

THE EFFECT OF VERBAL REINFORCEMENT IN THE
MODIFICATION OF A PHOBIC ATTITUDE

By

STEPHEN THOMAS STEWART

Bachelor of Science
Colorado State University
Fort Collins, Colorado
1969

Master of Science
Oklahoma State University
Stillwater, Oklahoma
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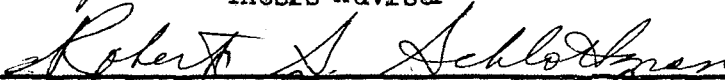
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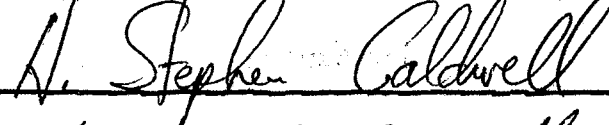
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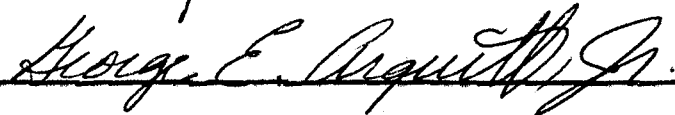
Thesis Approved:




Thesis Adviser









Dean of the Graduate College

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CHAPTER I

THE PROBLEM

Throughout his existence, Man seems to have concerned himself with maintaining a range of behavior which could be viewed as normal or acceptable. It is speculated that prehistoric man practiced a form of "psychosurgery" known as trephining in an attempt to release the evil spirits in the heads of those who behaved in strange ways. Medieval man was also concerned with demon possession, and practiced remedial methods as drastic as trephining. Abberant behavior met with cuts, burns or dunkings.

In the 18th and 19th centuries various chemical concoctions and "scientific" techniques, such as Mesmer's brand of hypnotism, were prescribed to correct the unacceptable actions of others. Not until Freud developed his "talking cure" in the late 19th century, however, was there any real effort to utilize verbal techniques in dealing with emotional problems. Today verbal interaction between therapist and client is possibly the major common characteristic of psychotherapeutic approaches.

Verbal interaction may be the most prominent feature of psychotherapeutic efforts but it is also very likely the least understood in terms of how it effects change in the client's behavior. Many authors, in discussing their therapeutic orientations, have described what they believe to be the progression of significant events in this change, and

yet, there seems to be no real explanation of how and why these sequences work the way they¹ do. Rather therapists tend to rely on their own past clinical experience in speculating about the underlying dynamics of the process. There is, of course, some empirical research which suggests the relationship between the application of a given technique and its result. However, why one technique yields a certain result is too often ignored. The major exception to this trend is found in "learning therapies", which are based on extensive theoretical and research data.

The intent of the present study is not to condemn psychotherapy because of its dearth of objective examination, but rather to alleviate the problem in some measure. To complete this task a theoretical position concerning the role of verbal interactions in psychotherapy will be developed, and hypotheses will be derived to test the theory.

An examination of theoretical discussions of the process of psychotherapy reveals that many describe attitude change by the client as a significant goal. Thus, without really knowing how this may occur, it can be said that the verbal interaction between therapist and client works to modify the attitudes of the client as they relate to the problems or emotional difficulties he is experiencing.

Looking next at the literature on attitudes it is observed that most of the theoretical work suggests some variation of the notion that consistency between cognitive, affective, and behavioral elements of an attitude is the key factor in its formation and stability. It follows that inconsistency between any of these elements would lead to an instability of the attitude, making it more vulnerable to change. Research in the area of attitude change generally supports this notion.

The next step is to see how this information on attitudes and attitude change has been applied to the process of psychotherapy. The literature on this point indicates that there has been little attempt to make this application to therapy. It would seem this information has been viewed as an unrelated subject, despite the apparent belief of many clinicians that the process of psychotherapy is in large measure one of attitude change. Most of the research that has been done is concerned with reinforcement in the conditioning of responses to attitude questionnaires. Among the various kinds of reinforcers have been verbal statements of encouragement, social praise, and positive verbal feedback. Whether or not this verbal conditioning has led to actual attitude change, as opposed to a superficial modification of verbal behavior, has not been considered. These same studies show a second limitation in that the bulk of them deal with what may be termed "social" attitudes (national pride, prejudice, political orientation) opposed to "clinical" attitudes (phobias, self-image). Thus, there has been very little done in the way of examining the process of attitude change as an analog to verbal psychotherapeutic interactions.

With the above discussion in mind, the purpose of the present study is two-fold: (1) The role of verbal interaction (in the form of positive, encouraging statements for the performance of a specified verbal task) in the process of attitude change will be examined. (2) The change will be examined in the context of a more clinically relevant attitude (a phobia). Recognizing the limitations involved in generalizing from an analogous situation, one actually removed from a therapy situation, the theoretical basis for this study is that verbal

interaction between therapist and client can lead to inconsistencies in the elements of the client's currently held attitudes. These inconsistencies result in a more unstable attitude and lay the foundation for therapeutic change.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter is divided into five sections. The first is an inspection of the literature concerning attitude change in psychotherapy. The second section discusses the nature of attitudes and attitude change with particular emphasis on Rosenberg's (1960) theory. The third examines the work done in the area of attitude change by means of verbal reinforcement. The fourth is concerned with the role of therapist verbalizations in the therapeutic change process. The final section is a summary and a statement of general hypotheses.

Attitude Change in Psychotherapy

That attitude change is an integral part of psychotherapy has been widely discussed and is generally accepted. Wolberg (1967) summarizes his position on this idea as follows:

The least ambitious of objectives is to reestablish the emotional equilibrium of the individual to a point where he can function at his optimal level.... More extensive is the mission of fostering a rearrangement of present day attitudes, values, and life purposes in line with a more realistic adjustment to the environment and to people. Most extensive is the reconstructive aim of promoting growth in personality development.... (So) more mature and adaptive and creative potentials are achieved.

Thus, Wolberg sees therapy as a process of modifying emotional and attitudinal approaches to problem areas in a manner which allows for

growth of the personality.

Van Kaam (1967) describes his existential views regarding the goals of psychotherapy. The immediate goal of the therapeutic process is to "liberate" the person from his feelings of vague discomfort and dissatisfaction. Once liberated the person is free to try to understand himself, accept himself and to attempt the more long range therapeutic goal of self-actualization. Van Kaam sees this actualization process as the development of attitudes and personal characteristics which were always within the person but which were being prevented from growing.

Ellis (1967) discusses his particular psychotherapy:

My main goals in treating any of my psychotherapy patients are simple and concrete: to leave the patient...with a minimum of anxiety (self-blame) and of hostility (blame of others); and, just as importantly, to give him a method...that will insure that...he continue to be minimally anxious and hostile.

Ellis goes on to describe anxiety as an idea or attitude involving a perceived threat and feelings of inadequacy to handle the threat. Similarly, hostility is defined as an attitude of dislike or annoyance. Like anxiety, however, the person feels unable to cope with the situation. It is Ellis' view that the process of psychotherapy attacks and modifies these attitudes.

Betz (1970) takes the discussion one step further by conceptualizing the whole therapeutic process as a series of attitudinal interactions. She states, "It is largely through attitudinal interaction that effective reorganization of the patient's personality occurs, regardless of the particular technique...utilized by the particular therapist." As Betz sees the progress of therapy, there is a general

pattern which occurs:

1. a general attitudinal interaction to build rapport and clarify the patient's needs
2. encouragement by the therapist for the patient to express his attitudes and feelings
3. counterattitudinal statements by the therapist which mark a shift from accepting to questioning the patient's positions
4. doubt about his positions which lead to attitude changes and then the reorganization and maturing of the personality.

It can be seen that the goal of psychotherapy for Betz, personality maturation, depends heavily upon attitude change.

Attitudes and Attitude Change

Having established the role of attitude change in psychotherapy the next step is to clarify the nature of the change process. This clarification begins with a brief discussion of what is generally believed to be the structure of the attitude itself. A review of the literature reveals a great deal of agreement concerning the structure of an attitude. An attitude is considered to be comprised of three components: (1) a cognitive component, including beliefs, opinions and perceptions, (2) an affective component, which is an emotional evaluation of the attitude object, (3) a behavioral tendency to respond to the attitude object in a manner dictated by the cognitive and affective components. Thus, an attitude is an evaluation of the "goodness or badness" of some object based on beliefs about that object. This evaluation defines the manner of behaving toward the object (Shellenberg, 1970; Sherif and Sherif, 1969; Brown, 1965; Secord and Backman, 1964).

The discussion now turns to the nature of attitude change. Again, there is a great deal of agreement on this topic, although terminology may differ.

Rosenberg's (1960) theory of "affective-cognitive consistency", like most current attitude change theories, views consistency between the three components of an attitude as the key to attitude stability or change. It is when there is inconsistency among these components that the stage is set for change. Thus:

When the affective and cognitive components of an attitude are mutually consistent, the attitude is in a stable state; when... (they) are mutually inconsistent (to a degree that exceeds the person's present tolerance for such inconsistency) the attitude is in an unstable state and will undergo spontaneous reorganizing activity until... either (1) the attainment of affective-cognitive consistency or (2) the placing of an irreconcilable inconsistency beyond the range of active awareness (Rosenberg, 1960).

The implication of this statement is that if some external force leads to change in one or the other of the two components mentioned, the individual will strive to change the other in such a manner as to reestablish consistency between the two. Heider (1946) speaks of balance between person A's feelings toward person B and his feelings toward some object with which person B is associated. If A dislikes B, then A will also dislike the object associated with B, assuming A's attitudes are balanced. Osgood and Tannenbaum (1955) have a theory of congruity in which cognitive elements relevant to each other must be similarly valued before attitude stability is achieved. Festinger's (1957) theory of cognitive dissonance is, perhaps, one of the most generally known theories of attitude change. Briefly, if a person is put into a situation which is strongly contrary to his value system,

and he performs in that situation, the tendency is to modify the value system in a manner which allows justification for the behavior. Katz and Stotland (1959) have developed a theory based on what they see as four motivational functions of attitudes: adjustment to the environment, ego defense, value expression and knowledge acquisition. The last two functions work on a consistency principle in that the person finds the most satisfaction in doing things which are consistent with his values and beliefs, and he tends to structure his experiences to be consistent with what he "knows".

Congruity, balance, dissonance: all these terms suggest the same basic idea. Consistency between elements of an attitude or among elements of related attitudes is the determining factor in whether an attitude is stable or unstable and, therefore, amenable to change. In this respect, these theories and that of Rosenberg (1960) are quite similar. They all, in fact, do stress the importance of consistency. At this point it seems desirable to see whether the research literature supports the position.

Rosenberg and Oltman (1962) examined the relationship between subjects' feelings about an issue and their beliefs concerning it. Subjects rated their feelings on a 16 point scale from extreme pro to extreme con. They also rated what they thought were possible consequences of the issue in terms of desirability. The correlation between feelings and belief ratings was very significant and consistent across subjects.

Fishbein (1963) tried to predict attitudes towards Blacks based on subjects' beliefs regarding the characteristics they possess. Subjects made three semantic differential evaluations. The first involved

certain characteristics such as lazy and athletic. Next, they determined the degree to which they believed Blacks possessed these characteristics. Finally came an evaluation of subjects' attitudes toward Blacks. An estimated attitude score was derived by combining the scores from the first two evaluations, and this score was compared with the reported attitude score from the third evaluation. The correlation between the two attitude scores was highly significant, while the correlation between each of the first two evaluations and the third were rather low.

Rosenberg (1956) also attempted to predict attitudes. The bases he used were personal values and beliefs concerning the instrumentality of an attitude object in serving those values. Subjects indicated their attitudes toward two objects. Three weeks later, they were administered a "value-importance test" which measured the importance of such things as patriotism, equal rights for all and America's foreign image. They also took a "perceived instrumentality test" in which they rated the two attitude objects in terms of furthering the values measured earlier. From these two tests, an estimated attitude score was derived and correlated with the previously measured attitudes. The relationship was highly significant.

The above studies tend to support the notion that consistency is, indeed, an important element in the structure of attitudes. The research which follows explores the role of consistency in the process of attitude change.

Carlson (1956) tested the hypothesis that attitude change can occur by changing the beliefs concerning the value of housing integration. They were first administered a "test of objectivity" which

supported the notion that housing integration would aid in the attainment of certain valued goals. Next, subjects took part in a discussion of the test in which the discussion leader was in favor of the integration idea. Subjects' attitudes toward integration were measured both before and after these manipulative experiences. Compared to a non-experimental control group, subjects showed a significant shift in favor of the desired attitude.

Scott (1957) set up a debate situation to examine the role of consistency in attitude change. Subjects rated a controversial issue on a seven point scale from very pro to very con. One half of these persons were then assigned the task of advocating, in debate, the position opposite to their stated position. The other half advocated their own positions. "Winners" were predetermined by the experimenter. Following the debate, postmeasures revealed that "winners" who were advocating an opposite position made significantly greater attitude changes than "losers" supporting an opposite position. Those persons who supported their own, whether successfully or not, showed no change.

In a somewhat different approach to the consistency question, Scott (1959) compared "cognitively consistent" subjects with those who were "cognitively inconsistent". He determined which group a person belonged to by comparing his beliefs about an attitude object with the values associated with that object. If his beliefs could be predicted from his stated values, then he was considered cognitively consistent. In a verbal reinforcement task in which subjects were rewarded for stating opinions opposite to their own, those in the cognitively consistent group showed very little conditioning effect while those in the cognitively inconsistent group showed significant attitude changes.

Rosenberg (1960) attempted to manipulate affect rather than beliefs to produce attitude change. To accomplish this, he utilized posthypnotic techniques. Subjects were pretested to determine their attitudes toward a number of social issues. Half of these were then hypnotized and given the suggestion that their feelings about some of the issues were actually the opposite of their previous reports. Post measures revealed that not only did these subjects claim to feel the opposite of their earlier reports, but they also showed reversals in their attitudes. These results held only for those few issues specified during the hypnotic phase. Attitudes on the other topics remained the same. All attitudes for the nonhypnotized group remained the same. The time between pre and post testing in this experiment was approximately two hours. Rosenberg repeated the experiment, using two, four and seven day delays between the hypnotic phase and post testing. The results for all delay conditions were virtually identical. In all cases, including the two hour study, subjects reestablished their original attitudes with the removal of the posthypnotic amnesia.

Bergin (1962) explored the change process in relation to two variables: high versus low feedback sources and degree of feedback discrepancy. Subjects rated themselves on a masculinity/femininity scale. They next received feedback regarding their masculinity/femininity on one of three levels of discrepancy from either a high or low credible source. The high credible source was the director of personality assessment from the psychiatric department of a local medical center. The low credible source was a confederate posing as a high school senior. Levels of discrepancy were labeled moderate, high or extreme, depending on the degree of divergence from subject's

self-evaluation. Results showed that as the degree of discrepancy increased, the tendency to change ones self-evaluation increased, providing the source of feedback was highly credible.

This review of the research on attitude change amply demonstrates the importance of consistency in that process. Insko (1967) states that "...the research relevant to (the concept) is highly consistent and supportive". He further states that this support is enough to "...produce considerable faith in the general adequacy of the concept". The next step is to examine this concept in the more specific context of change through verbal mechanisms.

Attitude Change by Verbal Means

To make the assertion that verbal comments can serve to change attitudes, presumes that verbal processes can play some part in the original development of attitudes. There is, in fact, research support for this position.

Staats and Staats (1958) attempted to instill attitudes by a classical conditioning technique. For subjects involved, certain nonsense syllables were paired with emotionally loaded words. After the experiment, it was found that subjects tended to rate the nonsense syllables as either pleasant or unpleasant depending on the nature of the associated words, whereas before the experiment, the syllables had been given neutral ratings. A followup study, using different subjects, used the same technique to condition the feelings associated with certain national names. Again, the conditioning effect was observed.

Gale and Jacobson (1970) used a somewhat different technique in attempting the conditioning of affect. They used negative social

comments as the "unconditioned stimulus" to get subjects to react negatively to the presentation of a tone and a light. Taking measurements of electrodermal reactions and obtaining self-reports led to the conclusion that subjects were, indeed, developing negative reactions to the tone and light presentations.

Finally, Hekmat and Vanian (1971) attempted to clarify the process by which a person can hold a certain attitude, having had no personal experience with the attitude object. A group of subjects who reported having no previous experiences with snakes rated the word "snake" on a semantic differential. One half of those who gave a negative rating were exposed to the situation of seeing the word "snake" paired with affectively positive adjectives. The other half was exposed to the word "peach" paired with positive adjectives. A second rating of the word "snake" revealed that the first group's scores had become significantly more positive than the second group's. These subjects' scores tended to remain the same. The authors conclude that since the verbal association process used in the study led to a modification of attitude toward snakes of persons who, as of the end of the study, still had had no direct experience with snakes, it seems feasible to suspect that a similar process occurred in the original attitude formation.

The three studies presented above support the notion that verbal processes can have a great deal of influence in the formation of attitudes. It would seem, therefore, that the same processes may be effective in the change of attitudes already held. With some exceptions, this idea is generally supported in the literature.

Babbitt (1962) is one of the exceptions. He attempted to produce changes in the self-attitude by verbal reinforcement. During pre-

testing, subjects completed a semantic differential type scale on "myself", "my ideal self" and a number of unrelated items. The two self-related items were combined into a single score. Subjects were then divided into four groups for the completion of a sentence completion test. Group one was verbally reinforced for each sentence ending with a positive self-reference. Group two received the same reinforcement for negative self-reference. Group three received non-contingent random reward, and Group four got no reinforcement. Each of these groups was further divided into low, medium or high dissatisfaction based on the premeasure. The results of this study were generally unresponsive. The only significant effect, in terms of changing self-evaluations on a postmeasure, was the reward for positive self-reference in the moderate dissatisfaction group. The author concludes that no real attitude change can be said to have been affected.

Buckout and Rosenberg (1966) had subjects complete a questionnaire which measured their feelings toward a certain attitude object. Next, they were presented cards on which were printed two statements, one pro and one con with regard to the object. They were instructed to read aloud the statement which seemed to be the more accurate, and whenever a response was read which was contrary to their own feelings, they were verbally reinforced. Following this procedure, post-testing revealed a significant change in affect in the direction of the reinforced responses. This was compared to no change for a non-reinforced group.

Wandzek (1967) explored the influence of verbal reinforcement on the modification of educational interests among undergraduates. In the experimental situation, which was set up to resemble an interview,

some subjects were verbally reinforced for making statements contrary to their pre-test interests. These persons showed significant changes in their responses during post-testing. Control subjects showed no change.

Ostrom and Goldstein (1970) examined the effect of prior knowledge of the experimenter's attitude on subjects' performance in a verbal reinforcement situation. Subjects were divided into three groups. In the first group, subjects were given prior knowledge that the experimenter held a positive attitude toward the relevant object, and these subjects were rewarded for making positive statements. Subjects in the second group received information that the experimenter's attitude was negative. They also were reinforced for making positive statements. Finally, the third group received no prior information and the same reinforcement contingency. Analysis of the results revealed a significant conditioning effect in all three groups and no differences in performance among groups.

The studies reviewed above tend to support the notion that attitude change can be effected by verbal means. There is no direct connection to be found in the literature between consistence theory and attitude change by verbal means. However, an examination of the techniques involved suggests that the relationship is feasible. A person states a certain attitude. He is then reinforced or encouraged for verbalizing beliefs contrary to his earlier position, and so he continues to make these incongruent statements. He is no longer being consistent, so he shifts his attitude position to regain consistency.

The above description of the process occurring in verbal reinforcement experiments is certainly feasible on a conceptual level, but

there are some researchers that would take exception with it. The position taken by these researchers is that awareness by subject of what experimenter is really doing can have a great impact on the outcome of a verbal reinforcement study. They propose that it is not attitude change which is being measured. It is compliance to the manipulative situation.

Dulany (1961) has distinguished three types of awareness: Reinforcement Hypothesis (H_r) in which subject becomes aware of a reinforcement contingency, Behavior Hypothesis (H_b) in which subject becomes aware of what experimenter is reinforcing, and Behavior Intention (BI) where subject decides whether or not to cooperate in the experiment. Dulany reports that H_r is the least valuable in predicting any conditioning effect, while BI is the most valuable. He goes on, however, to say that all three are sufficiently correlated with the change effect to be considered good predictors. Thus, according to Dulany, if subject becomes aware of the experimental manipulation, the meaning of the results observed are highly questionable.

Spielberger, Levin and Shepard (1962) attempted to clarify some of Dulany's claims regarding awareness. They designed a study to increase the frequency of "I" or "we" statements via verbal reinforcement. Three different sets of instructions were used on three different groups to establish three levels of awareness. The researchers found that only subjects in the group which was aware of the reinforcement contingency showed the desired conditioning effect.

On the other side of the coin is a body of research which fails to substantiate the influence of awareness on verbal conditioning

studies. This literature generally takes the position that awareness usually does not even exist and, therefore, can have no effect on outcome.

Insko and Nelson (1969) compared the effects of verbal reinforcement on attitude change in two different settings: a laboratory attitude survey and a telephone attitude survey. A class of beginning psychology students were pre-tested to determine their attitudes on a variety of topics. Some of these were then contacted to participate in either the laboratory or telephone survey. As far as the students knew, there was no connection between pre-testing and the survey in which they took part. During the survey portion, subjects were verbally reinforced each time they responded to certain attitude items in a manner contrary to their earlier reports. Post-testing revealed no differences between laboratory and telephone surveyed subjects in terms of the amount of change. Both of these groups, however, showed significant position shifts compared to the control group which received no manipulation. The authors presume that there was practically no chance for subjects to be aware of the reinforcement in the telephone group and that the results, therefore, support the notion that awareness plays no part in the conditioning process.

Rosenfeld and Baer (1970) used an elaborate technique to insure lack of awareness in a verbal conditioning study. Subjects were told that they were going to try to condition fluent verbalization in a person with a speech problem. Communication was to be achieved via a speaker system in order to "reduce possible personality effects in the conditioning process". The other person was actually a tape recorder controlled by experimenter. The task was for subject to present the

trial words in a certain order, requesting that the other person repeat the word. If this presentation and request was made in a certain manner, then subject heard a fluent word. Otherwise, he heard a nonfluent word. Results revealed a significant tendency for all other forms of presentation and request to drop out and for subjects to use almost exclusively the rewarded form.

It now seems that there is supporting evidence for both positions on the question concerning the role of awareness in verbal conditioning studies. It is obvious that a great deal more work needs to be done to clarify the matter. At the present time, the question remains unresolved.

Therapist Verbalizations

Thus far this discussion has concerned itself with the question of attitude change in a more general sense, that is, the manipulation of attitudes held by most people: general social attitudes. But what about more personal, individual attitudes of the sort which might be dealt with in a therapeutic situation: attitudes toward one's self, phobias, attitudes which may be seen as supporting "pathological life styles"? Are attitudes of this sort susceptible to the same types of manipulation as the more general social attitudes examined thus far? One study already cited (Babbitt, 1962) suggests not. Another (Bergin, 1962) suggests so. Perhaps a more detailed look at the literature will help answer the question.

Adams and Frye (1964) compared four different types of verbalization in terms of their reinforcing value. Subjects in an interview situation were exposed to interpretive, socially reinforcing, reflective

or hostile comments. The contingency of the comments lay in subject making self-referring statements. Results showed that interpretive and socially reinforcing comments led to significant increases in self-reference. The other two types were associated with nonsignificant reductions in self-reference. Comparing the first two types, it was found that conditioning by the interpretive comments led to greater resistance to extinction. The authors discuss the findings in terms of a learning/performance distinction. That is, interpretive statements led to increased self-knowledge and, presumably, a greater willingness to talk about one's self. Social praise, on the other hand, resulted merely in a superficial verbal conditioning effect.

Truax (1966) also explored the reinforcing value of certain verbal techniques: empathy, unconditional positive regard (upr), and directiveness (interpretation). Experimenter's interest was in the following client behaviors: ambiguous statements, verbalizing insight, and statement of feeling. It was found that empathetic and upr were associated with decreases in ambiguity and increases in insight. Interpretation was significantly related to increases in feeling expression.

Williams (1963) attempted to increase the frequency of affect statements in a group of nonpsychotic patients in a psychiatric hospital. Some subjects received positive verbal reinforcement for making affect statements. Others were reinforced for making nonaffect statements. Still others received no particular reinforcement. The first group showed significant gains in frequency of affect expression, although all subjects showed some increase over the course of the study. Post-experiment interviews gave no indication of awareness by

subjects concerning the contingencies.

Wilder (1967) compared verbal modeling with verbal reinforcement in their effects on the frequency of self-referring affect statements (sra). With one group of individuals, experimenter emitted random sra's during the interview. With another group, he said "mmhmm" every time subject emitted an sra. Results showed a significant increase in sra's by modeling subjects and a nonsignificant increase by subjects in the reinforcement group. No evidence of subject awareness was found.

In a study utilizing "reflective statements of a Rogerian nature", Waskow (1962) studied the effects of reinforcement on three types of client verbalization: feeling, content and feeling/content. In different groups of subjects, seen in interview situations, an appropriate statement was followed by a reflective comment. This procedure led to a significant increase in content statements, a nonsignificant increase in feeling/content statements and no increase at all in feeling statements. The authors suggest that there may be some aversive aspect to the reflection of affect which prevents it from being increased in this manner.

Anderson (1968) suggests that there may be more than simply the type of verbalization which influences the client's verbal behavior. He compared "high functioning" to "low functioning" therapists in terms of the effects of confrontive statements. High versus low functioning was determined by the degree to which a therapist possessed certain qualities: empathy, positive regard and genuineness. It was found that when the therapist was rated high on the desired traits, confrontive statements led to more self-exploration by the client.

To this point, the literature has not really shed much light on the question posed above. The studies have dealt simply with the conditioning of certain classes of verbal behavior. They present no evidence to support the notion that therapist verbalizations aid in the process of attitude change. A further look may be helpful.

Agras and Leitenberg (1969) used social praise in an attempt to modify the phobic behavior of two female patients. In both cases, one of agoraphobia and the other of claustrophobia, social praise was contingent upon the performance of increasingly phobic-related tasks. In the one case, this meant longer and longer walks alone on the hospital grounds. In the other, longer and longer time spent in a small, enclosed room. Both cases showed significant improvements as long as the praise was maintained. However, regression occurred with the removal of praise. Behavior again improved when praise was reinstated.

Thoresen and Krumboltz (1967) used positive statements to increase the frequency of information-seeking by clients in vocational counseling. One group received reward for each instance of information-seeking. A second group also received the reinforcement and, in addition, viewed a videotape of a "successful" client making information-seeking statements. A control group received no reward or modeling experiences. Not only was information-seeking increased in the two experimental groups, but followup interviews showed that the reinforcement/modeling group actually increased in information-seeking outside of the immediate counseling environment.

Suinn, Jorgenson, Stewart and McGuirk (1970) combined verbal praise with a number of nonverbal reinforcers in an attempt to modify

the attitudes and behavior of snake-phobic subjects. Subjects were pre-tested to determine their attitudes towards snakes. Pre-testing involved both verbal reports of feelings and a behavioral approach to a live snake, thus getting measures of two of the three components of attitude. Subjects were next presented cards on which pairs of statements were typed. These statements were positive and negative beliefs concerning snakes. Whenever a subject read the positive belief, she was reinforced. In this manner, subjects were led to significantly increase the approach behavior to the live snake. There was, however, no change in their verbal reports of feelings toward snakes.

Summary

With regard to the area of attitude change utilizing verbal techniques, the preceding examinations of the literature have demonstrated the need for work in at least three areas. First, past researchers have claimed to have modified various social attitudes via positive verbal reinforcement. In fact, all they seem to have done is to condition verbal behavior or responses on tests. Can this really be considered attitude change? From the standpoint of consistency theory, what these studies have attempted to do is manipulate systems of beliefs. It should follow, therefore, that if change is occurring, there will be indications of change not only in the verbalization of beliefs but also in statements of affect and, more importantly, in behavior related to the attitude object. The literature does not provide such evidence. The modification of verbal behavior alone is not sufficient to conclude attitudes have been changed.

This first area also relates to attitude change in a therapeutic

environment. Very little work in this area has addressed the outcome question in terms of attitude change. The studies usually are concerned with conditioning certain classes of client verbal behavior without really considering the possible implications. What little research has looked at the attitude change question tends to yield rather equivocal results. Thus, the issue remains unclear.

The second area is more specifically related to the verbalization process. When there is change, is it the verbal process itself which creates the imbalance? The literature seems to support the notion that it is, indeed, the experimenter's or therapist's words of praise or encouragement which are the key to change, but there is really no basis for such a conclusion. Rabbie, Bhrem and Cohen (1957) tested the hypothesis that the decision to effect an opinion contrary to one's own previously stated position is sufficient to create imbalance. They even went so far as to suggest that verbalization of the contrary opinion after the decision would lead to resistance rather than facilitation in the change process. The results were equivocal in that although the decision alone did seem to be sufficient for imbalance, verbalization tended to neither inhibit nor facilitate the change process.

The final area within the topic of attitude change and verbal processes concerns the question of awareness. There is a good deal of evidence to support both positions in the matter. It seems that all one can do is take his pick. In terms of a specific situation, all that can be done is to look for evidence of subject awareness or take elaborate precautions like Rosenfeld and Baer (1970). If there is none, then all the better. If there is, then the limitations of the

findings must be acknowledged.

Stated generally, it is the purpose of this project to examine the role of positive verbal reinforcement in the process of attitude change. It is speculated that such verbal reinforcement can serve to create an inconsistency between cognitive and affective elements of an attitude. This inconsistency in turn can lead to a readjustment of these elements (attitude change) to reestablish consistency. This process can be observed in both self report measures and behavioral indices of attitude change.

CHAPTER III

METHOD

Subjects

The subjects for this study were 48 undergraduates enrolled at Indiana-Purdue University at Indianapolis. There were 20 males and 28 females, all exhibiting a strong aversion to witnessing surgical operations. They represented a wide range of majors in school, and they varied in age from 18 to 25 years.

Apparatus

Two versions of a ten item self-rating questionnaire describing various situations of witnessing surgery (see Appendixes A and B), and a 16mm color film of a surgical technique were used for pre- and post-testing of attitudes. The film was titled "Removal of a Herniated Lumbar Intervertebral Disc". One hundred and fifty 3 x 5 inch cards, each with one negative and one positive statement about witnessing surgery, were used in the experimental treatment portion of the study (see Appendix C). To assess subject awareness of the reinforcement condition, a six item "impressions" questionnaire (see Appendix D) was administered to some subjects.

Experimental Procedure

The experimenter visited a number of classes in order to identify potential subjects. Each class was given a brief description of the study in which the students were led to believe experimenter was examining the effects of people's attitudes on their perceptions of other individuals. The classes were shown a diagram of a five point scale and asked to use the scale in rating their feelings about witnessing surgical operations. Point one on the scale represented very positive feelings. Point five represented very negative feelings. The students all turned in their ratings along with their name and phone number. They were told that some of them would be contacted for further participation. In actuality, only those who rated themselves "four" or "five" were contacted. In order to achieve the desired sample size, three "3.5" rated subjects were used. Previous research by the author (Stewart, 1972) has shown that the response to the item on the card correlates very significantly (beyond .001) with both the questionnaire and film watching behavior used in the pre-testing situation. Thus, this method of selection was considered to be a good discriminator between high and low fear persons in the matter of witnessing surgery.

After a subject was selected for pre-testing he was given the ten item self-rating questionnaire. Each item described a situation involving the observation of a surgical operation. Subject was asked to imagine himself in this situation and to rate his feelings on a seven point scale from "very positive" to "very negative". The ratings on these items were summed to give a quantitative measure of subject's

subjective feelings about witnessing surgery.

Following completion of the questionnaire, subject was told that there was an actual color film of a surgical technique in another room and that he was requested to watch the film. It was stressed that he would be in complete control of starting and stopping the film, and that he would watch only as much as he was willing to watch. In the room with the film was a projector with two ON-OFF switches, both of which had to be in the ON position for the film to run. Subject was instructed to turn on the film, using one of the switches, when he was ready. He was further instructed to concentrate fully on the film and to turn it off when he wanted to stop watching. It was stressed that he must concentrate on the film because if at any time he looked away or closed his eyes without turning off his switch experimenter would do so with his own switch and the session would be ended. The length of time subject watched the film was measured in fractions of a minute with a stop watch, and the reading taken as a behavioral indication of his attitude toward witnessing surgery. Previous research by the author (Stewart, 1972) has shown that if a person watches the film for more than six minutes he is likely to watch the whole thing. Therefore, any subject who watched for six minutes was interrupted and pre-testing discontinued. This subject was not continued in the study. The author has also shown a highly significant correlation (beyond .001) between the questionnaire and the film watching behavior. Therefore, if a highly negative questionnaire score was paired with a six minute film watching or if a high positive questionnaire score was paired with a very short film watching, subject was considered to be inconsistent within the components of his attitude

and was dropped from the study. Only subjects showing consistent negative attitudes to the idea of witnessing surgery were used in the total experiment. It is noted that no subjects had to be dropped for inconsistency reasons.

Once subject completed pre-testing he was randomly placed into one of four experimental groups. Each group contained 12 subjects. These groups are described as follows:

Group I--In this group subjects participated in two sessions separated by one day. During the first day they were pre-tested and then given 75 3" x 5" cards, one at a time. They were instructed to pretend that they were medical students and then read to themselves both statements on the card. Having done this they were instructed to decide which statement was more representative of their attitudes as medical students and to read that choice aloud. If the correct statement was read (positive one) they received verbal praise and encouragement. During the second session the procedure was repeated with a different set of 75 cards. Following completion of this set, post-testing procedures were carried out. This consisted of the second form of the questionnaire and the behavioral measure. After post-testing, subjects filled out an "impressions" form designed to determine whether they had become aware of the true nature of the study.

Group II--Subjects in this group followed the same procedures as those in Group I, with the exception

that at no time did they receive verbal praise or encouragement.

Group III--Again the procedure for this group was similar to that of Group I with an exception. Subjects were instructed simply to reread the statement of choice to themselves. This group, of course, received no praise.

Group IV--This group served the purpose of checking for any possible desensitizing effects from being exposed to the pre- and post-testing situations. Thus subjects went through pre- and post-testing (self-rating and film watching) in the same manner as the other three groups but did not receive the cards in between.

Following the procedures described above, all subjects went through a "debriefing" interview. They were asked how they felt about having participated in the study, and for their opinions concerning it. They were also told the true nature of the study and the part which they played was explained.

The hypotheses to be tested in the study are as follows:

H₁--The self-ratings for Group I will decrease significantly from pre- to post-testing, while those for all other groups will remain the same.

H₂--The film watching time for Group I will increase significantly from pre- to post-testing, while this time for all other groups will remain unchanged.

CHAPTER IV

RESULTS

Following collection, the data were analyzed using techniques from Winer (1971). The tables which follow present the results of these analyses.

TABLE I
ANALYSES OF VARIANCE OF PRE-TEST DATA

Measure	Source	SS	df	MS	F	p
Self-rating	Method	1.02	3	0.34	0.83	N.S. <.30
	Error	19.06	47	0.41		
Film time	Method	4.13	3	1.38	1.01	N.S. <.30
	Error	64.21	47	1.37		

Taken from: Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1971, p. 160.

TABLE II
 SUMMARY DATA FOR THE SELF-RATING QUESTIONNAIRES
 AND THE FILM WATCHING MEASURES

Groups	Self-rating (scale units)				Film watching (minutes)			
	Pre		Post		Pre		Post	
	\bar{X}	s.d.	\bar{X}	s.d.	\bar{X}	s.d.	\bar{X}	s.d.
I.	3.94	0.66	3.33	1.20	2.83	1.02	3.78	1.73
II.	3.99	0.49	3.98	0.77	2.05	1.29	2.09	1.33
III.	4.06	0.68	4.12	0.66	2.52	0.94	2.43	1.13
IV.	3.68	0.69	3.63	0.87	2.68	1.33	3.16	1.39

TABLE III
ANALYSES OF VARIANCE OF PRE- AND
POST-TEST DATA COMBINED

Measure	Source	SS	df	MS	F	p
Self-rating						
	Between Subject					
	A	3.88	3	1.29	1.17	N.S. $<.25$
	Subject Within					
	Groups	48.37	44	1.10		
	Within Subject					
	B	0.62	1	0.62	2.38*	$<.25$
	AB	1.63	3	0.54	2.08*	$<.25$
	B x Subject Within					
	Groups	11.26	44	0.26		
Film Time						
	Between Subject					
	A	20.65	3	6.88	2.32*	$<.10$
	Subjects Within					
	Groups	130.12	44	2.96		
	Within Subject					
	B	2.83	1	2.83	4.10*	$<.05$
	AB	3.94	3	1.31	1.90	N.S. $<.25$
	B x Subject Within					
	Groups	30.22	44	0.69		

* significant beyond tabled value for stated p
N.S.: nonsignificant (not beyond tabled value of p)

Although the results of the data analyses reported in Table III suggest significance limited to pre-post film watching change, an examination of the summary data in Table II suggest that other significant changes may have in fact occurred. Therefore to evaluate this possibility individual match pair t-tests (Winer, 1971, p. 499) were carried out on the pre- and post-treatment means for each group. These results are summarized in Table IV.

TABLE IV
t-SCORES AND CRITICAL LEVELS FOR THE INDIVIDUAL
 PRE- TO POST-TEST COMPARISONS

Groups	Self-rating			Film watching		
	<u>t</u>	<u>df</u>	<u>p</u>	<u>t</u>	<u>df</u>	<u>p</u>
I.	2.90*	44	<.005	2.79*	44	<.005
II.	0.05	44	ns <.50	0.12	44	ns <.50
III.	-0.29	44	ns <.50	-0.26	44	ns <.50
IV.	0.24	44	ns <.50	1.41*	44	<.10

* significant beyond tabled value for stated p
 ns: non-significant (not beyond tabled value for stated p)

CHAPTER V

DISCUSSION

The hypotheses of this study were strongly supported. The one way analysis of variance of the pretest scores substantiated the assumption that subjects in the various groups would initially score the same on both rating of feelings toward witnessing surgical operations and amount of time spent watching the film. The t-tests for pre/post differences strongly supported the predictions that Group I subjects would, following treatment, watch significantly more film (Hypothesis II) and would also significantly lower their fear ratings (Hypothesis I). An informal inspection of the data for this group gave no indication of differential responding by sex of subject to account for the significance.

The next task is to translate the statistical findings back into the language of the theoretical discussion. The original idea was to examine the roles of various factors in the process of changing phobic attitudes. Rosenberg's cognitive-affective consistency model of attitude change seemed an appropriate framework within which to complete this examination. Briefly restated, this model asserts that if there is an inconsistency between a person's beliefs and feelings toward some object or idea, he will do whatever is necessary to eliminate the inconsistency. In terms of this study, if subject experienced an inconsistency between his attitudes and feelings toward

witnessing surgery he would make some attempt to resolve the inconsistency. Since the study was designed to manipulate attitudes, the most likely way to resolve the inconsistency would be to change his feelings. It would appear that this is in fact what happened.

Group I subjects were asked to choose "appropriate" statements about witnessing surgery and to read them aloud. If the "correct" (positive) statement was read subject was given verbal praise and encouragement. Since the task was deliberately structured to maximize "correct" choosing, the treatment cannot be considered to be merely verbal conditioning. Being exposed to and being encouraged to make counter-attitudinal statements led to a discrepancy between beliefs and feelings for these subjects, which in turn led to a modification of negative feelings about witnessing surgery. This modification was reflected in the significant decrease from pre- to post-test fear ratings. The associated change in behavior (significantly increased film watching) suggests that again the change was more than superficial verbal conditioning.

It is possible that simply making the counter attitudinal statements, without encouragement, was sufficient to bring about the discrepancy. Thus Group II received the same treatment as Group I, but with no reinforcement. This condition was similar to that developed by Dunlap (1932), which he termed "negative practice". Briefly, the technique involves the repetition of a given task, usually an undesirable habit, to the point of exhaustion in order to build a reactive inhibition. For Group II the task was actually opposite to the undesirable habit, though it is possible that if some of the negative feelings associated with witnessing surgery were aroused by reading

the statements this approach could have had a similar extinguishing effect. Since, however, there were no significant pre- to post-treatment changes in Group II, it cannot be said that simply reading the statements was sufficient to lead to change.

Another potential factor in creating discrepancy was the act of thinking the inconsistent idea. The study by Rabbie et al (1957) cited earlier seemed to support this idea. In order to examine this possibility, Group III subjects were instructed to read the choice statement to themselves. Again there was no significant pre- to post-test change, thereby giving no support to the idea that merely thinking inconsistent thoughts can create inconsistencies leading to attitude change.

A third alternative to the role of verbal reinforcement explored in this study dealt not with the treatment process but rather the pre- and post-treatment testing procedures. Specifically it is possible that subjects experienced a certain amount of habituation as a result of watching the film. This is somewhat different than the "negative practice" theory discussed above, since the latter involves the repetition of a specific behavior. Habituation, on the other hand, deals with the repeated presentation of a specific stimulus. Briefly, the repetition of a noxious or anxiety producing stimulus leads to a weakening of the arousal (anxiety) response (Lader and Matthews, 1968). In terms of the present study, watching the film may have led to a certain amount of phobic anxiety arousal. Seeing the film the second time may have led to less anxiety and, therefore, more film watching time. There is some evidence that this process can occur in situations similar to that involved in the present study.

Solyom, McClure, Heseltine, Ledwidge, and Solyom (1972) examined the possibility that habituation could account for the observed benefits of "aversion relief therapy" (the pairing of the cessation of a noxious stimulus with the presentation of a phobic stimulus). Subjects listened to pretaped descriptions of events building up to a phobic situation. At points on the tape immediately preceding mention of the phobic situation there were brief pauses. At these points subjects in the aversion relief group received an uncomfortable electric shock. The shock terminated when the tape again began playing and the phobic situation was mentioned. The only difference in the habituation group was that no shock was administered. The results of this study showed that although there is a definite trend toward greater phobia relief in the aversion relief group the differences between the two groups were nonsignificant. The authors concluded that the possibility of an habituation effect could not be ruled out.

Epstein (1971) studied the effects of habituation on experimentally induced anxiety. A trial for each subject consisted of listening to a pretaped counting sequence going from 1 to 15. When the count reached ten an uncomfortable shock was administered. Throughout the counting sequence continuous measures of Galvanic Skin Response were carried out. At the end of the sequence, subject rated the intensity of the shock on an 11 point scale. This procedure was carried out twice for each trial over a five-trial period. The results suggested that across trials there was a significant reduction in reactivity to the shock, as well as a decrease in the intensity ratings.

In order to examine the possibility of habituation in the present study subjects in Group IV went through the pre- and post-testing

procedures only. They received no treatment. Since they, like Groups II and III, showed no significant change the possibility of an habituation effect could be ruled out. It should be noted that although this group did not reach what is traditionally held to be statistical significance (.05), it did show a much greater tendency to change than Groups II or III. A more extensive examination of the role of habituation may yield some explanations.

A final alternative explanation to account for the observed changes in Group I involved the possibility of subject awareness of the true nature of the experiment. As discussed earlier, research on this topic is inconclusive. It was proposed that the best way to determine the role of subject awareness in a given study was to check for its presence. In order to do this subjects in Group I were asked to complete a brief form designed to obtain information regarding their perception of the nature of the experiment. In response to this questionnaire and in the debriefing of all subjects following the experiment, no evidence of subject awareness could be found.

Thus, based on the results of this study, it can be concluded that a discrepancy between beliefs and feelings was generated in treatment Group I. This discrepancy led to an attitude change as measured by both a subjective rating of feelings toward witnessing surgery, and the behavioral task of watching a color film of a surgical technique. Furthermore, it can be concluded that verbal reinforcement in the form of praise and encouragement was the critical factor leading to the establishment of this discrepancy.

CHAPTER VI

SUMMARY

This study investigated the role of verbal reinforcement in the process of changing a phobic attitude.

Forty-eight undergraduate students identified as having strong or very strong negative feelings toward watching a surgical operation were administered a self-report rating of their feelings about being in specific situations involving the observation of surgery. They were also asked to watch as much as they were willing of a color film of a surgical technique. This same procedure was carried out following the experimental treatment. After pre-testing subjects were randomly assigned to one of four treatment programs to create four groups of 12. Group I subjects chose statements from a series of cards containing two statements about witnessing surgery. If their choice was "correct" (the positive statement) they were given verbal praise and encouragement. Group II subjects received the same treatment but were not verbally reinforced. Subjects in Group III were instructed to read the chosen statements silently. Finally Group IV received no treatment between pre- and post-testing.

Two hypotheses were tested: (1) Group I would show a significant decrease in fear ratings between pre- and post-testing, while the other groups would not. (2) Group I would show a significant increase in film watching time between pre- and post-testing, while the other

groups would not.

Both hypotheses were supported. The conclusions drawn were: (1) the establishment of a discrepancy between beliefs and feelings led to an observable attitude change. (2) Verbal reinforcement in the form of praise and encouragement played a major role in establishing the discrepancy.

REFERENCES

- Adams, H. E., & Frye, R. L. Psychotherapy techniques as conditioned reinforcers in a structured interview. Psychology Reports, 1964, 14(1), 163-166.
- Agras, S., & Leitenberg, H. The role of selective positive reinforcement in the modification of phobic behavior. Canadian Psychiatric Association Journal, 1969, 14(1), 69-80.
- Anderson, S. Effects of confrontation by high and low functioning therapists. Journal of Counseling Psychology, 1968, 15(5), 411-416.
- Babbitt, H. G. An attempt to produce changes in attitude toward the self by means of verbal conditioning. Journal of Verbal Learning and Verbal Behavior, 1962, 1, 169-172.
- Bergin, A. E. The effect of dissonant persuasive communications upon changes in a self-referring attitude. Journal of Personality, 1962, 30, 423-438.
- Betz, B. J. Attitudinal interaction in psychotherapy. American Journal of Psychotherapy, 1970, 24(2), 477-484.
- Buckhout, R., & Rosenberg, M. Verbal reinforcement and attitude change. Psychology Reports, 1966, 18, 691-694.
- Carlson, E. Attitude change through modification of attitude structure. Journal of Abnormal and Social Psychology, 1956, 52, 256-261.
- Dulany, D. Hypotheses and habits in verbal operant conditioning. Journal of Abnormal and Social Psychology, 1961, 63, 251-263.
- Dunlap, K. Habits: Their Making and Unmaking. New York: Liveright, 1932.
- Ellis, A. Goals of psychotherapy. In Mahrer, A. The Goals of Psychotherapy. New York: Appleton-Century-Crofts, 1967.
- Epstein, S. Heart rate, skin conductance, and intensity ratings during experimentally induced anxiety: Habituation within and among days. Psychophysiology, 1971, 8(3), 319-331.
- Festinger, L. A Theory of Cognitive Dissonance. New York: Harper and Row, 1957.

- Fishbein, M. An investigation of the relationships between beliefs about an object and the attitude toward that object. Human Relations, 1963, 16, 233-239.
- Gale, E. N., & Jacobson, M. B. The relationship between social comments as UUCS and fear responding. Behavior Research and Therapy, 1970, 9(3), 301-307.
- Heider, F. Attitudes and cognitive organization. Journal of Psychology, 1946, 21, 107-112.
- Hekmat, H., & Vanian, D. Behavior modification through covert semantic desensitization. Journal of Consulting and Clinical Psychology, 1971, 36(2), 248-251.
- Insko, C. A. Theories of Attitude Change. New York: Appleton-Century-Crofts, 1967.
- Insko, C. A., & Melson, W. H. Verbal reinforcement of attitudes in laboratory and non-laboratory contexts. Journal of Personality, 1969, 37, 25-40.
- Katz, D., & Stotland, E. A preliminary statement to a theory of attitude structure and change. In Kock, S. (ed.) Psychology: A Study of Science, Vol. III. New York: McGraw-Hill, 1959.
- Osgood, C., & Tannebaum, P. The principles of congruity in the prediction of attitude change. Psychological Review, 1955, 62, 42-55.
- Ostrom, T., & Goldstein, J. Reinforcement and prior information in the judgment of others' attitudes. Psychonomic Science, 1970, 19, 319-320.
- Rabbie, J. M., Brehm, J. W., & Cohan, A. O. Verbalization and reactions to cognitive dissonance. Journal of Personality, 1957, 27, 407-417.
- Rosenberg, M. An analysis of affective cognitive consistency. In Joulard, C., & Rosenberg, M. (eds.) Attitude Organization and Change. New Haven, Conn.: Yale University Press, 1960.
- Rosenberg, M. Cognitive reorganization in response to the hypnotic reversal of attitudinal affect. Journal of Personality, 1960, 28, 39-63.
- Rosenberg, M. Cognitive structure and attitudinal affect. Journal of Abnormal and Social Psychology, 1956, 53, 367-372.
- Rosenberg, M., & Oltman, P. Consistency between attitude affect and spontaneous cognitions. Journal of Psychology, 1962, 54, 485-490.

- Rosenfeld, H. M., & Baer, D. M. Unbiased and unnoticed verbal conditioning: The double-agent robot procedure. Journal of the Experimental Analysis of Behavior, 1970, 14, 99-107.
- Schellenberg, J. Social Psychology. New York: Random House, 1970.
- Scott, W. A. Attitude change through reward of verbal behavior. Journal of Abnormal and Social Psychology, 1957, 55, 72-75.
- Scott, W. A. Cognitive consistency, response reinforcement and attitude change. Sociometry, 1959, 22, 219-229.
- Secord, P., & Backman, C. Social Psychology. New York: McGraw-Hill, 1964.
- Sherif, M., & Sherif, C. Social Psychology. New York: Harper and Row, 1969.
- Solyom, L., McClure, D., Heseltine, G., Ledwidge, B., & Solyom, C. Variables in the aversion relief therapy of phobias. Behavior Therapy, 1972, 3(1), 21-28.
- Spielberger, C., Levin, S., & Shepard, M. The effects of awareness and attitude toward the reinforcement on the operant conditioning of verbal behavior. Journal of Personality, 1962, 30(1), 106-121.
- Staats, A. W., & Staats, C. K. Attitudes established by classical conditioning. Journal of Abnormal and Social Psychology, 1958, 57, 37-40.
- Stewart, S. T. Cross-validation of attitude criterion measures. Unpublished research, 1972, Oklahoma State University.
- Suinn, R., Jorgenson, G., Stewart, S., & McGuirk, F. Fears as attitudes: Experimental reduction of fear through reinforcement. Journal of Abnormal Psychology, Dec., 1971.
- Thoresen, C., & Krumboltz, J. Relationship of counselor reinforcement of selective responding to external behavior. Journal of Counseling Psychology, 1967, 14(2), 140-144.
- Truax, C. Reinforcement and non-reinforcement in Rogerian psychotherapy. Journal of Abnormal Psychology, 1966, 71, 1-9.
- Van Kaam, A. The goals of psychotherapy from the existential point of view. In Mahrer, A. The Goals of Psychotherapy. New York: Appleton-Century-Crofts, 1967.
- Wandzek, F. D. Effects of positive verbal reinforcement on undergraduate females using selective items from the Oliver Educational Interest Inventory. Doctoral dissertation, Florida State University, 1967.

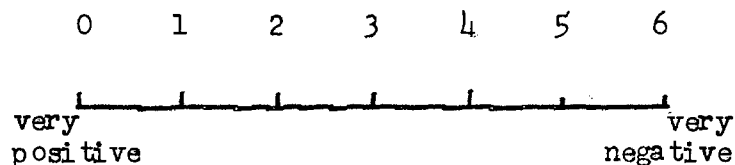
- Waskow, I. Reinforcement in a therapy-like situation through selective responding to feeling or content. Journal of Consulting Psychology, 1962, 26(1), 11-19.
- Winer, B. J. Statistical Principles in Experimental Design. New York: McGraw-Hill, 1971.
- Wilder, S. The effect of verbal modeling and verbal reinforcement on the frequency of self-referred affect statements. Doctoral dissertation, Columbia University, 1967.
- Williams, R. Verbal conditioning in psychotherapy. Doctoral dissertation, University of Kentucky, 1963.
- Wolberg, L. Goals in psychotherapy: Practical applications. In Mahrer, A. The Goals of Psychotherapy. New York: Appleton-Century-Crofts, 1967.
- Wolpe, J. The Practice of Behavior Therapy. New York: Pergamon, 1969.
- Wolpe, J., & Lazarus, A. Behavior Therapy Techniques. New York: Bergamon Press, 1966.

APPENDIXES

APPENDIX A

SELF-RATING QUESTIONNAIRE (PRE-TESTING)

Below are ten statements, each of which has something to do with witnessing an operation. Read each statement, and indicate in the space provided, how you would feel if you were in the situation described. Mark your answer according to the scale:



1. ___ You are reading a detailed account of a surgical operation which includes color photos of the various steps.
2. ___ You go to class one day and discover that there is going to be a film about an actual surgical operation.
3. ___ You are standing at the doctor's side as he makes the incision and begins the operation.
4. ___ As part of a course you are taking, the teacher suggests a field trip to a hospital to observe a surgical operation.
5. ___ You are watching T.V. when the announcer comes on and says the next show is about surgical operations.
6. ___ You are watching a patient being put on the operating table and prepared for surgery.
7. ___ You are asked to observe a color film of an actual surgical operation.
8. ___ You are witnessing a surgical operation, but the patient is draped with sheets, and you are unable to see what's going on.
9. ___ You are in the gallery of an operating theatre watching a surgeon perform an operation.
10. ___ A friend describes to you in detail a surgical operation he once witnessed.

APPENDIX B

SELF-RATING QUESTIONNAIRE (POST-TESTING)

APPENDIX C

SAMPLES OF STATEMENT PAIRS

Witnessing operations is a terrible experience.

Witnessing operations is great.

Witnessing operations leaves me with a sense of well-being.

Witnessing operations frightens me to death.

Witnessing operations is a vital part of the medical education process.

Witnessing operations is a worthless waste of time.

Witnessing operations makes me never want to need surgery.

Witnessing operations gives me a sense of trust in surgeons.

Witnessing operations is disgusting.

Witnessing operations is fascinating.

Witnessing operations is better than reading about them.

Witnessing operations is a goulish experience.

Witnessing operations shows me the real meaning of teamwork.

Witnessing operations has no redeeming value.

Witnessing operations gives me a cold, uneasy feeling.

Witnessing operations gives me a thrilling feeling.

APPENDIX D

SUBJECT AWARENESS QUESTIONNAIRE

✓
VITA

Stephen Thomas Stewart

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE EFFECT OF VERBAL REINFORCEMENT IN THE MODIFICATION OF
A PHOBIC ATTITUDE

Major Field: Psychology

Biographical:

Personal Data: Born in Mesa, Arizona, March 18, 1947; married to Mary Amanda Fowler, September 2, 1967; two children, Corin Justine, born July 13, 1970, and Benjamin George, born February 21, 1973.

Education: Graduated from Highland High School, Albuquerque, New Mexico, June, 1965; attended Colorado State University, Ft. Collins, Colorado, receiving a Bachelor of Science degree with a major in Psychology, June, 1969; received the Degree of Master of Science with a major in Psychology, Oklahoma State University, Stillwater, Oklahoma, May, 1972; completed requirements for the Degree of Doctor of Philosophy at Oklahoma State University, December, 1973.

Professional Experiences: Graduate Teaching Assistant, Fall Semesters, 1969, 1970, 1971; Child Guidance Volunteer, Payne County Guidance Center, Spring, 1970; Psychologist-in-training, University of Oklahoma Medical Center, Department of Psychiatry, Summer, 1970; Psychological Associate, Psychological Guidance Center, Oklahoma State University, 1971-1972; Associate Faculty, Indiana-Purdue Universities at Indianapolis, Indianapolis, Indiana, September, 1972-May, 1973; Psychology Intern, Larue D. Carter Memorial Hospital, Indianapolis, Indiana, September, 1972-August, 1973; Clinical Associate, Suicide Prevention Service, Indianapolis, Indiana, March, 1973-continuing.