### Summary

There are many relationships that occur in the study of media and attitude change. This Review of Literature attempted to look at the development of media-attitude research through its four phases. The first was research on learner like or dislike of media. Next, were examinations of learner preference for one media type over another media type. Next, came learner attitude toward the content of the mediated instruction, and last, and most important, were studies that attempt to change learner attitudes.

This Review of the Literature looked at the procedures and guidelines for attitude change. Simonson's six guidelines for attitude change were listed. The proposed study was classified as an Aptitude-Treatment-Interaction investigation (A.T.I.). The aptitude examined was field dependence/field independence. The treatments used two variations of a persuasive film dealing with smoking and copied on videotape.

Since this study was a modified replication of Teryl Kloock's 1982 study, the major components of Kloock's research were reported. The study found that field independent learners appeared to be more susceptible to attitude change than field dependent learners. The research study described in the next chapter attempted to re-examine these findings.

### CHAPTER 3. METHODOLOGY

An important aspect of any research effort is the methodology used. Critical readers of the research should be provided with the steps and operations used in the study so they might evaluate the outcomes in terms of the study's methodological strengths and weaknesses. Other researchers also might wish to replicate the experiment by following the procedures described.

The purpose of this chapter is to explain the procedures used to examine the research problem. The description of the methodology will include sections on experimental design, subjects, measures of the dependent variable, procedures, and limitations.

#### Experimental Design

Campbell and Stanley's (1963) experimental design number four, the Randomized Control-Group Posttest Only Design, was used in this study. Students were randomly assigned for treatment groups, treatments were administered, and a post-test was given. A pre-test was omitted to minimize pre-test bias of the groups. The average of each group's post-test scores were compared with each other to determine the significance of the treatments. The appropriate test for significance at the .05 level was then applied to ascertain whether any differences produced were greater than what might have occurred by chance. For this experiment, this design was considered superior to others (Campbell and Stanley, 1963).

Here is a list of the steps followed for this experiment:

1. Selection and review of the film, The Feminine Mistake.
2. Production of videotape treatments from the film.
3. Evaluation of treatments by media professionals.
4. Selection of subject population.
5. Administration of Group Embedded Figures Test (GEFT) that served as a measure of the independent variable field dependence.
6. Random assignment of subjects to treatment groups.
7. Administration of treatments.
8. Administration of Smoking Attitude Scale (S.A.S.) as a measure of the dependent variable, attitude toward smoking.
9. Administration of descriptive questions and treatment quality question.
10. Determination of reliability of S.A.S.
11. Testing of hypotheses.

#### Dependent variable

- A. Measure of subject's attitude toward smoking (S.A.S.)

#### Independent variables

- A. Method of presentation
  1. Fear alone videotape
  2. Fear with alleviation videotape
  3. Control group

B. Learner characteristics

1. Level of field dependence
2. Gender
3. Parents' smoking habits (both smoked, one smoked, neither smoked)
4. Subject smoking habits (current smoker, former smoker, non-smoker)

Subjects

The subjects were all Iowa State University students who were enrolled in Education 301, an instructional media course for teacher education students. The study was conducted during Spring Semester, 1982. The assignment of subjects to treatment was as follows:

	Fear alone	Fear/alleviation	Control
Field dependent	15	22	14
Field independent	<u>20</u>	<u>24</u>	<u>22</u>
Total	35	46	36

Total N = 117

Measure of Dependent Variable

The standardized test of the dependent variable was called the Smoking Attitude Scale (S.A.S.) and was developed by D. J. Baer in 1964. The reliability Baer reported for the Smoking Attitude Test was .80, .75, and .80 for the three treatment groups used in the 1964 study.

In the post-experiment analysis of the S.A.S. instrument, it was found that it had a reliability coefficient of  $r = .84$ . The S.A.S. had twenty-two items and used a one through five response set, from strongly agree to strongly disagree. The Cronbach Alpha test of internal consistency was used to determine reliability (Hull and Nie, 1981).

The Cronbach Alpha formula for reliability is  $n/n-1(1-sIV/TV)$ , where  $n$  equals the number of items,  $IV$  equals the item variance, and  $TV$  equals the total variance.

#### Procedure

The group of college students who participated in this study was randomly assigned from sections of Education 301 at Iowa State University. The Human Subjects Requirement at Iowa State University was satisfied. The actual experiment was conducted beginning on April 12, 1982, and ending April 26, 1982.

One hundred thirty-five Education 301 students were randomly assigned from the class lists and were given the Consulting Psychologists Press Group Embedded Figures Test (GEFT). This test was used to identify field independent or field dependent learners. The GEFT (Witkin, Oltman, and Raskin, 1971) is a perceptual test that asks subjects to locate a simple figure they have seen before within a larger and more complex figure. There are eighteen embedded figures that must be found within a ten-minute time limit for a perfect score on the test. GEFT has a reliability estimate of .82.

The students who tested at the low extreme on GEFT with a raw score of 12 or less were considered field dependent and the students who scored at the high extreme with a raw score of 14 or more were considered field independent for the purposes of this study. The remaining students who scored at the median on the GEFT and who did not demonstrate a tendency towards being either field dependent or field independent were not included in data analysis procedures.

Next, the students were randomly assigned to one of three groups: Fear Alone, Fear with Alleviation, and Control. The distribution of the 135 subject's GEFT scores were (the first number is the GEFT score and the second figure the number who attained that GEFT score): 1 = 2, 2 = 1, 3 = 0, 4 = 5, 5 = 2, 6 = 5, 7 = 1, 8 = 9, 9 = 8, 10 = 5, 11 = 10, 12 = 8, 13 = 13, 14 = 6, 15 = 8, 16 = 11, 17 = 22, 18 = 19.

The Fear Alone group viewed a fifteen-minute videotape presentation that contained only fear evoking scenes about smoking and smoking's effects upon women. The Fear Alone treatment started with cosmetic reports on how women who smoke have more skin wrinkles, then presented a report on how the oxygen level goes down and the toxic gas level goes up in the blood of women who smoke. Next, a report was shown on how the respiratory systems of unborn babies are affected when pregnant mothers smoke. The Fear Alone treatment videotape ended with an interview with a woman who had lung cancer caused by smoking, and who was obviously, at 90 pounds, in an emaciated state. The interview faded out with the narrator commenting that a few days after the interview the cancer patient had died.

The Fear with Alleviation group was also shown a fifteen-minute videotape that contained the same fear evoking scenes as the Fear Alone group. These scenes were shortened during editing. This group was also shown additional scenes that included group therapy clinics on how to stop smoking, hints on how the individual could cut down and eventually stop smoking, testimonies from non-smokers and former smokers about how good the quality of a non-smoking life was, and a doctor's report that the human lung begins to repair itself the moment a person quits smoking.

The control group was not shown either treatment. The control group was separated from the treatment groups and taken to the Instructional Resources Center where they were administered the S.A.S. All three groups participated in treatments at the same time during their regularly scheduled class period.

The two experimental treatment groups viewed the videotapes in different rooms. There was a mixing of viewing locations during the week to balance for any influences the site where the videotapes were seen might have had. Once treatments had been administered, all students were immediately given the Smoking Attitude Scale (S.A.S.). The data were then analyzed using t-tests, analysis of variance tests, and multiple analysis of variance tests. Descriptive statistics were obtained and examined in order to report conclusions.



### Treatments

The major part of the treatment was a film produced by Dave Bell Associates, Incorporated, titled *The Feminine Mistake*. The film was used with the permission of Dave Bell. It was sponsored by the American Cancer Society. The film was 23 minutes in length and dealt mainly with the statistical increase in numbers of women smokers and the resulting dangers to their health. Major components of the film included:

- Statistics about the increased number of smoking women and the increased number of deaths of women from smoking-related ailments such as cancer
- Report on relationship between smoking and wrinkled skin
- Experiment showing the oxygen level going down and the toxic carbon monoxide level going up in women who smoked one cigarette
- Experiment showing that the respiratory system of an unborn baby stopped functioning when its mother smoked one cigarette
- Interview with a woman victim of throat cancer who had her larynx removed
- Interview with a woman lung cancer victim talking about how she never thought cancer would happen to her. The narrator later added that she died days after filming the interview.
- Interviews with teenage girls who smoked, saying they wish they had never started
- Report on efforts by schools and individuals to get smokers to quit

- Testimonials from former smokers and non-smokers on how great the quality of a non-smoking life was
- Reports from doctors that the human lung begins to repair the damage done by smoking when smoking stops
- Appeals to stop smoking from actress Bonnie Franklin, star of the television show, One Day At A Time

From the original 23-minute film, two fifteen-minute videotapes were produced. One of the videotapes was for the Fear Alone group treatment and showed only the fear evoking features from the original film such as the dying patient and the medical reports of smoking effects on skin and unborn children.

The second fifteen-minute videotape was designed for the Fear with Alleviation treatment group and, while it included many of the fear factors related to cancer and health, it also included information about stop smoking groups, support agencies for smokers who wanted to quit, and a segment on the advantages of being a non-smoker. These segments were thought to contribute to the alleviation of fear (Janis and Feshback, 1953).

The two videotapes were evaluated by media professionals at Iowa State University's Instructional Resource Center and WOI-TV and determined to be comparable in quality. In addition, the subject's responses to a question on the technical quality of the videotapes on the post-test evaluation showed they considered the quality of the videotapes to be equally acceptable.

### Administering the Measurement Instrument

Treatments were administered to students during their regular Education 301 class time. Following treatments, all groups had the same directions read to them pertaining to their completion of the Smoking Attitude Scale (S.A.S.).

Of the original one hundred thirty-five subjects, there were five subjects that were absent from one of the testing or treatment sessions. They were dropped from the experiment. This reduced the sample size to one hundred thirty. An additional thirteen subjects who scored at the median on the GEFT test of field dependence were also dropped in order to give a stronger division between those categorized as field dependent and those categorized as field independent. For final data analysis, there were 117 subjects.

### Limitations

Efforts were made to reduce the influence of intervening factors that could have affected this study. Several problem areas that may have limited the generalizability of the results of the study included:

1. The treatments were not given at the same time of day to all subjects because of different class meeting times. This may have influenced subject responses because of:
  - a. preconditioning by students who had received the same treatment and measure earlier,
  - b. higher absenteeism at one time of the day.

2. The vast majority of subjects used in the study were education majors. The results of the study might possibly be limited to that population alone if it is believed that education majors differ significantly from the average population.
3. Most of the subjects were women.

#### Summary

To begin the experiment, 135 subjects were assigned from Education 301 classes at Iowa State University. These subjects were given the GEFT to determine their levels of field dependence. Five subjects were absent from treatment and testing sessions and thirteen were at the GEFT median. These subjects' scores were not included in data analysis.

The remaining 117 students were divided randomly into one of three treatment groups, Control (no treatment), Fear Alone, and Fear with Alleviation. The experimental treatments were fifteen-minute video-tapes, followed immediately by a test of a person's attitude towards smoking (S.A.S.). The score on the S.A.S. was considered to be this experiment's dependent variable. The S.A.S. scores were used to test hypotheses.

## CHAPTER 4. RESULTS

Responses from the 117 subjects who were identified as having a tendency to be either field dependent or field independent, were used in the statistical analysis portion of this study. Each subject received one of three treatments:

1. A fifteen-minute videotape with only fear evoking scenes
2. A fifteen-minute videotape with fear evoking, and alleviation from the fear, scenes
3. The control group that viewed no videotapes

A post-test measure called the Smoking Attitude Scale (S.A.S.) was utilized as a test of the dependent variable. In this study, the dependent variable was the total score obtained from the S.A.S. instrument.

This chapter contains the results of various tests used to evaluate hypotheses. Tests utilized to determine significance include the t-test, the analysis of variance (ANOVA), the multiple analysis of variance (MANOVA), the Scheffé test, and the Duncan procedure.

#### Test of Main Hypotheses

Each hypothesis was examined for significance by use of the appropriate statistical measure (t-test, ANOVA, or MANOVA). The Duncan and Scheffé procedures were used on several hypotheses to pinpoint exactly where a difference was located. A total of three ANOVAs, two MANOVAs, and a t-test were used in addition to Duncan and Scheffé procedures.

The following learner characteristics were identified:

1. Field dependent learners (those who scored 12 or less on the GEFT measurement)
2. Field independent learners (those who scored 14 or more on the GEFT measurement)

These treatments were administered:

1. Fear alone videotape
2. Fear with alleviation videotape
3. Control group

HYPOTHESIS 1: There is no significant difference in attitude between learners in either treatment group and the control group.

Hypothesis one was examined by using an analysis of variance test and a statistical significance was noted. The ANOVA reported there was a difference among the groups at the .001 level ( $P < .001$ ). The Duncan's test showed that the control group scored significantly more positive toward smoking than did either experimental group. The experimental groups were not significantly different (see Table 1).

HYPOTHESIS 2: There is no significant difference in attitude between field dependent and field independent learners regardless of treatment.

The analysis of the data using a two-way analysis of variance showed that there was no significant difference in attitude between field dependent and field independent learners (see Table 2).

Table 1. Analysis of variance test - attitude change for treatments

## A. Descriptive statistics

	Treatments		
	Fear alone	Fear with alleviation	Control
Mean	39.46 <sup>a</sup>	40.70	48.00
Standard deviation	9.55	10.24	11.00
Number	35	46	36

## B. Analysis of variance

Source	D.F.	SS	MS	F	P
Between	2	1562.21	781.10	7.39	0.001**
Within	114	12052.39	105.72		
Total	116	13614.59			

<sup>a</sup>Higher scores indicate a more positive attitude towards smoking.

\*\*P < .05; Duncan's test showed the control group scored significantly more positively towards smoking than did either experimental group. The experimental groups were not significantly different.

Table 2. Multiple analysis of variance - attitude change results for treatments and levels of field dependence

A. Descriptive statistics

		Treatments		
		Fear alone	Fear with alleviation	Control
Field dependent group	X	38.93 <sup>a</sup>	41.23	47.50
	SD	7.78	11.67	6.76
	N	15	22	14
Field independent group	X	39.85	40.21	48.32
	SD	10.87	8.95	13.16
	N	20	24	22

B. Multiple analysis of variance - treatment by level

Source	D.F.	SS	MS	F	P
Main effects	3	1562.56	520.85	4.810	0.003*
Treatment	2	1554.52	777.26	7.170	0.001*
Level	1	0.35	0.35	0.000	0.960
Interaction	2	24.50	12.25	0.133	0.890
Explained	5	1587.06	317.41	2.930	0.020
Total	116	13614.47			

<sup>a</sup>Higher scores indicate a more positive attitude towards smoking.



HYPOTHESIS 3: There is no significant difference between males and females regardless of treatment.

The analysis of the data showed that there was a statistical difference attributed to the treatment effect. There was no significant difference between the sexes. The SAS scores for males were uniformly more positive than were the scores of females, but these differences were not statistically significant (see Table 3).

HYPOTHESIS 4: There is no significant difference in attitude between current smokers, non-smokers, and former smokers regardless of treatment.

A 3 X 3 multiple analysis of variance test using SAS score as the dependent variable was used to test this hypothesis. A Scheffé test was also computed. There was a significant treatment effect found. Additionally, there was a significant smoking habit effect identified. Those people who were non-smokers held the strongest attitudes against smoking while current smokers held the most positive attitudes towards smoking. Former smokers generally held attitudes between the other two groups (see Table 4).

HYPOTHESIS 5: There is no significant difference in attitude between subjects with parents having different smoking habits.

Once again, the results analyzed showed the difference brought about by the treatments but failed to show any significant difference in attitude between subjects with parents having varying smoking habits (see Table 5).

Table 3. Multiple analysis of variance - attitude change by treatment and gender

		Treatments			
		Fear alone	Fear with alleviation	Control	
A. Descriptive statistics					
Males	X	46.000 <sup>a</sup>	40.870	54.000	
	SD	1.414	11.904	14.877	
	N	2	15	7	
Females	X	39.090	40.610	46.550	
	SD	9.848	9.545	9.635	
	N	32	31	29	
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B. Multiple analysis of variance					
Source	D.F.	SS	MS	F	P
Main effects	3	1731.27	577.09	5.45	0.002*
Treatments	2	1540.18	770.09	7.27	0.001*
Gender	1	187.96	187.96	1.78	0.185
Interactions	2	215.30	107.65	1.02	0.365
Explained	5	1946.57	389.31	3.68	0.004*
Residual	110	11646.81	105.88		
Total	115	13593.38	118.20		

<sup>a</sup>Higher scores indicate a more positive attitude towards smoking.

Table 4. Multiple ANOVA - attitude change for treatments and smoking habits

		Treatments			Totals
		Fear alone	Fear with alleviation	Control	
Smokers	X	56.00	52.33	67.25	60.25
	SD	-	15.26	11.50	11.67
	N	1	3	4	8
Former smokers	X	46.50	45.00	47.80	47.13
	SD	0.71	-	9.81	6.75
	N	2	1	5	8
Non-smokers	X	38.50	39.76	45.19	40.81
	SD	9.33	9.61	8.21	-
	N	32	42	27	101
Totals	X	39.46	40.70	48.00	42.57
	SD	10.87	8.95	13.15	10.83
	N	35	46	36	117

## B. Multiple analysis of variance

Source	D.F.	SS	MS	F	P
Main effects	4	3933.48	983.37	11.19	0.001 <sup>a</sup>
Treatments	2	954.65	477.33	5.43	0.006*
Smoke habit	2	2371.28	1185.64	13.49	0.001*
Interaction	4	188.74	47.19	0.537	0.710
Explained	8	4122.22	515.28	5.86	0.001*
Residual	108	9492.25	87.89		
Total	116	13614.47	117.37		

<sup>a</sup>Scheffé tests indicate that group three (smokers/control) is significantly different from groups seven, eight, and nine (non-smokers/all treatments).

Table 5. Multiple ANOVA - for treatments and parents' smoking habits

## A. Descriptive statistics

		Treatments		
		Fear alone	Fear with alleviation	Control
Both	X	47.50 <sup>a</sup>	39.33	42.60
parents	SD	7.41	6.76	12.76
smoke	N	4	9	5
One	X	39.19	37.79	50.08
parent	SD	9.33	11.59	11.15
smokes	N	16	14	13
Neither	X	37.60	43.00	48.00
parent	SD	9.71	10.33	10.54
smokes	N	15	23	18
Totals	X	39.46	40.70	48.00
	SD	10.87	6.95	13.15
	N	35	46	36

## B. Multiple analysis of variance

Source	D.F.	SS	MS	F	P
Main effects	4	1583.97	395.99	3.79	0.006*
Treatment	2	1546.81	773.41	7.40	0.001*
Parents' smoking habits	2	21.76	10.88	0.10	0.900
Interactions	4	749.14	187.29	1.79	0.140
Explained	8	2333.11	291.64	2.79	0.008*
Residual	108	11281.36	104.46		
Total	116	13614.47	117.37		

<sup>a</sup>Higher scores indicate a more positive attitude towards smoking.

HYPOTHESIS 6: There is no significant difference in attitude of field independent learners regardless of treatment.

The analysis of variance showed that there was a statistical difference that was attributed to the effect of the treatment (see Table 2).

HYPOTHESIS 7: There is no significant difference in attitude of field dependent learners regardless of treatment.

The analysis of variance showed that the statistical difference that was found by the ANOVA was due to the treatment (see Table 2).

HYPOTHESIS 8: There is no significant interaction between treatment and field dependence and field independence.

Referring to Table 2, it was discovered that there was no significant interaction between treatment and level of field dependence.

#### Test of Treatment Quality

As a check against possible variation in the editing of the two videotape treatments, a question was added to the SAS that dealt with the subject's assessment of the quality of the videotape presentation. A t-test was run to see if there was any difference in the perception of either treatment group concerning the quality of the videotaped treatment. The treatment groups' evaluation of the technical quality of

the videotapes were not statistically significantly different (see Table 6).

Table 6. T-test - quality of videotape treatment

	N	Mean	SD	T-value	T-probability
Fear alone	32	4.5625 <sup>a</sup>	0.669	1.32	0.192
Fear with alleviation	42	4.3571	0.656		

<sup>a</sup>The higher the score, the higher the perceived quality of the presentation using a five-point scale with 5 = excellent and 1 = poor.

## CHAPTER 5. CONCLUSIONS

Educators have long felt student attitudes were important in the learning process because of the role of attitudes in directing learner behavior. The problem this study attempted to investigate was whether various persuasive treatments could be used to encourage attitude change in learners with a specific cognitive style or learning characteristic. It seemed fairly obvious that both treatments produced an actual, as well as statistically significant, attitude change, but that the amount of change did not seem to be directly related to a subject's level of field dependence or independence. There were, however, identifiable differences produced by the treatments administered, and interesting results were obtained related to attitude and a person's smoking habits.

The general purpose of this study was to determine if a fear-laden persuasive message could be used to significantly alter attitudes toward smoking. Additionally, an attempt was made to determine why some individual's attitudes changed more or less than other's.

One factor considered influential when attitude change was desired was a person's learning style. Specifically, the learning style called field dependence was thought to possibly be related to the impact of persuasive messages delivered by motion media. It was hypothesized that if a person demonstrated a tendency to be either field dependent or field independent their attitudes might be differentially influenced. Kloock et al. (1982) reported that field independent subjects who viewed a motion picture that was intended to change their



attitudes were influenced significantly more than field dependent subjects who viewed the same film. In this study, Kloock's finding was not supported.

Other factors considered important for careful examination in this study were gender and smoking behavior. Since the treatment chosen for this study was a persuasive film designed to convince women that smoking was harmful, and that they should not smoke, it was hypothesized that women would be influenced by this motion picture to a greater extent than men. It was also assumed that a person's smoking behavior would influence how much their attitudes would be changed. The results of this study tended to support these suppositions. Women's attitudes seemed to be influenced to a greater extent than men's attitudes, and smokers were most resistant to the persuasive messages while non-smokers were influenced most. There was no measure of smoking behavior change, or post-treatment follow up check on the persistence of attitude changes.

#### Summary of Results

There were eight hypotheses that were tested during the course of this study. They were:

HYPOTHESIS 1: There is no significant difference in attitude between learners in either treatment group and the control group.

The analysis run using the Smoking Attitude Scale (S.A.S.) as the dependent variable, revealed some significant results. Hypothesis one

was rejected. A statistical difference between the treatment groups and the control group was found. A statistical difference did not exist between the videotape treatment groups.

Table 1 showed the results obtained when subjects were administered the Smoking Attitude Scale (S.A.S.) after treatments were viewed. Both the "fear provoking" persuasive treatment and the "fear with alleviation" persuasive treatment significantly influenced subjects' attitudes, as compared to subjects in the control group. In other words, subjects in the two experimental treatments had significantly more negative attitudes towards smoking than did control subjects who did not view a persuasive videotape. There was no significant difference between the SAS scores reported by subjects in the two persuasive treatments.

HYPOTHESIS 2: There is no significant difference in attitude between field dependent and field independent learners regardless of treatment.

Hypothesis two was included to partially replicate the findings of Kloock's 1982 study that reported field independent students more likely to have their attitudes changed than field dependent learners. However, the results of the analysis did not show a statistical difference between field independent learners and field dependent learners. The statistics failed to reject hypothesis two. Table 2 showed the results of the 2 X 3 analysis of variance test that used treatment and level of field dependence/independence as independent variables. The statistically significant differences between the two

experimental treatments and the control group was identified again. However, there was no statistical difference found between the field dependent and field independent subjects in any of the three treatment groups. Additionally, there was no significant interaction identified. These results are contrary to the significant differences between field dependent and field independent subjects reported by Kloock et al. (1982).

HYPOTHESIS 3: There is no significant difference in attitude between males and females regardless of treatment.

Table 3 reported the results of the 2 X 3 analysis of variance test that used treatment and gender (male, female) as independent variables. The significant treatment effect was identified. However, the differences between men and women on the test of the dependent variable was not significant, and there was no significant interaction found; therefore, hypothesis three was not rejected. It was interesting that in all treatment groups the scores for men were more positive towards smoking than were the scores for women. Since the theme of the persuasive message was directed at women, this non-significant but actual difference between the sexes was worth noting. It also supports the somewhat obvious assumption of film-making that for a persuasive message to maximize its impact on the audience, its content should be aimed directly at that specific group.

HYPOTHESIS 4: There is no significant difference in attitude between current smokers, non-smokers, and former smokers.

Table 4 reported the results of a 3 X 3 analysis of variance test that used the three treatments and three categories of smoking behavior as independent variables. Unexpectedly, the number of smokers and former smokers who identified themselves was quite low, so drawing conclusions from the results of statistical tests was somewhat difficult. However, the information provided by the analysis of variance test indicated that in addition to the significant treatment effect, there was a significant effect related to a person's smoking behavior so hypothesis four was rejected. Smokers in each treatment group reported a more positive attitude toward smoking than did former smokers, and former smokers were more positive toward smoking regardless of treatment than were non-smokers. Because several cells had such small numbers of subjects, inferences drawn must be tentative. However, there did seem to be a direct relationship between behaviors related to smoking and attitude toward smoking.

HYPOTHESIS 5: There is no significant difference in attitude between subjects with parents having different smoking habits.

Table 5 reported the results of a 3 X 3 analysis of variance test that used the three treatments and three categories of smoking behavior of the subject's parents (both parents smoked, one smoked, neither

smoked) as independent variables. The results of the tests failed to reject hypothesis five but did show the treatment effect.

HYPOTHESIS 6: There is no significant difference in attitude of field independent learners regardless of treatment.

Table 2 reported the results of an analysis of variance and failed to reject hypothesis six. Kloock et al.'s (1982) reported that field independent subjects who viewed a motion picture that was intended to change their attitudes were influenced significantly more than field dependent subjects who viewed the same film. This study did not find the same results. There were many variables that could have produced this disparity such as the large number of females and the low number of current smokers in the experiment. Some researchers have suggested a taxonomy that places psychological differentiation of structured defenses ahead of analysis of intellectual functionings like field dependence/independence (Witkin et al., 1971).

HYPOTHESIS 7: There is no significant difference in attitude of field dependent learners regardless of treatment.

Table 2 showed the treatment interaction but failed to statistically reject hypothesis seven. Much the same reasoning as mentioned in hypothesis six is used here. There were many variables that could have produced results contrary to Kloock's et al. (1982). Given the large number of females in the study and because the central message of the

treatment being a fear-provoking one about smoking, it's possible that a taxonomy existed that placed physical well-being ahead learning characteristics such as field dependence.

HYPOTHESIS 8: There is no significant interaction between treatment and field dependence and field independence.

Table 2 showed that there was no significant interaction between treatment and level of field dependence. Hypothesis eight was not rejected. These findings were contrary to Kloock et al.'s (1982) results. There was no significant difference in scores for the S.A.S. for field dependent/independent subjects. This inconsistency requires additional testing and evaluation in subsequent studies.

#### Recommendations for Further Study

This study supported the idea that attitudes can be changed by media. It seemed to support several of Simonson's six guidelines. It suggested that media messages that were designed primarily to change certain attitudes were most effective in learners who experienced an emotional arousal.

The study of learner characteristics such as field dependence is a possible area for further study. Research into how learner characteristics relate to attitude change has not been explored sufficiently. The inconsistency of this study's findings with that of Kloock et al.'s 1982 study could be basis for another replication study. Because of the large number of female subjects in this study and because the target

of the persuasive message was females, it is possible that there was a hierarchy of intervening variables that placed gender above field dependence.

There are several overall questions that remain unanswered in the area of persuasion and attitude change. Why are some learners influenced more or less than other learners by messages? Is there a link between liking and learning? Is it possible to formulate messages to change a person's attitude in accordance to that person's learning styles?

The impact of mediated instruction on attitude formation and change has been examined and reported in an insufficient number of studies in the literature, so few broad generalizations about the relationship between these two concepts can be made. However, the results of this study do seem to support the assumption that persuasive message can be effectively delivered with instructional media. What is not understood is why some learners are influenced more or less than others. In an attempt to answer this question, this study examined subjects' level of field dependency to determine if this relatively constant learner characteristic was related in any way to attitude change. In this study, it was not. Certainly, other learner characteristics than field dependence need to be examined in experimental situations to determine if they are related to attitude change. Also, the inconsistent results for field independent learners reported by this study as compared to the Kloock et al. (1982) study needs further investigation. Other relevant learning styles should be examined in

similar experimental situations so that the impact of mediated persuasive messages can be more accurately predicted.

It seems obvious that it is possible to change attitudes with media. A number of studies reported on above support this generalization. It may even be that persuasion is one of the most important contributions than media to education. Further experimentation is needed.

#### Synopsis

The purpose of this study was to examine a possible relationship between attitude change, the learner characteristic of field dependence, and a fear-provoking message. Subjects were determined to be either field dependent or field independent by scores attained on the Group Embedded Figures Test (GEFT). They were then given either a fear-provoking videotape treatment, a fear with alleviation videotape treatment, or a control treatment. Experimental treatments attempted to change viewer attitudes towards smoking. Subjects then took a post-test called the Smoking Attitude Scale (S.A.S.). The S.A.S. was developed by D. J. Baer and had a reliability of .84.

Data from the SAS were analyzed by means of t-tests, ANOVAs, multiple ANOVAs, Duncan, and Scheffé tests of significance. The treatments were found to have produced significant changes when compared to the control group. However, the two videotape treatments did not produce results that were significantly different. The data did show an actual, if not significant, difference that females were influenced more than males by the treatments. The results also failed



to support the results of the Kloock et al. 1982 study that showed that field independent learners had their attitudes changed more than field dependent learners. The data also showed a significant relationship between attitude toward smoking and smoking habits. Smokers were the most positive toward smoking, former smokers next, and non-smokers the most negative toward smoking.

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APPENDIX A. SMOKING ATTITUDE SCALE

SECTION ONE: (answer on this sheet)

PLEASE CHECK THE FOLLOWING INFORMATION ABOUT YOURSELF:

YOUR NAME \_\_\_\_\_

GENDER: MALE \_\_\_\_\_ FEMALE \_\_\_\_\_

TEACHER PREPERATION: a. ELEMENTRY \_\_\_\_\_ (including C.D.)  
 b. SECONDARY \_\_\_\_\_  
 c. OTHER \_\_\_\_\_ (please specify)

SMOKING HABITS: a. CURRENT SMOKER \_\_\_\_\_  
 b. FORMER SMOKER \_\_\_\_\_  
 c. NON-SMOKER \_\_\_\_\_

PARENTS SMOKING HABITS: a. BOTH PARENTS SMOKED \_\_\_\_\_  
 b. ONE PARENT SMOKED \_\_\_\_\_  
 c. NEITHER PARENT SMOKED \_\_\_\_\_

SECTION TWO: (answer on score sheet)

DISAGREE

AGREE

	1	2	3	4	5
1. SMOKING GIVES ONE POISE	1	2	3	4	5
2. SMOKING IS A DISGUSTING HABIT	1	2	3	4	5
3. SMOKING SOOTHES ONES NERVES	1	2	3	4	5
4. SMOKING GIVES LITTLE ENJOYMENT	1	2	3	4	5
5. PEOPLE SMOKE BECAUSE OF OTHERS	1	2	3	4	5
6. SMOKING ALLOWS A SENSE OF SECURITY	1	2	3	4	5
7. SMOKING IS ONE OF THE MOST PLEASURABLE EXPERIENCES IN LIFE	1	2	3	4	5
8. SMOKING IS A FILTHY HABIT	1	2	3	4	5
9. SMOKING PROVIDES A SENSE OF WELL BEING	1	2	3	4	5
10. SMOKING IS ONE OF LIFE'S BASIC PLEASURES	1	2	3	4	5
11. SMOKING IS OCCASIONALLY PLEASURABLE	1	2	3	4	5
12. SMOKING HELPS A PERSON RELAX	1	2	3	4	5
13. NO ONE SHOULD BE ALLOWED TO SMOKE	1	2	3	4	5
14. SMOKING IS AN AESTHETIC EXPERIENCE	1	2	3	4	5
15. SMOKING DULLS YOUR MIND	1	2	3	4	5

(OVER)

	DISAGREE					AGREE
16. SMOKING IS A HARMLESS ACTIVITY	1	2	3	4	5	
17. ONE WHO SMOKES IS INSECURE	1	2	3	4	5	
18. SMOKING IS A RELATIVELY HARMLESS ACTIVITY	1	2	3	4	5	
19. SMOKING IS ONE OF THE GREATEST EVILS IN THE WORLD	1	2	3	4	5	
20. SMOKING IS A PLEASANT MEANS OF RELAXATION	1	2	3	4	5	
21. SMOKING MAKES ONE NERVOUS	1	2	3	4	5	
22. SMOKING IS A WASTE OF TIME	1	2	3	4	5	

## SECTION THREE: (answer on score sheet)

	POOR					EXCELLENT
23. WHAT DID YOU THINK OF THE TECHNICAL QUALITY OF THIS PRESENTATION?	1	2	3	4	5	

appendix b. human subjects review

INFORMATION ON THE USE OF HUMAN SUBJECTS IN RESEARCH  
IOWA STATE UNIVERSITY

(Please follow the accompanying instructions for completing this form.)

1. Title of project (please type): THE RELATIONSHIP BETWEEN FIELD DEPENDENCE AND ATTITUDE CHANGE AS PRODUCED BY A FEAR EVOKING FILM ON SMOKING

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

TIMOTHY L. BERRY 11 March 82  
 Typed Name of Principal Investigator Date Signature of Principal Investigator  
INSTRUCTIONAL RESOURCE CENTER 291-6810  
 Campus Address Campus Telephone

3. \_\_\_\_\_ Date 3/11 Relationship to Principal Investigator Mojo Professor

4. ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, and (D) covering any topics checked below. CHECK all boxes applicable.

- Medical clearance necessary before subjects can participate
- Samples (blood, tissue, etc.) from subjects
- Administration of substances (foods, drugs, etc.) to subjects
- Physical exercise or conditioning for subjects
- Deception of subjects
- Subjects under 14 years of age and (or)  Subjects 14-17 years of age
- Subjects in institutions
- Research must be approved by another institution or agency



5. ATTACH an example of the material to be used to obtain informed consent and CHECK which type will be used.

- Signed informed consent will be obtained.
- Modified informed consent will be obtained.

6. Anticipated date on which subjects will be first contacted: 04 19 82  
 Anticipated date for last contact with subjects: 04 26 82

7. If Applicable: Anticipated date on which audio or visual tapes will be erased and (or) identifiers will be removed from completed survey instruments: \_\_\_\_\_  
 Month Day Year

8. Signature of Head or Chairperson 3/12/82 Date Department or Administrative Unit Professional Studies

9. Decision of the University Committee on the Use of Human Subjects in Research:  
 Project Approved  Project not approved  No action required  
George G. Karas 3/22/82  
 Name of Committee Chairperson Date Signature of Committee Chairperson