



1970

## Verbal Operant Conditioning: Response Generalization as a Function of the Need for Social Approval

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VERBAL OPERANT CONDITIONING: RESPONSE  
GENERALIZATION AS A FUNCTION OF  
THE NEED FOR SOCIAL APPROVAL

By

Victor J. Heckler

A Dissertation Submitted to the Faculty of the Graduate  
School of Loyola University in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy

January 1970

### Acknowledgements

The author wishes to thank his advisor, Dr. Frank J. Kobler, for his guidance and assistance through the preparation and completion of this study. Gratitude is also expressed to the other members of his Dissertation Committee, Drs. William A. Hunt and Ronald E. Walker, whose very thoughtful observations contributed much to the adequacy of this work.

Many thanks are also due Drs. Patrick R. Laughlin and James B. Erdman for their generous assistance in the choice of the statistical techniques.

The author is also grateful to Dr. Vincent Pisani, Chief Psychologist of the Chicago Alcoholic Treatment Center, and to Miss Phyllis Snyder, Executive Director of the Center, for their examination and approval of the research and for permitting the use of patients at the Center as Ss for this study. Numerous other personnel at the Center were very helpful in the scheduling of Ss and in making the author's days and evenings there most pleasant.

Mrs. Rosella Klemz is thanked for her patience and cooperativeness in the typing of this report.

Finally, the author wishes to express his sincere appreciation to his wife, Mary Anne, for her tolerance and encouragement displayed not only through the preparation of this study but also during the author's entire graduate career.

### Vita

The author was born in Chicago, Illinois on August 10, 1942. After graduation from St. Mel High School in 1960, he attended Loyola University, Chicago, and received the degree of Bachelor of Science in June, 1964. He began his graduate studies in the Department of Psychology of Loyola University in September, 1964 and was awarded the Master of Arts degree in February, 1967. He took his clerkship at the Veterans Administration Research Hospital and his internship at Hines Hospital and the Outpatient Clinic of the Westside Hospital. In March, 1969, he took the position of Research Associate at Loyola University, where he is currently employed.

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## Chapter I

## INTRODUCTION

Verbal operant conditioning is a descriptive label for a variety of techniques. Common among them is the attempt of E to influence the verbal behavior of S through the planned use of social reinforcement. Social reinforcement is usually of a verbal nature, but motor behavior (e.g., a head nod or smile) is also employed. Some researchers (Greenspoon, 1962; Williams, 1964) have drawn into focus differences between the operant conditioning of verbal behavior of humans and the operant conditioning of motor behavior of infrahumans. However, the resemblance between the two is striking and the label persists.

Several authors, most notable among them Krasner (1962), have drawn parallels between verbal operant conditioning and psychotherapy. Both processes are viewed within the framework of a reinforcement theory of learning. They are not unique but are seen as members of a large class of influencing processes. Others (e.g., Luborsky & Strupp, 1962) have sharply criticized the validity of the parallels between the two. The debate has been more emotional than rational. What is needed is more attention to the empirical data. Particularly crucial are data



on the generalization of conditioned verbal behavior. The majority of existing studies of generalization effects have been geared toward demonstrating these effects and have not taken into account individual differences. Further, relatively few have set out to establish generalization effects which might be considered therapeutic (e.g., Krumboltz & Thoresen, 1964; Ullmann, Krasner, & Collins, 1961). A goal of this study is to demonstrate generalization effects which are assumed to be therapeutic and which are a function of a relevant personality variable.

The personality variable is the need for social approval as measured by the Marlowe-Crowne Social Desirability Scale (MC SDS) (Crowne & Marlowe, 1960). High need for approval Ss, as contrasted with lows, have been shown to be more verbally conditionable (e.g., Crowne & Strickland, 1961; Epstein, 1964). They are also more defensive (e.g., Conn & Crowne, 1964; Lichtenstein & Bryan, 1965; Tutko, 1962). It is the intent of this study to therapeutically utilize the heightened conditionability of high scorers on the MC SDS in order to lower their defensiveness.

The measure of defensiveness is a perceptual defense test adapted from Shannon (1955). Previous studies have shown that perceptual defensiveness (1) can be lowered through the conditioning of emotional words (Ullman, Weiss, & Krasner, 1963) and (2) bears a positive relationship to the MC SDS (Barthel &

Crowne, 1962).

The purpose of the present study is to provide some empirical evidence upon which the utility of the verbal operant conditioning model of therapeutic change may be judged. This model of therapeutic change, as any other, must demonstrate generalization from one context to another. The present study proposes to do just that. The majority of studies of the generalization of verbal responses which have been operantly conditioned have used tasks which have been emotionally neutral. However, the content of psychotherapy is often strongly affective. The relevance of these studies to psychotherapy has been questioned because of this discrepancy. In order to decrease this discrepancy, the present study will test the propositions that the expression of affect is related to verbal reinforcement and that increased affective expression generalizes from one context to another. It will take into account a personality variable, the need for social approval, which is related on both theoretical and empirical grounds to verbal operant conditioning and affective expression. Persons who have a high need for social approval verbally condition more readily than lows and are relatively less likely to respond openly to affective stimuli. The originality of the present study lies in the tactic of utilizing the conditionability of high need for approval ss in a therapeutic fashion, i.e., conditioning them to express themselves affectively. It is further proposed that this

predicted increase in affective expression generalizes from one set of stimulus conditions to another.

The specific hypotheses of this study are the following:

1. There will be a significant interaction between the score on the MC SDS and the presence or absence of verbal conditioning on perceptual defense test (PDT) scores. That is, the difference between the mean scores on the PDT for a group of low scorers on the MC SDS who do not receive conditioning and for a group of low scorers who do receive conditioning will be of a certain magnitude. This difference will be of a larger magnitude between groups of high scorers. The difference for groups of medium scorers will be of an intermediate value.
2. The high scorers on the MC SDS who do not receive verbal conditioning will have significantly higher scores on the PDT than lows who do not receive conditioning. The mediums will have intermediate PDT scores.
3. The high scorers on the MC SDS will show significantly lower frequencies of emotional words during the initial phase of conditioning than lows. The mediums will display an intermediate frequency.
4. The high scorers on the MC SDS will show more marked conditioning effects than lows. The mediums will display intermediate effects.

## Chapter II

## REVIEW OF RELATED LITERATURE

Verbal Operant Conditioning: An Introduction

Verbal operant conditioning has been described by Krasner (1965) as "the systematic application of social reinforcement to influence the probability of another person emitting a specifiable verbal behavior [p. 213]." A description of the verbal operant conditioning paradigm should include the nature of the social reinforcement, the task set for S, and the response class reinforced. The type of social reinforcement varies from study to study. Some examples of social reinforcement are the following: agreement with S (Verplanck, 1955), a simple "umhmm" (Greenspoon, 1955) or "good" (Doherty & Walker, 1966; Quay & Hunt, 1965), head nods and smiles (Wickes, 1956), psychoanalytic interpretation (Timmons, Noblin, Adams, & Butler, 1961), and others (Salzinger, 1959).

The task set for S can vary greatly in the degree of structure. On the one extreme is found casual conversation (Verplanck, 1955) and the clinical interview (Krumboltz & Thoresen, 1964). At the other is the construction of a sentence given a verb and several pronouns from which to choose (Taffel, 1955). The first extreme offers naturalism but sacrifices control over some variables (i.e., the discriminative stimulus, differences in the productivity of different Ss). The

priorities are reversed at the other. When task structure is loose, as in an interview, the critical response class may be rather large, not very well specified, and highly dependent on E's judgment. For example, Salzinger and Pisoni (1958) successfully conditioned "affective responses" of schizophrenics during a single clinical interview. On the other hand, when task structure is high, the response class is usually comparatively small, well-defined, and objective. A good example of a procedure using a narrow response class is that employed by Taffel (1955). In the basic method the critical behavior is the choice of "I" or "we" from a group of pronouns in the construction of sentences. The response class consists of two words. This procedure is referred to as Taffel-type. This paradigm and variations of it have been very popular (e.g., Bryan & Kapche, 1967; Doherty & Walker, 1966; Epstein, 1964; Spielberger, DeNike, & Stein, 1965; Quay & Hunt, 1965).

The formulation of a theoretical rationale for the specification of the limits of response classes has been a very thorny problem (Salzinger, 1959). The problem is no less thorny for practical purposes. E may believe that he is reinforcing one aspect of a response but may observe results which are quite unexpected. For example, Wilson and Verplanck (1956) tried to condition plural nouns but found an increase in the names of tribes in one S. Staats (1961) proposed a model of verbal habit-families based on Hull's notion of habit-family. He

recognized the validity of the problems so well articulated by Salzinger (1959) but remained on the theoretical level and provided only the barest outline for the empirical selection of response classes. In sum, the individual researcher is no better off with regard to this problem than he was ten years ago. He must still rely, as Salzinger (1959) put it, on his "common sense knowledge of verbal behavior to decide upon the selection of response classes [p. 70]."

The nature of the social reinforcement, the task structure, and response class are the basic elements of the verbal conditioning paradigm. In addition to these, a host of other variables (E status, personality characteristics of both E and S, emotional atmosphere surrounding the experiment, etc.) has been investigated and extensively reviewed (Greenspoon, 1962; Kanfer, 1968; Kessel & Barber, 1968; Krasner, 1958, 1962, 1965; Salzinger, 1959, Williams, 1964).

#### Critique I: Is this Operant Conditioning?

Williams (1964) gathered together several theoretical issues which drew into question the validity of the label "operant conditioning" to describe the changes in verbal behavior reported in studies grouped under that rubric. In other words, is it possible to conceptualize, for example, Salzinger and Pisoni's (1958) schizophrenic S who is rewarded with an "mmhmm" every time he shows some affect in the same way as Skinner's pigeon which is rewarded with food when it

pecks at a disc?

The first issue is the relationship between awareness of the response-reinforcement contingency and conditioning. It might be elaborated best through illustration. Dulaney (1961) partially replicated Greenspoon's (1955) work. In this type experiment SS are verbally reinforced for the emission of plural nouns during the last four of five blocks of time in a relatively free and unstructured setting. Dulaney found that more than 75% of the experimental SS increased their mean frequency of plural nouns in the four reinforced blocks as compared to the nonreinforced block. However, no SS were able to verbalize a relationship between the emission of plural nouns and reinforcement. But many SS stated that E was studying their associations, and about 33% of these felt that the reinforcement was given for staying within the same category. On a post hoc basis SS were therefore divided into three groups: reinforcement for association, associative hypothesis alone, and no associative hypothesis. The first group showed a significant learning effect, the second showed a less marked one, and the third was not different from controls. The results of this study suggest that verbal operant conditioning resembles operant conditioning of infrahumans only up to a point. In order to understand the basic process, the state of consciousness must be reckoned with.

Another illustration of the problem is found in studies of the more structured Taffel-type conditioning. Here is a striking

parallel with the sequence of findings in the less-structured Greenspoon-type conditioning. Taffel (1955) and Greenspoon (1953) both did not find that Ss could correctly verbalize the reinforcement contingency. However, a later investigator, in this case Levin (1961), utilized a more sophisticated assessment technique and found that only the aware Ss conditioned. Levin's findings in the Taffel paradigm were parallel to Dulaney's (1961) in the Greenspoon paradigm.

The studies by Dulaney (1961) and Levin (1961) have not, however, settled the question of the relationship between conditioning and awareness. Some subsequent authors using careful questioning procedures have found no relationship in Taffel-type conditioning (e.g., Marlowe, Beecher, Cook, & Dobb, 1964; Oakes, 1967) while others have (Ells, 1967; Holmes, 1967). Similarly, Crowne and Strickland (1961) found no relationship in Greenspoon-type conditioning, while Matarazzo, Saslow, and Pareis (1960) did.

Two other developments in the study of awareness should be noted. The first is the attempt to manipulate the state of awareness of S through instructional set in order to more accurately assess its relationship to conditioning (Kanfer & Marston, 1961; Krasner, Weiss, & Ullmann, 1959; Meerbaum & Lukens, 1968; Spence, 1966). The results of these studies generally support the contention that task relevant information will facilitate learning in verbal conditioning experiments.



The second development is the attempt to relate personality characteristics of S to awareness. Doherty and Walker (1966) found that conditionability in a Taffel-type experiment was related to awareness and S's attitude toward reinforcement which was a function of anxiety level. Spielberger, DeNike, and Stein (1965) had previously failed to find relationships among anxiety, awareness, and conditioning.

The above review suggests that, although the relationship between conditioning and awareness is not simple and direct, any future studies should take this variable into account (Eriksen, 1962). Further, even if future research does conclusively show an invariant relationship, the theoretical and practical worth of verbal conditioning will not be obviated (Greenspoon, 1962; Holtz & Azrin, 1966; Krasner, 1962; Postman & Sassenrath, 1961).

Greenspoon (1962) has questioned the legitimacy of calling all studies in this area conditioning. In many experiments S does not acquire any new responses. Often S does not freely emit critical responses; he is merely forced to choose alternatives, as in Taffel-type conditioning. Another point that Greenspoon made was that, according to Skinner (1955), it is necessary to conceive of response classes whose members share certain common characteristics. In some studies of the Taffel-type a single word was reinforced. This clearly does not fit the operant conditioning paradigm because the reinforced response is unique

and does not allow for generalization to a larger class of responses.

In conclusion, although the verbal operant conditioning studies have revealed certain features which differ from animal studies (awareness, restraints on the range of possible responses, limited response classes), they have as a group solidly demonstrated that verbal response probabilities can be systematically changed by the introduction of verbal reinforcements contingent on these responses.

#### Verbal Conditioning as Therapy

Several recent investigators have attempted to draw parallels between verbal operant conditioning and psychotherapy (Rogers, 1960; Sarason, 1958; Thaver & Oakes, 1967; Varble, 1968; Williams, 1964; Wilson, Hannon, & Evans, 1968). The most articulate writer in the area is Krasner (1962, 1965).

Krasner (1962) stated the following assumptions:

(a) Psychotherapy is a lawful, predictable, and directed process which can be investigated most parsimoniously within the framework of a reinforcement theory of learning. (b) The variables which affect the therapy process are the same as those in other interpersonal situations which involve the reinforcement, control, manipulation, influencing, or redirecting of human behavior [p. 61].

He pointed out the following deductions on the bases of these assumptions: (1) The therapist is a social "reinforcement machine" who has been trained to use his behavior as the decisive factor in aiding those who seek help. (2) The therapist utilizes a variety of reinforcement techniques to

influence the probability of behavior change in the patient.

(3) The therapeutic reinforcement process is most effective when appropriate interactions of therapist, situational, and patient variables are utilized. Krasner saw therapy not as a unique process but as a member of a class of other influencing processes such as "brainwashing," hypnosis, placebos, role-taking, sensory deprivation, attitude influence, verbal operant conditioning, and subliminal perception.

Historically, early papers (Dollard & Miller, 1950; Mowrer, 1953; Schaffer & Lazarus, 1952; Shaw, 1948; Shoben, 1949) placed psychotherapy within the framework of one learning theory or another. These early approaches mainly reinterpreted therapy and suggested few new research techniques. More recent endeavors actually utilize principles of some learning theory to effect therapeutic behavior change (e.g., Goldiamond, 1965; Wolpe, 1958). This approach views the therapist as one who controls and manipulates the therapeutic process by the judicious use of learning techniques. It is clear that this is a basic assumption in verbal operant conditioning studies. In fact, this same shift from theoretical reinterpretation to actual utilization is found in the work of Krasner (1965) who stated, "Our position is that verbal conditioning has progressed from a research technique to a type of treatment [p. 213]."

But why reinterpret and innovate? Varble (1968) answered quite well: "if the process of psychotherapy could be under-

stood and explained with some rather basic learning theory principles, this would be more parsimonious than the explanations from many theoretical schools of psychotherapy [ p. 237]."

The basic learning theory principle involved in verbal conditioning is, of course, the operant concept of reinforcement.

### Critique II: Is This Therapy?

As might be expected, some authors (Luborsky & Strupp, 1962; Murray, 1964, 1968) have criticized the utility of verbal operant conditioning as an explanatory concept in the understanding of psychotherapy. The basic arguments (Luborsky & Strupp, 1962) are:

(1) The role expectancies in operant conditioning and in psychotherapy are quite different. Patients in psychotherapy are ordinarily voluntary participants who want to change in certain areas. Subjects in operant conditioning experiments do not experience themselves as being in a helping relationship; they participate for a variety of (often unrelated and unclarified) reasons. (2) The change that can be effected through operant conditioning may not be very deep, lasting or extensive. (3) The extent of the emotional involvement in operant conditioning experiments is considerably less than in psychotherapy. (4) Change in psychotherapy is mediated quite differently. (5) Individuals who do change via operant conditioning experiments are those who want to please. This is not necessarily true in psychotherapy. (6) The definition of reinforcement is too general in the operant conditioning experiments. It is unclear what is being reinforced. (7) The nature of that which is being influenced in psychotherapy is much more complex than that which is influenced in operant conditioning; for example, in operant conditioning it is "plural nouns" or some such specific response [pp. 312-212]."

Krasner (1965) has rebutted these criticisms. The first he asserted is not justified on the basis of the whole of the evidence he cited in the review. Also, role expectancies can be manipulated (Ekman, Krasner, & Ullmann, 1963). Secondly,

Ullman and Krasner (1965) illustrated repeatedly the durability of changes brought about by conditioning. The third criticism, as the fourth and fifth, Krasner deemed irrelevant. He also asserted that the "desire to please" is present in both circumstances. The sixth criticism is certainly not true of the vast majority of conditioning studies. It is a strength of the operant conditioning model that the critical responses can be defined. Finally, the verbal operant model is, of course, a simpler way of viewing therapy than the traditional theories. Simplicity in itself is not necessarily to be avoided. An explanatory concept is judged by its utility, not its complexity. Murray (1968), another critic of the adequacy of the concept of verbal reinforcement in explaining the complex process of psychotherapy, has taken a stance directly opposite to that of Luborsky and Strupp (1962). That is, Murray argued that verbal reinforcement is too complex a phenomenon to explain therapeutic changes.

It is helpful to regard operant conditioning as a model rather than a theory of psychotherapy. Boring (1957) described the differences between theory and model in the following way:

The theory claims to be true, even though we all know that assurance about the validity of these claims varies from time to time for the same theory. The theory is an as, whereas the model is an as-if. The theory is an indicative; the model, subjective. The model is a pattern to be abandoned easily at the demand of progress [p. 191].

Within this framework, the researcher need not feel compelled to assert that he has exhausted the totality of the

therapeutic process with his operant model. Likewise, the practitioner need not feel compelled to discredit the model because it does not cover all the facts.

Thought upon in this way, the value of the verbal operant model is determined not, for example, by its complexity or by its somewhat shocking resemblance to the operant model applied to the behavior of infrahumans. It is determined by its power of predicting and parsimoniously explaining observable data.

#### Generalization Effects

It could safely be asserted that the operant model has successfully demonstrated the effects of social reinforcement on the emission of a variety of verbal behaviors (Greenspoon, 1962; Kanfer, 1968; Kessel & Barber, 1968; Krasner, 1958; 1962, 1965; Salzinger, 1959; Williams, 1964). These effects may be considered therapeutic in their own right (Krasner, 1965) or indicative of a similar process which takes place during therapy, yet does not necessarily define therapy (Murray, 1964, 1968).

However, the verbal operant model must be pushed harder. A significant aspect of psychotherapy is the goal of influencing behavior outside of the therapeutic context. Likewise, a test of the verbal operant model demands that it demonstrate changes in responses other than those directly reinforced. This is the problem of response generalization.

Explorers of generalization effects of verbal operant

conditioning have employed a variety of conditioning procedures and generalization tasks. These studies will be grouped in the following review according to the type of generalization measure. One approach has been to condition a certain type of response on a self-report test. The measure of generalization is performance on a similar type of test. For example, Coona and McEachern (1967) administered form A of a test of self and other acceptance to 400 RCAF personnel and selected the 60 lowest scorers on self-acceptance. These 60 Ss were divided into experimental (E) and control (C) groups. The Ss in the E group were later readministered form A in the presence of E who verbally reinforced self-accepting responses. The C group received no reinforcement. Then both groups responded to 50 items from forms A and B. The E group showed, as predicted, more self-acceptance than the C group on this last measure. Similar positive results have been found by Singer (1961) who demonstrated generalization from the California and Cristie F scales to the E scale. Wimsatt and Vestre (1963), however, found no generalization from the MMPI S1 scale to the S scale on the Guilford-Zimmerman.

A related approach has been to utilize a relatively free operant task and reinforce a particular type of response. Non-reinforced responses on a self-report test are then used as the measure of generalization. Ullmann, Krasner, and Sherman (1963) administered 35 MMPI items which they found predictive of

emission of pleasant emotional words in an earlier study to 80 psychotic and neurotic patients. Ss were then given TAT-like instructions to make up stories to emotionally bland pictures. Five cards with two minutes each were used to obtain operant levels. This was followed by another five card trial. During this period E's behavior differed for each of the following four conditions: Group I, no reinforcement; Group II, reinforcement for all emotional words (EW); Group III, reinforcement for pleasant words only (P); Group IV, reinforcement for unpleasant words only (U). All Ss then took 34 additional MMPI items parallel to the first set of 35 items. Group I decreased in emission of EW, P, and U. Group II increased in emission of EW, P, and U. Group III increased EW and P and decreased U. Group IV, unlike the other three groups, did not perform according to hypothesis; it increased in EW and P but decreased in U. What is most relevant here is that all four groups increased in MMPI score (favorable direction) and that this positive change was marked for the reinforced groups. These results indicate that generalization had occurred. However, the study would have benefitted from a second control group which received random reinforcement. This would have further clarified the question of whether the increase in the operants and the positive generalization effects were due to either (1) the specific strengthening effects of reinforcement on the habit of emitting the operants or (2)



nonspecific effects, such as lowering of anxiety and inhibition, which made it possible to respond emotionally. Changes in the predicted directions in a similar study were found by Harmatz (1967). The predictions were not confirmed in studies by Koenig (1963); Neuringer, Myers, and Nordmark (1966); and Rogers (1960). Incidentally, Neuringer et al. (1966) did employ a control group which received random reinforcement.

Other researchers have employed performance on projective-like instruments as measures of generalization. For example, Thaver and Oakes (1967) in an adaptation of Taffel's (1955) procedure has Ss make up sentences using either a hostile or a neutral verb, both of which were printed on cards. Half of the Ss were reinforced for the choice of the neutral verb, half for the hostile verb. Intertrial activity was also varied, but this aspect of the study is not relevant here. All Ss then were required to write out their responses to pictures 3 and 5 of the TAT. A list was made of all verbs used in the TAT stories. These verbs were then rated on a neutrality-hostility continuum. Generalization effects were evidenced by a significantly greater sum of the hostility scores on the two stories for the group reinforced for hostile sentences than for the group reinforced for neutral sentences. Generalization was unrelated to awareness of the response-reinforcement contingency in the operant conditioning task and to awareness of a relationship between the operant conditioning task and the generalization task. The

following studies also successfully demonstrated positive generalization effects with projective-like measures: Deering (1958), Drennen (1963), Greenspoon and Thompson (1959), Lanyon (1967), Ryan and Krumboltz (1964), Simkins (1961), Timmons (1959), and Tobias (1960). A few researchers have reported negative results under these conditions (Rosenberg, 1961; Ullmann, Krasner, & Edinger, 1964).

Greenspoon (1962) stated that similarity between the conditioning and generalization tasks was the critical variable in explaining generalization effects. Stollak (1963) in a theoretical paper made the point that "similarity" does not precisely describe the basis for generalization effects in verbal operant conditioning studies. He referred to Staats's (1961) (see above) theory that "response meanings" are strengthened in verbal operant conditioning. Therefore, the transfer situation must be one which can elicit "meaning response components" previously strengthened by verbal reinforcement. Stollak contended that since ambiguous, unstructured generalization tasks (e.g., telling a story) allow the strengthened meaning response components to become manifest, they are more sensitive to generalization effects than clear, structured tasks (e.g., a self-report inventory). He cited the positive findings of Timmons (1959) who used free drawing as the generalization task and the negative findings of Rogers (1960) who used self-report techniques as evidence in support of his

theory. The preponderance of positive findings with projective-like techniques and the equivocal findings with self-report inventories in the present, more complete review above tend to confirm Stollak's conjectures. However, it is not the ambiguity and lack of structure per se of the projective-like tasks, but rather the opportunity for responding in a multitude of ways which makes the projective-like tasks, as opposed to self-report techniques, more sensitive to generalization effects. In other words, a well designed generalization measure, whether projective or objective, which permits a variety of responses will be more sensitive than one which permits only a few possible responses. This contention is based on the lack of clear parameters of response classes which were reinforced in the first place. It would follow from this reasoning that if one were able to employ a relatively free operant conditioning paradigm with a relatively wide response class, then, in order to obtain generalization effects, one should employ a generalization measure which permitted a variety of responses.

Another group of studies utilized generalization measures which cannot readily be thought of as personality tests. The study of Ullman, Weiss, and Krasner (1963) is both representative of this group and of special interest since its methodology is very similar to that employed in the present study. Ss were 64 hospitalized male psychiatric patients. For both groups, verbal conditioning consisted of telling stories to emotionally bland

pictures under TAT instructions. Four three-minute, nonreinforced stories, used to establish operant level, were followed by three three-minute stories during which emotional words, as defined by Ullmann and McFarland (1957), were reinforced. The generalization measure was a perceptual defense task which was adapted from Shannon (1955). This consisted of 10 pairs of words, one threatening and one neutral, matched for first letter, number of letters, and word frequency. Right or left hand position of the threatening word was varied randomly on successively clearer carbon copies. The perceptual defense score was the sum of the differences in carbon copy number on which the threatening and nonthreatening word of each pair was first correctly identified. Half of the Ss received the perceptual defense measure after verbal conditioning; the other half, before verbal conditioning. As predicted, the group of Ss who received verbal conditioning prior to the perceptual measure had lower perceptual defense scores than the group who underwent these treatments in reversed order. The results of this study are difficult to interpret. This difficulty stems from the lack of an additional control group which received random reinforcement. Again it must be asked, are the results due to the specific effects of conditioning or are they due to more generalized effects, such as anxiety reduction, which would occur during any prior interaction with E? This is a criticism which would apply to the majority of studies of the conditioning and generalization of verbal behavior. Another

finding was that the two groups did not differ in the frequency of emission of emotional words during reinforced trials as compared to operant trials. Apparently then, the generalization effects occur in one direction only. Finally, it is surprising that no attempt was made to assess the effects of awareness of the reinforcement contingency on conditioning or of the relationship between the conditioning and generalization procedures on perceptual defense.

Another example of a study which employed a specialized laboratory task as a measure of generalization is found in Weide (1959). He had Ss construct sentences and reinforced the selection of either malevolent, benevolent, or neutral verbs. The generalization task consisted of matching nouns and adjectives which were also classified as malevolent, benevolent, or neutral to objects. Ss previously reinforced for malevolent verbs chose significantly more malevolent nouns and adjectives in the matching task. The following studies also reported positive generalization effects using some specialized procedure: Carpenter (1959); Eriksen, Kuethe, and Sullivan (1958); Giddan and Eriksen (1959); Insko (1965); Kanfer and Pomeranz (1965); Krasner, Knowles, and Ullmann (1964); Krasner, Ullmann, and Fisher (1964); Lovaas (1961). Oakes, Droge, and August (1961); Sarason (1956); Scott (1958); Tobias (1960); Ullmann, Krasner, and Sherman (1963).

Generalization across experimenters has been investigated.

Greenspoon and Ward (1960) conditioned a verbal response with one E and put their Ss through extinction in another room with another E. No differences in resistance to extinction, which was the measure of generalization, were observed among groups regardless of the change of rooms and/or E. Similar results were found by Moos (1963); Timmons, Noblin, Adams, and Butler (1961); Tobias (1960). Kinzie and Sipprelle (1967) conditioned Ss for self-references either individually or in a group and demonstrated generalization from the individual to the group and vice versa.

A final group of researchers has attempted to demonstrate generalization effects which are clearly relevant to psychotherapy. Ullmann, Krasner, and Collins (1961) individually conditioned psychiatric patients for the emission of emotional words in a story-telling situation. Ratings made by group therapists before and after the conditioning procedure indicated a significant gain in "adequacy of interpersonal relationships" in group therapy. Krumboltz and Thoresen (1964) reinforced verbal information-seeking behavior in a counseling situation. Later, Ss engaged in more overt information-seeking behavior, such as writing to colleges. Wimsatt and Vestre (1963) reinforced psychiatric patients for responding to the MMPI S1 scale in the scored direction and found no changes in "withdrawal symptoms" as rated on a correlated behavior scale.

In summary, different types of measures have been employed

in studies of the generalization of operantly conditioned verbal behavior: self-report tests of personality and attitude, projective and projective-like tests, specialized laboratory tasks, and nonlaboratory behavior which E has attempted to therapeutically change. The successful demonstration of generalization is most likely when many responses to the generalization stimuli are possible for S. It is in the attempt to account for this finding that one of the few theoretical integrations in the area of verbal operant conditioning has been undertaken. A criticism which is applicable to most of these studies is that they fail to provide a proper control group. That is, the usual procedure is to compare the behavior of two basic groups on a generalization measure: one group which received reinforcement and one which received no reinforcement. In this procedure the interpretation of differences between the two groups on the generalization measure is not clear. Are observed differences due to specific effects or nonspecific effects (such as general anxiety reduction) of reinforcement? What is needed is a control group which received random reinforcement.

#### The Need for Social Approval, Conditioning, and Defensiveness

The next segment of the review deals with the personality variable, the need for social approval, as measured by the Marlowe-Crowne Social Desirability Scale (MC SDS) (Crowne & Marlowe, 1960). The MC SDS is a 33-item self-report question-

naire (see Appendix A for copy). Crowne and Marlowe (1964) stated that a high score on the scale indicates "a generalized expectancy that approval satisfactions are attained by engaging in behaviors which are culturally sanctioned and approved [p. 277]."

Crowne and Marlowe (1964) described the development of the scale in which a major objective was the elimination of items with psychopathological content. To this end, ten judges scored 50 items for their social desirability. The 47 items which survived this initial scaling and the Edwards SD items were submitted to an additional judge for ratings of degree of maladjustment indicated by endorsement of the items. The Edwards SD items were rated as significantly more pathological than the preliminary MC SDS items. The 33 items which make up the final scale are those which significantly discriminated between high and low scorers in a sample of 76 students. The authors reported the internal consistency coefficient and the test-retest correlation to be .88. In contrast to the Edwards SD scale, the MC SDS was found to have generally low insignificant correlations with MMPI clinical scales. It should be noted that other researchers (Katkin, 1964; Stones, 1965) have suggested on the bases of cross-validations that the MC SDS is not as completely independent from pathology as the originators initially claimed. Crowne and Marlowe (1964) reviewed a series of studies, carried out largely by them and



their students, in the areas of compliance, influencibility, conformity, and defensiveness and vulnerable self-esteem to demonstrate the validity of the scale.

The hypothesis that since high scorere on the MC SDS may be thought of as more sensitive and responsive to social reinforcers, they should verbally condition more readily than low scorers has been investigated. Crowne and Strickland (1961) first found positive results with a Greenspoon-type task. Marlowe (1962) extended this finding to a quasi-clinical interview. Strickland (1962) reported a positive relationship in the conditioning of word associations. Epstein (1964) adapted the MC SDS for use with children and again found that approval motivated Ss verbally conditioned more effectively than relatively nonapproval motivated Ss. Marlowe, Beecher, and Dobb (1964) had their Ss merely observe feigned "conditioning" of a stooge in a Taffel-type task. A correlation of .45 ( $p < .05$ ) was found between MC SDS score and later emission of "reinforced" responses. Negative results were the case in four studies: Craddick and Campitell (1964) who used a Greenspoon-type task and Katkin, Risk, and Spielberger (1966); Manson and Greenbaum (1963); and Spielberger, Berger, and Howard (1963) who all used a Taffel-type task.

Verbal conditioning is very sensitive to both overt and subtle variables arising out of the E-S interaction (physical characteristics of both, interpersonal attraction, E's status,

etc.) as pointed out in the review by Kessel and Barber (1968). Since variables of this nature were unsystematically varied across these studies which have attempted to relate the need for social approval to verbal conditioning, it is very likely that they accounted for a good proportion of the discrepancies. Consequently, the present author<sup>1</sup> investigated the relationship between conditionability and MC SDS score with himself as the agent of reinforcement. The Ss in this pilot study were 30 hospitalized psychiatric patients. The standard Taffel-type conditioning paradigm was employed. When the distribution of the MC SDS was dichotomized at the mean (16.9), it appeared that the high need Ss (N=16) initially gave more critical responses during the operant (nonreinforced) period and showed a steady increase during the experimental period (reinforced). By contrast, the low need group (N=14) initially gave fewer critical responses and showed an irregular acquisition pattern. Several statistical approaches were employed to assess the degree and significance of the relationship. Most encouraging results were obtained when the top 30% (N=9) of the MC SDS distribution was compared with the bottom 30%. The chi-square for these high versus low scorers and a condition-no condition

<sup>1</sup>Unpublished study entitled "The relationship between the Marlowe-Crowne Social Desirability Scale and verbal conditioning in a psychiatric population," 1968.

dichotomy yielded a probability value ( $.05 < p < .10$ ) quite close to conventionally acceptable levels of significance. The results of this study suggested that E was differentially perceived by the Ss as an influential source of social approval according to their own motivational system.

Another basic hypothesis which has been supported in several kinds of studies is that high scorers on the MC SDS behave in a more defensive manner than low scorers. Tutko (1962) administered the MC SDS, Rorschach, TAT (abbreviated), and the Rotter Incomplete Sentences Blank to 60 borderline and psychotic patients under either stressful or supportive instructional sets. Four judges rated each projective protocol for revealingness, pathology, and defensiveness. The protocols of the high need for approval group as opposed to the lows were found to be generally less revealing and more defensive. The pathology index was found to be a function of a complex interaction between need for approval and instructional set. Similarly, Norman (1963) found the socially disapproved needs of sex and aggression to be significantly less prominent in projective stories of high need Ss, while the socially approved need of achievement was significantly more prominent. This picture of the high need for approval person as a defensive, constricted, and unrevealing individual has been further supported by studies of self-report test behavior (Fisher & Kramer, 1963; Lichtenstein & Bryan, 1965; Stollak, 1965). The basic hypothesis was further

supported by Strickland and Crowne (1963) who found that patients who were high on the MC SDS prematurely terminated psychotherapy more frequently than lows. The authors contended that this finding posed a problem for the verbal conditioning model of psychotherapy. That is, if therapy consists of verbal conditioning and if high need approval Ss verbally condition better than lows, then high need Ss should tend to remain in therapy until the proper ends have been achieved and not terminate early. However, the authors presented no evidence that their therapists either consciously or inadvertently conditioned with social approval.

In addition to these essentially correlational studies, there is some experimental evidence to support the hypothesis of heightened defensiveness in high need for approval S. Conn and Crowne (1964) utilized an adaptation of Schachter and Singer's (1962) procedure which first provoked Ss to anger and then provided an opportunity for them to define and display the un verbalized state in terms of a different emotional state, namely euphoria. The details of this complex experiment are too lengthy to describe here. The essential finding was that high need approval Ss emulated the model's euphoric behavior to a significantly greater extent than low need Ss.

Barthel and Crowne (1962) exposed high and low need for approval Ss (129 female college students) to a measure of perceptual defense. Ss were asked to identify in writing words

presented tachistoscopically. Six words were neutral and four were "taboo" (whore, penis, bitch, and screw). The perceptual defense score was the mean difference between the number of trials required for the recognition of the taboo words and the number necessary to recognize the neutral words. Ss were asked at the completion of the task to state their beliefs about the purposes of the experiment. Later, six judges were able to classify these beliefs for most Ss into either a "perceptual need" or a "social disapproval" category. It was found that high need for approval Ss were more defensive than lows. The greatest defensiveness was displayed by high need Ss who focused on the "social disapproval" aspects of the perceptual task.

In summary, there exists a body of correlational and experimental evidence which supports the validity of the MC SDS as a measure of the need for social approval. However, the early contention of the authors that it is a scale which is independent from psychopathology has not been verified in subsequent cross-validations. Since social approval is often used in studies of verbal operant conditioning, it has occurred to several investigators to test the hypothesis that high need for approval Ss should verbally condition more readily than lows when social approval is used as the reinforcement. Different types of verbal conditioning paradigms have been explored in several populations. The results of these studies have been inconsistent, with no pattern emerging among the discrepant results. It may

be that these divergent results are due to E-specific variables which have gone uncontrolled across the studies. The hypothesis that high need for approval Ss are more defensive than lows has been generally supported by many studies which have tested the hypothesis from different angles.

#### Alcoholism, MC SDS, and Verbal Conditioning

An alcoholic sample was employed in the present study. Unfortunately, little is known about the performance of this group on the MC SDS or a verbal conditioning task. To the knowledge of the present author, there are no data at all on the performance on the MC SDS by an alcoholic sample. Crowne and Marlowe (1964) presented norms for both normal and abnormal groups, none of which were alcoholic. Inspection of the tables (pp. 211-212) suggests a rise in both the mean and standard deviation as pathology becomes more blatant. This trend is consistent with other findings (Katkin, 1964; Stones, 1965) of a positive relationship between the MC SDS and various clinical scales of the MMPI. It would then be expected that the alcoholic population would display a mean higher than that of normals. Another line of thinking would also suggest this expectation. It is based on the study of other personality characteristics of the alcoholic. Vanderpool (1966) reviewed an extensive bibliography of theoretical and empirical studies of the personality makeup of the alcoholic and concluded that "the overwhelming majority of investigators do not believe that a specific

alcoholic personality exists . . . [p. 34]." This conclusion is consistent with other recent reviewers (e.g., Catanzaro, 1967; Plaut, 1967). Vanderpool (1966) also documented the assertion that "many writers consider that immaturity and dependency are important characteristics of the alcoholic personality . . . [p. 35]." Thus, although there does not appear to be an entire personality pattern shared by all alcoholics, immaturity and dependency seem to be common characteristics of the personality of many alcoholics. Blane (1968) noted that this dependency is manifested in many ways. Fenichel (1945) described the alcoholic thus, "They are dependent on being loved or approved, on being accorded affection and prestige [p. 368-369]." Marlowe and Crowne (1964) in summarizing the empirical studies on need for approval and integrating these within a broader theoretical framework, stated that from the behavior of the high scorer on the MC SDS "we may infer a closely woven motivational structure centering around dependence on the favorable approval of others. . . [p. 195]." These descriptions of the alcoholic and the high scorer on the MC SDS are quite similar. Consequently, one would expect a higher mean score on the MC SDS based on an alcoholic sample than that based on a normal sample.

There are some data on the verbal conditionability of alcoholics. Vogel-Sprott (1964) reported on the verbal conditioning and generalization effects in three groups: alcoholism, delinquents, and students. Each sample was divided so that one

section was reinforced for overestimates of the diameter of a circle and the remaining section was reinforced for underestimates. In each sample, the verbal estimates increased in the sections reinforced for overestimates and decreased in the sections reinforced for underestimates. Response generalization was confirmed when the size of free drawings tended to shift in the same direction as the verbal estimates. No differences in conditionability or generalization were found among the alcoholic, delinquent, or student samples. Apparently, alcoholics verbally condition in much the same manner as other clinical and normal groups. Smart (1966) compared the conditioning of alcoholics under conditions of verbal reward and punishment. A modified Taffel-type procedure was employed. It was found that conditioning occurred with verbal reward but not with verbal punishment. The degree of acquisition was very similar to that found by Cohen and Cohen with neurotics and by Cohen, Kalish, Thurston, and Cohen with general medical patients (Smart, 1966). The results of Vogel-Sprott (1964) and Smart (1966) do not suggest peculiarities when using alcoholics in studies of verbal conditioning.



### Chapter III

#### DESIGN OF THE STUDY

##### Subjects

The Ss were male inpatients at Chicago's Alcoholic Treatment Center during the period from January 28, 1969, to April 26, 1969. The suitability of an applicant for admission into the Center is determined by the evaluations of a psychiatric social worker and a physician, who interview the applicant separately and later confer. Grounds for nonadmission include severe psychological and/or physical impairment. This initial evaluation process tends to screen out psychotic and brain damaged applicants from the Center.

A total of 176 Ss participated in the study, 72 of these completed all three main phases (MC SDS, verbal conditioning, PDT) of the experiment. These 72 Ss had a mean age of 40.2 years ( $SD=8.6$ ). The mean number of years of education was 11.9 ( $SD=2.4$ ). Fifty two Ss were Caucasian; 20 were Negro.

##### Administration of the MC SDS

On seven dates between January 28, 1969, and April 24, 1969, the MC SDS was group administered to current patients. The introduction and specific instructions utilized may be found in Appendix B. Ss who took part in the first session were requested to participate by the patient government leaders on the day of

the testing. For the remaining six sessions, Ss were delivered appointment cards by the duty nurses in advance of the day of testing.

For each testing session all patients on the two wards of the Center who had not previously completed the MC SDS were requested to do so. The mean number of days between admission into the Center and completion of the MC SDS for the 72 Ss was 9.7 (SD=6.6).

#### Selection of Subjects for Conditioning and Generalization

Of the 176 Ss who took the MC SDS, 23 were eliminated for one or more of the following reasons: illiteracy, age (60 or older), and unsuitability for further study due to uncooperativeness, obvious incapacitating psychopathology, or psychiatric diagnosis of CNS pathology. Ss were eliminated for reasons of illiteracy on two occasions. The first was at the time the MC SDS was administered. That is, some Ss informed E that they could not read at all or that they were having difficulty reading the MC SDS. The second was at the beginning of the conditioning and generalization session, where Ss were seen individually. Here, Ss were administered a screening test for literacy and vision which consisted of the sentence, "Now is the time for all good men to come to the aid of their country," which was typed on a 5" by 8" card. A further indication of the literacy of the Ss who took part in the conditioning and generalization phase of the study is given by the fact that only two of

these Ss failed to complete at least eight years of education. One had seven; the other, five. Uncooperativeness was evidenced by the verbalized refusal to participate in the study. E's judgment was used to determine a state of psychopathology which made Ss unsuitable for further testing. For example, two such Ss displayed a state marked by confusion and high anxiety. Another S burst into tears during administration of a test. Before each S was scheduled for the conditioning and generalization session, the file of psychiatric evaluations of current patients was examined. If a potential S was diagnosed as having an acute or chronic brain disorder, he was eliminated from further study. These diagnoses were made by physicians who were certified by the American Board of Psychiatry and Neurology.

The remaining 153 Ss comprised the pool out of which 72 were selected by the author on the basis of MC SDS score to participate in the conditioning and generalization phases of the study. None of the Ss in this pool were inpatients during the entire course of the experiment. As noted above, seven testing dates during a three month period were used. Since the pool of 153 S was not constantly available, the selection of the 72 was done in stages in the following manner. After the first administration of the MC SDS, the distribution was divided into thirds, that is, into categories of high, medium, and low scores. Ss at various points in the distribution were then selected for participation in the individual session where they underwent

conditioning and generalization. The MC SDS scores obtained in the second group administration were then included in the first distribution which was again divided into thirds. Again Ss at various points along the distribution were selected for the individual session. This process was repeated after each group administration of the MC SDS. As might be expected, the critical scores which divided the distribution into thirds varied slightly when the scores obtained from the most recent group administration were added to it. It was necessary to complete the running of the entire experimental group of 24 Ss before the second control group. This was necessary in order that the second control group received approximately the same number of reinforcements as the experimental group (see Conditioning and Generalization Procedures below). Once the experimental group was complete, the critical scores which divided it into high, medium, and low need were used as the parameters for the entire distribution. This "freezing" of the critical scores before the entire distribution was completed resulted in slight differences in the relative proportions of high, medium, and low scorers in the pool of 153 Ss and the 72 Ss chosen for the individual session. That is, 24 of the 72 Ss had scores below 13 (low need for approval), 24 had scores between and including 20 and 13 (medium need), and 24 had scores above 20 (high need). In the pool of 153 Ss, there were 44 scores below 13; 58 between 20 and 13; and 51 above 20.

The 72 Ss who participated in the conditioning and generalization phases were notified by appointment card delivered by the duty nurses. This method of notification was used in order to avoid E-S interaction beyond that involved in the group administration of the MC SDS. E-S interaction prior to verbal conditioning is known to have effects on conditioning (Kessel & Barber, 1968).

Some Ss failed to keep their first appointment. These Ss were either not rescheduled or rescheduled only once more. Ss were not rescheduled if the projected date of discharge (as posted in the Alcoholic Treatment Center) came before they could be rescheduled or if their own schedules of activities (e.g., passes, ward programs) prohibited participation. No pressure was put on Ss to cooperate in order to avoid contamination of the conditioning data. That is, if Ss who failed to keep appointments were coerced into participation, an uncontrolled factor would have been operating. The effects of forced participation in verbal operant conditioning studies are unknown. However, indirect evidence would suggest that Ss who are forced to participate would be less conditionable than those who volunteer (Kessel & Barber, 1968).

The mean number of days between admission into the Center and the individual conditioning and generalization session was 21.5 (SD = 11.4). The mean number of days between the group administration of the MC SDS and the individual session was

11.8 (SD=9.4).

### Apparatus

The stimuli for the conditioning procedure were eight TAT cards. These were selected on the basis of the intensity of emotional tone as scaled by Eron, Terry, and Calahan (1950). They are in decreasing order of emotional intensity, the following 3BM, 13MF, 15, 6BM, 18BM, 20, 4, and 12M. Cards 3BM and 13MF were always presented first in order to insure that members of the reinforced response class emotional words were elicited early in conditioning. The remaining six cards were administered in random sequence in order to avoid position effects. The randomization of these six cards was achieved with the aid of a table of random numbers (Edwards, 1954) in advance of the commencement of the study. The six cards were so arranged that each appeared an equal number of times (12) in each of the six variable positions. Responses to the cards were tape-recorded.

The stimuli for the generalization procedure, the PDT, were 21 pairs of words. One member of each pair was neutral, the other could be described as taboo and/or conflict related. The 21 pairs of words were drawn from two sources. The first source was Shannon (1955) who devised a list of 15 conflict relevant and 15 neutral words in the following manner. The 15 conflict words consisted of three sets of five words each, relating to one of three conflict areas: sex, aggression, and dependency. These conflict words were selected on the basis of ratings by ten

clinical psychologists and only words which at least eight out of ten raters agreed were the most conflict relevant words were used. The 15 neutral words were selected from the Thorndike-Lorge (1944) tables as having the same frequency of usage as the conflict words. In addition, only those neutral words which contained the same number of letters and resembled the conflict words in configuration were selected. Conflict words which were not listed in the tables were assigned the lowest frequency listed. The 15 pairs of words are: blood-board, smash-snort, stab-stew, strangle-straggle, shoot-sheep, penis-pence, whore-whelp, cock-coot, cunt-curd, erection-eyesight, motherly-molecule, begging-breathe, clinging-clusters, helpless-highways, nursing-nesting. Ullman et al. (1963) in their study which purportedly demonstrated decreased perceptual defensiveness as a result of verbal conditioning used only the first ten of the above listed pairs of words. That is, they omitted the dependency words.

The second source for PDT items was Barthel and Crowne (1962) who demonstrated that high scorers on the MC SDS have a greater difference in the recognition thresholds of socially unacceptable versus neutral words than low scorers. In a pilot study (see Crowne & Marlowe, 1964, for details) they employed 8 taboo words. Two of these 8 are on Shannon's list (whore and penis). The remaining 6 were also employed in the present study. However, since the authors did not use the same criteria as Shannon (1955)

in selecting the neutral member for each pair, their neutral words were not used in the present study. New neutral members of each pair were selected according to Shannon's criteria. These six additional taboo words and their corresponding neutral mates are bitch-batch, screw-scrub, Kotex-Kodak, raped-relay, urine-urban, and breast-basket.

It appears that the main difference between the rationales for the Shannon and the Barthel and Crowne lists is in the conception of the source of threat. Shannon seemed to have conceived of the disruption of perception and/or reporting of the threatening words as due to the inner dynamics of S. In contrast, Barthel and Crowne were quite clear that they felt the disruption is due to the interpersonal dynamics of the testing situation. This difference in emphasis is reflected in the choice of threatening words. Since both lists were used in the present study, both sources of threat were present.

Each of the 21 pairs of words were typed on unlined white cards at five levels of clarity. The fifth level of clarity was obtained by directly typing (on a Smith-Corona Model 6SV with the "copy set" wheel in the fifth position) the 21 pairs onto the cards. The fourth level was obtained by typing the 21 pairs onto a carbon copy. The third level was obtained by typing the 21 pairs onto a second carbon copy. The second and first levels were obtained in a similar fashion. Thus, the PDT consisted of 105 cards (5 levels, 21 cards at each level). Right and left



hand position of the threatening word of each pair was randomly varied via a table of random numbers (Edwards, 1954). So, for any two levels for a given pair of words the position of the threatening word might or might not be identical. The threatening words appeared in the right position 53 times and 52 times in the left position. The sequence of the 21 pairs of words within a given level was randomly constructed with the aid of a table of random numbers (Edwards, 1954). This random sequence was not varied from S to S after it was initially determined. The PDT cards were presented for a duration of one second on a portable tachistoscope (LaFayette Model 2500). A practice pair, one-two, preceded the series and was presented at the fifth level of clarity. The PDT was scored for each S in the following manner. The trials at which each conflict word was first correctly identified were summed, likewise for the neutral word. If a given word was not correctly identified by the fifth trial, it was assigned a score of six. The difference between the two sums was computed for each S.

The assignment of a score of six to words which were never correctly identified is somewhat problematical. The statistical techniques employed in this study require at least interval scaling of the variables. This requirement seems to be met for the first five scale positions. However, it would be difficult to defend the proposition that the requirement is met for this sixth position. The justification for this procedure is twofold.

First, only some words were assigned a score of six. So, if the interval scaling assumption was violated, it was violated not in every case. Further, none of the words for many individual Ss was assigned a score of six. Second, the assignment of a score of six to these words did not increase the probability of finding support of the hypotheses.

### Conditioning and Generalization Procedures

The individual sessions, when conditioning and generalization procedure occurred, took place in testing booths. The booths contained a desk which was placed perpendicularly to the longer wall, and two chairs. S was seated opposite from E across the desk. The tape recorder was in the desk drawer. All of the following items were on top of the desk in full view of the Ss: stopwatch, microphone, tachistoscope, the PDT and TAT cards arranged in proper order face down, a clipboard holding blank protocols, a pen, an ashtray, and a stack of note cards containing instructions to S. On all occasions, E wore either a business suit or sport coat with tie. S was referred to as Mr. (last name).

Upon reporting to the testing booth, all Ss were given the following instructions which E had memorized:

Good (morning, afternoon, evening). You are Mr. \_\_\_\_\_? Please sit down. As you may have already guessed, I have asked you here to complete the second part of the research project which you began several days ago.

First of all, (if no glasses) do you see things well at reading distance with no glasses? (if glasses) do you see things well at reading distance with those glasses? (Show S visual-literacy

screening card.) Can you make that out? Good.

How old are you?

How many years of formal schooling do you have?

This next part of the project deals with how people use their imagination in making up stories. I have several cards here and I'm going to show them to you one at a time. On each card there is a picture. Your job is to make up a story about each picture. The stories that you make up should have three parts in them. The first part is what happened in the past or what led up to the scene on the card. The second part is what is going on now or what the characters are thinking and feeling. The third part is how it all turns out or how it all ends. In other words, your job is to make up a short story for each picture with a past, a present, and a future. Now as to how long you should spend on each card. Once you begin your story you have three minutes to finish it. This is usually enough time for most people to tell their stories. If you should not finish your story at the end of three minutes, we will go on to the next card anyhow. If you should finish your story before the three minutes are up, we'll wait until the three minutes are up before we go on to the next card. Do you have any questions? To save me from writing down what you say I'll have this tape recorder running. Here is the first card.

The administration of reinforcement by E varied according to which group S belonged. Each group contained 24 Ss: eight high need for approval, eight medium, and eight low. In the experimental group (E), E verbally reinforced the emission of emotional words on a continuous schedule. Reinforcement consisted of E's utterance of "good," "fine," "all right," or "mm-hmm" and his slight head-nod and/or smile. This somewhat loose definition of social reinforcement was employed so as to make use of E's "own natural reinforcement qualities" (Krasner, 1965). The critical response class was "emotional words," as defined by Ullmann and McFarland (1957). (See Appendix C for scoring guidelines and examples.) Control group one (C1)

received no reinforcement during the telling of the stories. Control group two (C2) received random reinforcement on a fixed interval schedule. The interval was 12 seconds. That is, during the first 12 seconds of each story, S was reinforced for the first word uttered whether emotional or not. During the period from second 13 to second 24, S was reinforced for the first word uttered and so on to the period second 168 to second 180. If S did not speak during an interval, no reinforcement was given. The length of the interval was determined in the following manner. All Ss in E were run before any Ss in C2 were run. The purpose of this delay was to provide data to equate as nearly as possible the total number of reinforcements given in each group. There were a total of 192 TAT stories told by the Ss in E (8 stories/S x 24 Ss = 192 stories). Tabulation of the data showed that 2849 reinforcements were given during these 192 stories or 14.83 reinforcements/story. Each story lasted 180 seconds. Dividing 14.83 reinforcements into 180 seconds yielded on a ratio of one reinforcement every 12.13 seconds, which was rounded off to 12 seconds.

Ss were limited to three minutes per story. Those Ss who finished responding before the three minutes were up were required to keep the card face up and were not allowed to go on to the next card. E's comments, other than reinforcement, during S's telling of the stories were generalized requests for past, present, or future if these were not included in the story

and notification of the time remaining for a given card.

After Ss finished the eight TAT cards, they were administered the PDT with the following instructions:

Now we'll need to use this machine.

Into my end of the machine I'm going to put some cards one at a time. On each card there are two words. When you press down on this switch, a light inside the machine goes on for just one second. When this light is on you should be able to read the words on the card through this window.

Let's use this card for practice. When I say "press," you press down on the switch. Are you ready? Press.

(If S identifies the stimuli) Good. You have the idea.

(If S does not identify the stimuli) Let's try that again. Are you ready? Press.

(Repeat until S correctly identifies the stimuli.)

The card you just saw had the words printed quite clearly. But these next cards don't have the words printed so clearly. In fact, you may not get any of them until they become quite a bit more clear.

Even if you're not sure what the words are, it's OK to guess.

Further, it doesn't matter if you see only one of the two words. That is, if you think you know one of the words is but don't know the other, it's OK to say the one you think you know.

Do you have any questions?

Remember don't press the switch until I say "press."

Ss were shown the first trial of 21 pairs of words on the tachistoscope. If both members of a pair were correctly identified, that pair was eliminated from subsequent trials and so on through the five trials. Ss were not informed about the accuracy of their responses.

Following the PDT, Ss were intensively interviewed for awareness according to a schedule adapted from Levin (1961).

The complete schedule is contained in Appendix D. The main goals of this schedule were to determine if Ss were aware of the reinforcement, if a connection was made between the reinforcement and their behavior during the stories, if Ss responded affectively to the reinforcement, and if any connection was made between the awareness of the reinforcement contingency and behavior on the PDT.

After the interview for awareness, Ss were asked the following three questions: (1) "What was the purpose of showing you the words in the machine?" (2) "Did you feel that the type of words that were used had anything to do with it?" (3) "Did you react differently to some words as compared to others?" These were adapted from Barthel and Crowne (1962). The goal was to determine if S saw either perceptual keenness or the social disapproval associated with reporting the conflict words as the focus of the experiment.

Next, Ss were "debriefed" according to the following schedule:

Did you know anything about this experiment before you came in here today?

As you can see for yourself, it's important that the fellows who come in here really don't know exactly what's going to happen. I'm asking you then not to discuss the experiment with the other fellows or even with the staff for that matter.

Do you have any questions about the experiment?

(Ss were reassured that whatever they said would be used for research purposes only, that the results would have no bearing on their treatment or when they would be discharged, that all material would be treated confidentially.)

Two Ss were eliminated because they could not identify the practice words on the PDT. One S was eliminated because he became extremely upset during the TAT. These who were eliminated were replaced. No Ss reported prior detailed knowledge of the experiment.

## Chapter IV

## RESULTS

Distribution of MC SDS in an Alcoholic Sample

The mean of the MC SDS distribution for the total sample of 153 alcoholic Ss was 16.46 with a standard deviation of 7.03. Inspection of the norms presented by Crowne and Marlowe (1964, pp. 209-212) revealed that the mean and standard deviation for the alcoholic sample exceeded those for normal males in the eight samples listed and most clearly resembled those obtained by prisoners ( $\bar{X} = 16.73$ ,  $SD = 6.04$ ) and psychiatric inpatients ( $\bar{X} = 16.48$ ,  $SD = 6.65$ ).

Assignment of Subjects

In order to verify that there were no differences among the means of Ss for a given need level across the three treatment conditions, a three (high, medium, and low need) by three (E, C1, C2) analysis of variance of the MC SDS scores was performed (Du Bois, 1965). Table 1 summarizes the results of this test.

Table 1 shows, as expected, that the assignment of Ss into high (H), medium (M), and low (L) groups was meaningful. The lack of an interaction effect offered assurance of an equivalent division in each of the three treatment conditions.



Table 1  
 Analysis of Variance of MC SDS in Need  
 Levels and Treatment Conditions

Source	SS	df	MS	F
Need (N)	3204.528	2	1602.264	196.721**
Treatment (T)	0.778	2	0.389	0.048
N x T	10.222	4	2.556	0.314
Error	513.125	63	8.145	-

\*\*  $p < .01$

### Hypothesis I

Hypothesis I was that there would be a significant interaction between the score on the MC SDS and the treatment conditions on the PDT. Table 2 summarizes the results of the analysis of variance (Du Bois, 1965) of the PDT. The PDT for this analysis was scored by computing the difference between the sum of the trials on which the conflict words were first correctly identified and the sum of the trials on which the neutral words were first correctly identified and adding a constant of 30 to remove minus signs. This scoring procedure is essentially that of Shannon (1955) and Ullmann et al. (1963). There were, of course, three levels of need for approval and three treatment conditions.

Significance was not reached for the need or treatment main effects or the need X treatment interaction. This situation might be explained in three ways. The first is the obvious. Perceptual defensiveness is not a function of need for approval, prior verbal conditioning of emotional words, or a combination of these. The second is that these results reflect an artifact of PDT administration. That is, five levels of clarity were not enough to sensitively detect differences in the thresholds for neutral and conflict words for a given S. If this explanation is tentatively accepted, a different manner of computing the PDT score is suggested. That is, eliminate the subtraction of the sum of trials for the neutral words from the sum for the conflict

Table 2  
Analysis of Variance of PDT Scored by C - N + 30  
in Need Levels and Treatment Conditions

Source	SS	df	MS	F
Need (N)	5.861	2	2.931	0.051
Treatment (T)	42.361	2	21.181	0.366
N x T	235.306	4	58.826	1.017
Error	3645.125	63	57.859	-

words. This sum for the conflict words only would then be the index of defensiveness. This method of scoring the PDT would still be sensitive to inter-individual differences. This alternative method of scoring the PDT is also suggested by still a third interpretation of the negative results. It is based on a study by Seitz (1968) which demonstrated that neutral words that immediately follow subliminally presented taboo words were identified less frequently than neutral words that followed subliminally presented neutral words. He concluded, "The emotional response generated by the subliminally presented taboo words generalize their affects to neutral words [p. 2]." The tentative assumption is made that the generalization phenomenon was operative in the present study. It is further assumed that it varied directly with the need for social approval. That is, the approval motivated S would tend to suppress or repress his perception of neutral words while suppressing or repressing his perception of its paired conflict word more than the low approval motivated S. The net effect of this face-saving device would be to cancel out inter-individual variation in the PDT when scored in the original fashion. The alternative method of scoring the PDT described above would compensate for this equalizing effect. Consequently, another analysis of variance (Du Bois, 1965) of the PDT was undertaken. This time, the PDT score for a given S was merely the sum of the trials required to identify the conflict words. The summary of this analysis is presented in Table 3.

Table 3  
 Analysis of Variance of PDT Scored by C in  
 Need Levels and Treatment Conditions

Source	SS	df	MS	F
Need (N)	3950.333	2	1975.167	10.308**
Treatment (T)	547.000	2	273.500	1.427
N x T	628.667	4	157.167	0.820
Error	12072.000	63	191.619	-

\*\*  $p < .01$

Table 3 reveals a significant main effect for the need levels. The mean sum of the trials required for recognition of the conflict words for the H groups was 80.417; for the L groups, 67.750; for the M groups, 62.833. Duncan's new multiple range test (Edwards, 1960) revealed a significant difference between the high and medium groups ( $p < .001$ ) and between the high and low need groups ( $p < .01$ ); the difference between the medium and low need groups was not significant. The treatment main effect and the need x treatment interaction were again not significant.

As a test of the generalized shock hypothesis proposed by Seitz (1968), an analysis of the sum of trials required to recognize the neutral words was undertaken. The result of the analysis of variance (Du Bois, 1965) of the neutral words is presented in Table 4.

Table 4 again shows a significant main effect for the need levels. The mean sum of the trials required for recognition of the neutral words for the H groups was 81.667; for the L groups, 68.417; for the M groups, 64.125. Duncan's new multiple range test (Edwards, 1960) revealed that the H groups exceeded the M and L groups ( $p < .01$ ) which did not differ. The treatment main effect and the need x treatment interaction were again not significant.

The above analyses do not support Hypothesis I. That is, no generalization effects, either alone or in interaction with the need levels, were observed. Performance on the PDT, when

Table 4  
 Analysis of Variance of PDT Scored by N in  
 Need Levels and Treatment Conditions

Source	SS	df	MS	F
Need (N)	4013.528	2	2006.764	7.471**
Treatment (T)	415.194	2	207.597	0.773
N x T	1364.222	4	341.055	1.270
Error	16922.375	63	268.609	-

\*\*  $p < .01$

scored without regard for the neutral words, was dependent on the need levels. The high need approval SS were more defensive than lows and mediums, as might be expected. The mediums, surprisingly, were no more defensive than lows.

In addition to comparisons of the means of the PDT for the need levels and treatment conditions, a correlational approach was employed. Pearson r's were computed between the MC SDS and the PDT in each of the three treatment groups. The PDT was scored in the three ways as in the analysis of variance described above: difference between the sum of the trials on which the conflict words were first correctly identified and the sum of the trials on which the neutral words were first correctly identified plus a constant of 30 ( $C - N + 30$ ); sum of trials required to recognize the conflict words ( $C$ ); sum of trials required to recognize the neutral words ( $N$ ). The expectation was that the correlation should be positive and highest in the C1 group and lowest (and possibly negative) in the E group and of an intermediate value in the C2 group. Table 5 shows the results of this analysis.

Table 5 reveals that scoring of the PDT by  $C - N + 30$  yielded inconsistent and contradictory results. That is, the correlation was negative and significant in the C1 group. These surprising results are presumed to have occurred for the reasons outlined above. A test for homogeneity (Edwards, 1960) of the r's between the MC SDS and the PDT as scored by  $C - N + 30$



Table 5  
 Pearson Product-Moment Correlations Between MC SDS  
 and PDT Scored by Three Methods  
 in Three Treatment Groups .

PDT Measure	Treatment Group		
	E	C1	C2
C - N + 30	.12	-.52**	.17
C	.36*	.50**	.09
N	.23	.62**	.09

\*  $p < .05$

\*\*  $p < .01$

suggested that they were not estimates of the same population value ( $.05 < p < .92$ ). The C method of scoring the PDT yielded a significant positive relationship in C1 and a lower one in E, as predicted. The correlation in the C2 group was lowest and not of an intermediate value, as predicted. The test of homogeneity among these three  $r$ 's was not significant ( $.50 < p < .30$ ), suggesting no real differences among them. The correlations based on the N method of scoring followed the same pattern as those based on the C method. Again, however, there was not a significant departure from homogeneity ( $.10 < p < .05$ ).

### Hypothesis II

Hypothesis II was that high scorers who do not receive verbal conditioning would have significantly higher scores on the PDT than lows who do not receive conditioning; the mediums should have intermediate scores. Table 6 shows the mean PDT scores for the H, M, and L groups in C1. The PDT was scored by the three methods described above (C - N + 30, C, N). Duncan's new multiple range tests (Edwards, 1960) was applied to the three means in each of the treatment groups. The error terms for these analyses were those in Tables 2, 3, and 4. None of the differences between three (H, M, L) mean PDT scores with the C - N + 30 method were significant. Under the C method, the H group exceeded the M and L groups ( $p < .05$ ) which did not differ. Under the N method, the H group exceeded the M group ( $p < .05$ ) and the L group ( $p < .01$ ) which did not differ. Thus, partial

Table 6  
Mean PDT Scored by Three Methods in Need  
Levels Within the C1 Condition

Need Level	PDT Measure		
	C - N + 30	C	N
H	25.500	86.125	90.625
M	29.250	68.250	69.000
L	32.250	66.625	64.375

support for Hypothesis II again depended on method of scoring the PDT.

"Task Categorization" of PDT

Ss were questioned regarding their attitude toward the PDT according to the schedule devised by Barthel and Crowne (1962). Ss in this system are classified as oriented either to the "perceptual need" aspects or the "social disapproval" aspects of the PDT. Of the 110 Ss whom Barthel and Crowne interviewed, 48 were placed in each of the two categories. Fourteen Ss gave answers which were too vague to be classified and so were dropped from the analysis. The authors reported that the greatest defensiveness was displayed by high need for approval Ss placed in the "social disapproval" category.

An attempt was made to classify the responses of the 72 alcoholic Ss to this schedule according to Barthel and Crowne's system. Unfortunately, 39 Ss gave answers which were too vague to classify. Twenty-seven were put in the "perceptual" category. It would appear from these limited data that only a very small proportion of the alcoholics were greatly impressed by the socially undesirable aspects of the words in the PDT. Since the split between the two categories was so uneven and since the number of classifiable Ss was small and spread over the nine groups, further analysis of the PDT as a function of the variable "task categorization" could not be undertaken.

### Reliability of Scoring Emotional Words

The system of scoring emotional words was originated by Ullmann and McFarland (1957). They reported an acceptable inter-rater reliability ( $r = .92$ ). Weiss, Krasner, and Ullman (1960) reported a coefficient of concordance among four raters using this system to be significant beyond the .001 level. They also reported a rank-order correlation between two scorings by one E of a sample of 16 TAT-like stories to be .90.

The 192 TAT stories in the E group of 24 Ss were scored twice by E. The first "scoring" was the basis for reinforcement. That is, E had to decide instantaneously while listening to Ss' stories which words were emotional according to the Ullmann and McFarland system. The number of reinforcements actually given was later tabulated from the tape-recordings. As noted in Chapter III, this tally was the basis for the computation of the frequency of reinforcement in C2. However, it was felt that E sometimes did not give enough reinforcements when S responded to the stimulus with a flurry of emotional words. At other times E simply made errors in reinforcement. Therefore, for purposes of analyses, these tapes were rescored by E for number of emotional words per card, regardless of whether the words were originally reinforced or not. This second scoring of the stories was the count used in the analyses to follow. A secondary benefit from this procedure was that it provided an opportunity to estimate the intrarater reliability of the system.

Accordingly,  $r$  was computed between  $E$ 's two scorings of the 192 stories on the  $E$  group only. The resulting  $r$  of .95 was significant ( $p < .01$ ). It should be noted that during the second scoring the first "scoring" was heard and possibly influenced the second hearing, despite the effort to ignore it.

### Hypothesis III

The third hypothesis was that high scorers on the MC SDS would show significantly lower frequencies of emotional words during the initial phase of conditioning than lows; the medium group should display an intermediate value. The number of emotional words on the first two TAT cards (3BM, 13MF) were summed for each  $S$ . Table 7 summarizes the three (high, medium, low need) by three ( $E$ ,  $C1$ ,  $C2$ ) analysis of variance of these scores (Du Bois, 1965).

Neither of the main effects nor, more crucially, the need  $\times$  treatment interaction were significant. Thus, Hypothesis III was not supported.

### Hypothesis IV

The fourth hypothesis was that high scorers on the MC SDS would show more marked conditioning effects than lows; the medium group should have displayed intermediate effects. The number of emotional words for each TAT card for each  $S$  was computed. Table 8 summarizes the three (high, medium, low need) by three ( $E$ ,  $C1$ ,  $C2$ ) by eight (TAT sequence) repeated measures analysis of variance (Winer, 1962) of the frequency of emotional

Table 7  
Analysis of Variance of Frequency of Emotional Words  
During Trials One and Two in Need Levels  
and Treatment Conditions

Source	SS	df	MS	F
Need (N)	599.699	2	299.847	1.645
Treatment (T)	579.528	2	289.764	1.590
N x T	967.639	4	241.910	1.328
Error	11480.250	63	182.226	-

Table 8  
 Analysis of Variance of Frequency of Emotional Words  
 in Need Levels and Treatment Conditions  
 and Sequence of Trials

Source	SS	df	MS	F
Need (N)	1824.764	2	912.382	2.852
Treatment (T)	2960.441	2	1480.220	4.626*
N x T	3259.528	4	814.882	2.547*
Error (B)	20154.766	63	319.917	-
Sequence (S)	66.804	7	9.543	0.342
S x T	603.420	14	43.101	1.542
S x N	385.763	14	27.554	0.986
S x T x N	1003.278	28	35.831	1.282
Error (W)	12323.859	441	27.945	-

\*  $p < .05$



words per card.

Only the treatment main effect and treatment x need interaction were significant. Since the sequence x treatment x need interaction failed to reach significance, Hypothesis IV was not supported.

Duncan's new multiple range test (Edwards, 1960) revealed that Ss gave more critical responses in E ( $\bar{X} = 129.500$ ) than in either C1 ( $\bar{X} = 88.875$ ) or C2 ( $\bar{X} = 100.417$ ); the difference between C1 and C2 was also significant ( $p < .01$ ).

Figure 1 illustrates the treatment x need interaction effect. Under conditions of continuous reinforcement (E), the H and L groups did not significantly differ in average total output of emotional words. But both gave more emotional words than the M group ( $p < .01$ ). When no reinforcement (C1) was given, the H group gave fewer responses than the M and L groups ( $p < .01$ ) who did not differ. Under random reinforcement (C2), the H group gave fewer responses than L and M ( $p < .01$ ), and M gave fewer responses than L ( $p < .01$ ). H gave more emotional words in E than in either C1 or C2 ( $p < .01$ ). The greater mean in C2 than in C1 for H was also significant ( $p < .01$ ). The difference in means for M in E and M in C1 did not differ and both were greater than M in C2 ( $p < .01$ ). L gave more responses in E and C2 than in C1 ( $p < .01$ ). The differences between L in E and C2 were not significant.

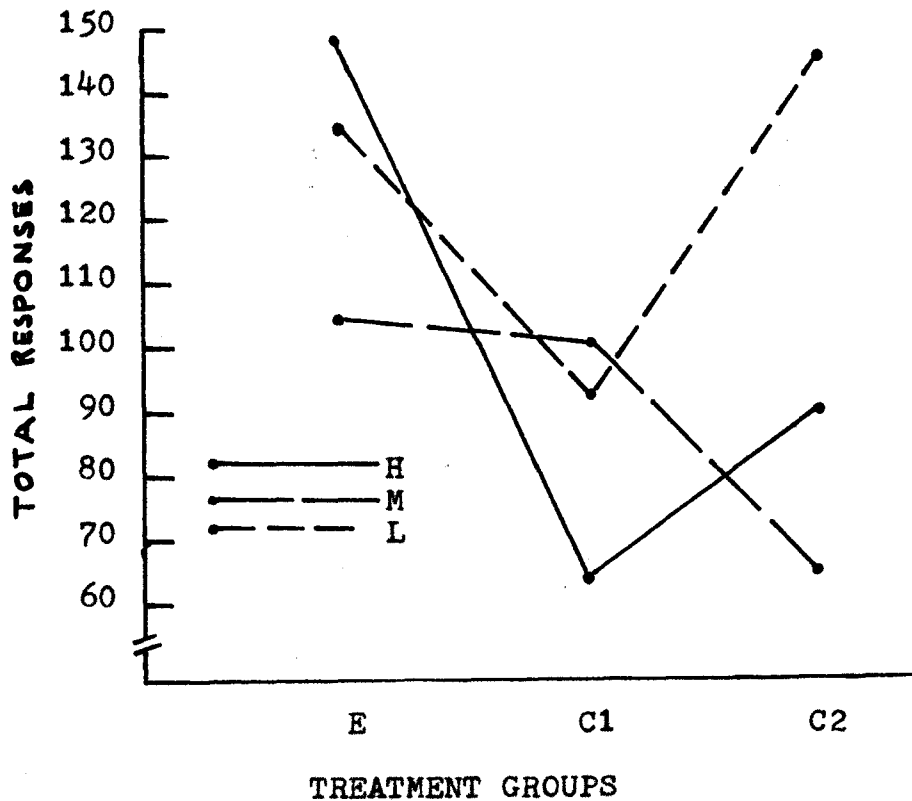


Figure 1. Illustration of Treatment Condition x Need Level Interaction of Frequency of Emotional Words During Trials One and Two.

Awareness

None of the 24 Ss in E were aware of the response-reinforcement contingency. Thus, awareness was not noted despite a very detailed questioning procedure.

It might be argued that the lack of conditioning effects, as defined as a regular increase of emotional words across the eight TAT cards, was due to a lack of awareness on the part of S of what was expected of him.

It is noted that eight of the 24 Ss in E asserted that they were aware of some aspect of the reinforcement given by E. However, no Ss were able to verbalize any aspect of the response class emotional words.

## Chapter IV

## DISCUSSION

Distribution of MC SDS in an Alcoholic Sample

That the mean (16.46) and standard deviation (7.03) of the MC SDS in the sample of 153 SS were greater than those for all normal groups reported by Crowne and Marlowe (1964, pp. 209-212) was to be expected on both clinical and empirical bases. A major characteristic of the personalities of many alcoholics is dependency (Blane, 1968; Catanzaro, 1967; Plaut, 1967; Vanderpool, 1966). The MC SDS taps this variable, in the sense of extreme dependence on the evaluation by others. The fact that other heterogeneous clinical groups also tend to score, on the average, higher than normals tempers their interpretation. That is, the MC SDS may be responsive to psychopathology, regardless of its dynamic roots. This hypothesis is consistent with more recent findings of a positive relationship between the MC SDS and clinical scales of the MMPI (Katkin, 1964; Stones, 1965). The evidence supporting a positive relationship between the MC SDS and psychopathology is beginning to mount. The authors did hope to develop a scale of need for approval which was independent from psychopathology.

### Hypothesis I

Hypothesis I was that there would be a significant interaction between the score on the MC SDS and the treatment condition on the PDT. Neither method of scoring the PDT (C - N + 30 and C) supported this hypothesis. PDT performance was related to need level. That is, the H groups had higher PDT scores (when scored by the C method) than the medium and lows which did not differ. PDT performance was not, however, related to the treatment conditions.

This heightened defensiveness among highly approval-motivated people on the PDT is consistent with the findings of Barthel and Crowne (1962). It is also consistent with the growing body of literature which is supportive of the construct validity of the MC SDS as a measure of defensiveness (Conn & Crowne, 1964; Fisher & Kramer, 1963; Lichtenstein & Bryan, 1965; Norman, 1963, Stollak, 1965; Strickland & Crowne, 1963; Tutko, 1962).

The lack of treatment effects of verbal conditioning on the PDT does not support the findings of Ullmann, Weiss, and Krasner, 1963. No satisfactory interpretation of this inconsistency is apparent.

It is concluded that although the production of emotional responses on the TAT is a function of reinforcement for them (see discussion of Hypothesis IV below), this behavior does not generalize to a measure of perceptual defensiveness.

The implication of these findings is that, in psychotherapy,

changes in patient verbal behavior which is due merely to the social reinforcement of the therapist may be situation-specific. For example, patients may tend to be less defensive within the psychotherapy situation, but this "improvement," if it is generated only through the approval of the therapist, may not become manifest outside it.

The correlational test of Hypothesis I was quite revealing of the importance of method of scoring the PDT. In the C1 group the  $r$  between MC SDS and PDT when scored by the C - N + 30 method was significant and negative; it was significant and positive when the C method was used. These data support Seitz's (1968) thesis of "shock" which is generated from the perception of the conflict words and interferes with the perception and/or reporting of the neutral words.

### Hypothesis II

Hypothesis II was that high scorers who did not receive verbal conditioning would have significantly higher scores on the PDT than lows who did not receive conditioning; the mediums should have had intermediate scores. This hypothesis was partially supported when the C method of scoring the PDT was employed. The high scorers were more defensive than lows and mediums who did not differ. The PDT apparently was tapping the tendency for approval motivated Ss to behave defensively.

### "Task Categorization" of PDT

Few of the alcoholics focused on the social disapproval

aspects of the conflict words on the PDT. Inspection of the data revealed that these few were spread approximately evenly across the nine separate groups. Barthel and Crowne (1962) found that task categorization was an important variable when the PDT was obtained from a normal college sample. The alcoholic sample differed from the college sample on this count. They were much less likely to admit being at all disturbed by the conflict ridden and/or taboo words. Despite this tendency not to admit disturbance, the high need groups behaved as if they were disturbed (see Hypothesis I and II).

### Hypothesis III

The third hypothesis was that high scorers on the MC SDS would show significantly lower frequencies of emotional words during the initial phase of conditioning than lows; the medium groups should have displayed an intermediate value. Hypothesis III was not supported, the groups did not differ. The implication of this finding is that frequency of emotional words in a TAT story is not sensitive to the defensiveness tapped by the MC SDS.

On the other hand, this lack of difference early in conditioning among the nine groups offered assurance that conditioning effects, if they were to be observed, could not be explained away as a case of simple regression effect.

### Hypothesis IV

The fourth hypothesis was that high scorers on the MC SDS would show more marked conditioning effects than lows; the

medium group should have displayed intermediate effects. Hypothesis IV was not supported. As a matter of fact, there was no sequence main effect. Conditioning, in the sense of a progressive increase in the operants across trials, did not occur. However, the total number of critical responses on all the eight cards was a function of the treatment condition. Ss in the E condition gave more responses than Ss in either the C1 or C2 conditions; Ss in C2 were more emotionally expressive than those in C1. Reinforcement was effective in eliciting more responses than non-reinforcement, but not in a regular way. In addition to these specific effects, random reinforcement also led to an increase in the operants. The presumed mechanism which could account for this finding was a lowering of defensiveness in S due to generalized reassurance by E. This mechanism probably was operative in the E condition also. These findings make clear the necessity of including a control group which gets random reinforcement in studies of the operant conditioning of verbal affect. Without this control group, results in this type of conditioning study are ambiguous. That is, positive results may be due either to specific conditioning effects or more generalized reassurance which is incidental to the conditioning of affect.

The analysis of the treatment x need interaction was quite revealing. The high need group behaved as expected, giving the most responses under conditions of reinforcement, the least when



no reinforcement was forthcoming, and an intermediate number when receiving random reinforcement. The low need group performed in a similar fashion, except that these non-approval motivated Ss gave the same number of responses under conditions of reinforcement for emotional words and random reinforcement. One interpretation of this finding is that low need for approval Ss sense from E's responsiveness that conditions for affective expression are present, but they are not firmly anchored to these cues as are high need Ss. The medium need group performed in a somewhat anomalous fashion in that they gave fewer emotional words under random reinforcement than under no reinforcement. No explanation for this behavior is suggested.

#### Awareness

That no Ss in the E group were aware of the correct response-reinforcement contingency may serve as an explanation for the lack of sequence effects as noted in the discussion of Hypothesis IV. That is, Ss did not "catch on" and drastically increase the production of emotional words. In fact, no S came even close to labeling the response class emotional words.

It is the impression of the author that when Ss were aware of any aspect of reinforcement they interpreted it as generalized reassurance. They did not link it up with anything specific which they had said.

## Chapter V

## SUMMARY

The purpose of this study was to demonstrate generalization effects from the verbal conditioning of affect responses to the TAT to a perceptual defense test (PDT) as a function of the Marlowe-Crowne Social Desirability Scale (MC SDS), which is a measure of the need for social approval. Previous research has indicated that (1) conditioned verbal affect responses generalize to a PDT, (2) high scorers on the MC SDS display heightened conditionality and defensiveness on a PDT. The attempt was made to utilize the heightened conditionability among approval motivated Ss to therapeutically decrease defensiveness.

The specific hypotheses were the following: (1) There would be an interaction between score on the MC SDS and the presence or absence of verbal conditioning on the PDT. (2) High scorers on the MC SDS who do not receive conditioning would have higher scores on the PDT than lows. (3) High scorers on the MC SDS would show lower frequencies of emotional words during the initial phase of conditioning than lows. (4) High scorers on the MC SDS would show more marked conditioning effects than lows.

From a pool of 153 male alcoholic inpatients, a sample of 72 was divided into high (H), medium (M), and low (L) need for approval groups. Eight Ss from each need group were assigned to each of three treatment groups: reinforcement for emotional words given in response to the TAT (E), no reinforcement (C1), random reinforcement (C2). Following the PDT, S were administered a detailed interview for awareness of various aspects of the procedure.

The mean score on the MC SDS for the alcoholic sample was higher than that for several normal samples. Hypothesis one was not supported. However, PDT score was related to need level but not treatment condition. This finding, as others, was dependent on the method of scoring the PDT. Hypothesis two was partially supported; H groups were more defensive than M and L groups, which did not differ. Hypothesis three was not supported. Hypothesis four was not clearly supported. Conditioning, in the sense of a progressive increase in the operants across trials, did not occur. However, the total number of critical responses was a function of an interaction between the need levels and treatment conditions. The H groups gave the most responses in E, the fewest in C1, and an intermediate number in C2. The L groups behaved similarly, except they gave the same number of responses in E and C2. The M groups behaved in an anomalous fashion. No Ss become aware of the response-reinforcement contingency.

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NAME (PLEASE PRINT): \_\_\_\_\_

PERSONAL REACTION INVENTORY

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally. If your answer is true, circle the T. If it is false, circle the F. Be sure to answer each item.

1. Before voting I thoroughly investigate the qualifications of all candidates..... T F
2. I never hesitate to go out of my way to help someone in trouble..... T F
3. It is sometimes hard for me to go on with my work if I am not encouraged..... T F
4. I have never intensely disliked anyone..... T F
5. On occasion I have had doubts about my ability to succeed in life..... T F
6. I sometimes feel resentful when I don't get my way..... T F
7. I am always careful about my manner of dress..... T F
8. My table manners at home are as good as when I eat out in a restaurant..... T F
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it..... T F
10. On a few occasions, I have given up doing something because I thought too little of my ability..... T F
11. I like to gossip at times..... T F
12. There are times when I felt like rebelling against people in authority even though I knew they were right..... T F
13. No matter who I'm talking to, I'm always a good listener..... T F
14. I can remember "playing sick" to get out of something..... T F
15. There have been occasions when I took advantage of someone... T F
16. I'm always willing to admit it when I make a mistake..... T F
17. I always try to practice what I preach..... T F

GO ON TO NEXT PAGE



- |  |   |   |
|--|---|---|
| 18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people..... | T | F |
| 19. I sometimes try to get even rather than forgive and forget..                                 | T | F |
| 20. When I don't know something I don't at all mind admitting it.....                            | T | F |
| 21. I am always courteous, even to people who are disagreeable..                                 | T | F |
| 22. At times I have really insisted on having things my own way.                                 | T | F |
| 23. There have been occasions when I felt like smashing things..                                 | T | F |
| 24. I would never think of letting someone else be punished for my wrongdoings.....              | T | F |
| 25. I never resent being asked to return a favor.....  | T | F |
| 26. I have never been irked when people expressed ideas very different from my own.....          | T | F |
| 27. I never make a long trip without checking the safety of my car.....                          | T | F |
| 28. There have been times when I was quite jealous of the good fortune of others.....            | T | F |
| 29. I have almost never felt the urge to tell someone off.....                                   | T | F |
| 30. I am sometimes irritated by people who ask favors of me.....                                 | T | F |
| 31. I have never felt that I was punished without cause.....                                     | T | F |
| 32. I have sometimes thought when people have a misfortune they only got what they deserved..... | T | F |
| 33. I have never deliberately said something that hurt someone's feelings.....                   | T | F |

## APPENDIX B

The following are the instructions used in the group administration of the MC SDS.

Good afternoon. My name is Victor Heckler. I will be with you here for the next several weeks. The main purpose of my being here is to do research. That's another way of saying that we want to better understand you, both as a group and as individuals. Hopefully, this understanding may help us become more effective in our treatment efforts.

In the research we will begin this afternoon there are two main parts. The first part we will do together in a group. This is the taking of a short questionnaire. I'll say more about that in a minute. In the second part it will be necessary for me to see you one at a time. So if you get an invitation to see Mr. Heckler, you will not be completely surprised.

Now it is important that you do both parts of the project on your own. So I ask you not to say to your fellow patients or to the staff how you answer these questions. Also, after you see me individually, please do not discuss with the other fellows what happened.

Any questions so far? Good.

So let's get down to business. I'll pass out these papers and pencils.

The first thing to do is print your name on the top of the first sheet. Now your age.

Now let's read the instructions together. (Read them aloud) Any questions? Good. When you're done please leave the paper and pencil with me. If you have any questions about the inventory, just raise your hand. I'll be seeing you again soon. Thank you all.

Illiterate Ss were administered the MC SDS in small groups. Their protocols were later eliminated.



## APPENDIX C

Directions for Scoring Emotional Words

Ullmann & McFarland (1957) set forth the following rules for the scoring of emotional words:

General definition: Words with a special punch to them, which convey tension, action, or feeling, which breathe life into communication.

Specific definition: Nouns which deal with interpersonal relationships of a tensional nature, such as competition, hope, approval, trouble, strength, sanity, argument, decision, problem.

Verbs which deal with human tensions or motivations such as strive, plead, hang, restore, try, wonder, love, lose, regret, endure, must, want, stare, frustrate.

Modifiers either single words, or groups of words counted as one emotional word, which tell of the human condition beyond the overtly descriptive. Such words as extra kick, reached the end, cheer up, wrong, bewildered, dazed, strained, willful, rash, impulsive, cool, going too far, tense, depressed, and decisive are emotional words. Words which are descriptive of the stimuli such as, old, young, male, female, mother and son (for 6BM), graveyard (for 15) are not emotional words.

Words which are not in any of the above categories but which communicate emotion. Exclamations such as "heck with her," "this is hard," or "like me fixing to leave home" are examples. Unusual or unexpected combinations of words which are expressive and are not due to the subject's inattention to the stimuli, such as holy protector, side of sympathy, but it has been done, are examples.

Example definition: 17BM: He seems like he's afraid of sliding down the rope. He doesn't seem very happy about the situation. (more?) No, I don't have too much. (happen?) No, it doesn't seem too much to describe here. (score is 2).

4: Well, this picture seems, the first seems upset and she seems to be trying to talk to him, and he seems very angry about the situation. (what sort?) No, I see another woman in the background. I don't know if they quarreled or not. He looks like he's in a kind of daze. He doesn't want to talk about it, whatever it is. (score of 6). [p. 82].

NAME: \_\_\_\_\_

CODE: \_\_\_\_\_

NUMBER: \_\_\_\_\_

E C1 C2

1. How did you go about making up the stories to the pictures?
2. What do you think the purpose of telling the stories was?
3. What did you think about while telling the stories?
4. Did you think you were supposed to make up your stories in any particular way? In what way?
5. Did you get the feeling you were supposed to change the way in which you made up your stories? How?

(If in questions 1-5 S mentions reinforcement, do not ask 6-8.)

6. Were you aware of anything else that went on while you were telling the stories? What?
7. Were you aware of anything about me while you were telling your stories? What?
8. Were you aware that I said anything? What?

(If in questions 6-8 S does not mention reinforcement, terminate interview.)

9. What did my saying (Use S's words) mean to you?

10. Did you try to figure out what made me say \_\_\_\_\_ or why  
or when I said \_\_\_\_\_ ?

11. Did you or do you have any other ideas about what was making  
me say \_\_\_\_\_ ? What?

12. Would you say you wanted me to say \_\_\_\_\_ ?  
Very much? Some? Didn't care one way or other?

13. While going through the pictures did you think that my saying \_\_\_\_\_  
depended on the words you used in telling the stories ?  
What?

(If S verbalizes a correct contingency at any time during the interview, the above schedule is discontinued and the following questions are asked)

- (A) Is that something you were actually aware of while telling the stories or is it something you thought of just now?
- (B) Did the fact that you realized this have any effect on the way you made up your stories? In other words, did you try to make up your stories in some way because I was saying \_\_\_\_\_?
- (C) Did the fact that you realized this have any effect on the way you responded to the words on the cards in the machine? How?
- (D) Did my saying \_\_\_\_\_ help you to say some words on the cards in the machine that you might not say to me? A lot? Some? Not at all?

(All Ss who verbalized a correct contingency were also asked question 12)

## ABSTRACT

An attempt was made to demonstrate generalization effects from the verbal conditioning of affective responses to the TAT to a perceptual defense test (PDT) as a function of the Marlowe-Crowne Social Desirability Scale (MC SDS), a measure of the need for social approval. From a total of 153 male alcoholic inpatients, a sample of 72 was selected and divided into high (H), medium (M), and low (L) need groups. Eight Ss from each group were assigned to each of three treatment groups : reinforcement for emotional responses to the TAT (E), no reinforcement (C1), random reinforcement (C2). Following the PDT, a detailed interview for awareness was administered. Results were dependent on method of scoring the PDT. Since PDT performance was not related to treatment condition, generalization was not demonstrated. However, the PDT was related to need level: H was more defensive than M and L. Conditioning, in the sense of increase in operants across trials, did not occur. But the total number of critical responses was a function of an interaction between need level and treatment condition: H gave the most responses in E, the fewest in C1, and an intermediate number in C2; L behaved similarly, except the number of responses in E and C2 did not differ; M behaved in an anomalous fashion. Neither conditioning nor PDT performance was dependent upon awareness. Implications for the verbal operant model of psychotherapy were discussed.

APPROVAL SHEET

The dissertation submitted by Victor J. Heckler has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the dissertation is now given final approval with reference to content, form, and mechanical accuracy.

The dissertation is therefore accepted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

January 15, 1970  
Date

Frank Keller  
Signature of Adviser