CONDITIONING OF THERAPEUTIC VERBAL BEHAVIORS IN A PROGRAMMED LEADERLESS GROUP SETTING

By

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CHAPTER I

INTRODUCTION

The Problem

Three million Americans avail themselves of some form of psychiatric care each year, and many more who need or want these services are unable to obtain them because of prohibitive cost and shortage of trained therapists. Moreover, the traditional model which emphasizes the therapist-client relationship has been criticized as being ineffective with those who are being treated. Eysenck (1969) surveyed numerous reports on the improvement of neurotic patients after conventional psychotherapy and compared the results with the best available estimates of patients who recovered without benefit of such therapy. He concluded that the figures failed to support the hypothesis that conventional psychotherapy facilitates recovery from neurotic disorder. Bandura (1969) has made similar criticisms and also questions the method of using subjective impressions of therapists and projective tests of patients as valid measures of efficacy of treatment. As a result of such criticisms, alternative therapeutic approaches have been tried.

One alternative approach has been the development of training and therapy groups. The present study focuses on programmed leaderless groups which is a type of human relations training group. Another alternative has been the application of learning theory principles to

behavioral problems, and the present study focuses on learning theory as applied to the verbal conditioning process. Aspects from both of these areas will be combined to demonstrate verbal conditioning of a therapeutic nature in a group setting.

In order to understand the rationale of the present model, it will be necessary to discuss the following two areas: Groups: (1) groups in general, (2) human relations groups, (3) mutual goals of human relations groups and group therapists, (4) programmed leaderless groups, and (5) training of paraprofessionals. Verbal Conditioning: (1) application of learning theory in general, (2) verbal conditioning, (3) verbal conditioning of individuals and groups, and (4) modeling and instructions in groups. Finally, the present study will be discussed, showing how aspects of these two areas can be combined.

Groups

In response to both the shortage of therapists and as a therapeutic method, the concept of group therapy evolved. Groups range from the more traditional therapy models to those oriented toward the training and development of human relations skills. There will be no attempt to review the more traditional approaches as they are covered elsewhere. For example, Ruitenbeek (1969) presents a collection of original and reprinted articles, including some from analytic schools of thought, and also gives a history of group psychotherapy. The group psychotherapy literature for 1969 and 1970 is reviewed by MacLennan and Levy (1970, 1971). They cover studies done in the area of children, adolescents, college counseling, special problems, clinical research, etc. In addition, Bergin and Garfield's new

Handbook of Psychiatry and Behavior Change (1971) covers research over a wide range of orientations from Freudian through the behavior therapies.

The type of group that is of most interest to the present study is oriented toward the training and development of human relations skills. It is from this area that part of the philosophy of the present study was created. This type of group grew out of Kurt Lewin's work at the Massachusetts Institute of Technology and the approach has been continued by the National Training Laboratories (NTL) in Bethesda, Maryland (Rogers, 1970).

The groups that have evolved from these beginnings go by various names and have a wide diversity of emphasis; for example, game groups, sensitivity groups, encounter groups, training groups, therapy groups, etc. However, they all have in common an emphasis on intensive group experience. For the purpose of this paper, such groups will be called human relations groups.

One way of distinguishing human relations groups from the more traditional approaches is that the latter focus more on historical, organizational, and family life data, while the former are more interested in analysis of here and now data that is perceptually available to the group. "Here and now," as used in this context does not refer primarily to overt behavior, but to awareness of self, of consciousness or current experiencing (Perls, 1970).

Most human relations groups are characterized by an emphasis on personal growth rather than remedial treatment, and they see themselves as normal people who are attempting to function more effectively at interpersonal levels. They are therefore more interested in available,

interpersonal data rather than unconscious or motivational material. In addition, they are more interested in trying out new behavior than gaining new insight. The emphasis is not on leader-member relations but on members' interactions.

Gibb (1971) has reviewed the area of human relations training and states that "the barriers to precise and satisfying research on the effect of training are many" (p. 842). There is an inadequacy of theories and lack of programmatic directionality. Most of the work has been done under field conditions and presents design problems, including lack of controls. Reliable measures are seldom validated and are often related to trivial outcomes. While a number of studies have been done in an attempt to determine the effectiveness of human relations training, full use of available research tools has yet to be implemented so that results are only suggestive in regard to this type of training.

An example of the type of research being done in this area is a study by Bunker (1965) in which he studied 341 participants in two-week sensitivity training groups. He used matched-pair control groups with a total of 112 subjects. After the subjects' training they were rated by from five to seven judges who made subjective judgments of behavioral changes of the participants. The experimental groups showed more increased openness and greater tolerance for new information than the controls. It must be pointed out, however, that rater bias existed in this study because the raters had prior knowledge of which subjects were in the experimental groups.

More to the point for the present study are the areas of mutual concern to both therapists and human relations trainers, such as the

use of feedback, self-concept, and empathy. Feedback on perceptions and feelings of the participants in human relations groups is generally seen as central to the process. The feedback process is also related to a participant's self-concept. A person's self-identity is influenced by the opinions that group members share with him. In addition, the more a person is dissatisfied with his present self-perception, the more likely he is to change (Gibb, 1971).

Empathy is another important aspect of relationship between persons. All therapists, including analysts, use the term "empathy" and stress its importance. Truax (1961) has defined accurate empathy as "sensitivity to moment to moment feelings during the therapy session and the verbal facility to communicate this understanding in a language attuned to the client's current feelings" (Truax and Mitchell, 1971, p. 318). Gibb (1971) in his comprehensive review of the human relations literature, does not cover the subject of empathy explicitly; however, it is implicit in much of what he does say.

Thus, several concepts in the human relations literature that are related to some of the stated aims of professional therapists are: (1) awareness of one's own feelings, (2) awareness of and ability to empathize with another's feelings, (3) congruence of self-image and the image others have of you, and (4) the importance of feedback in the learning process (Rogers, 1969, Sullivan, 1953, Truax and Mitchell, 1971, and Gibb, 1971). These concepts are included in the verbal conditioning categories used in the present study.

One form of human relations training that may be as effective as groups led by professionals is that of leaderless groups. The research on leaderless groups is contradictory and more studies will have to be

done before the relevant variables can be isolated. The variables that may account for the contradictions are subject populations, definition of measurement of improvement, and differences in therapists and therapies that have been employed (Bednar and Lawlis, 1971).

One advantage that leaderless groups have is that members are not allowed to become dependent on the therapist. This advantage is also true in regard to programmed leaderless groups, with the added advantage of having a therapist who assumes responsibility for the group even though he is not physically present. The programmed leaderless group meets without a leader but uses programmed material or instruments that function as surrogate leaders (Gibb, 1971). For example, a therapist might present a structure to help a group work toward a particular goal and then use additional tools such as audio or video tapes, yet remain absent himself from the therapy sessions.

The use of programmed groups would appear to be a good vehicle for modification of behavior by operant techniques. The present study incorporates this concept with a design using instructions as the program in a leaderless group, and then gives feedback to the participants regarding their participation through the use of counters and lights.

As stated earlier, one of the attempts to cope with the shortage of qualified professionals in the field of behavior change has been the training of paraprofessionals. One author has said that it has become "almost fashionable to rely on such therapists to round out a community health program" (Tolor, 1971, p. 48). One of the earlier attempts to utilize lay people as counselors was set up by Margaret Rioch (1967) with a grant from the National Institute of Mental Health.

She initiated a training program for housewives with the belief that without medical or psychological education they could be trained to practice psychotherapy. She has reported that her students were performing at the same level as advanced psychiatric residents.

Other studies have utilized untrained college students in the role of therapist. One such experiment compared the therapeutic efficiency of such non-professionals with professional therapists and controls who received no therapy. The subjects were male, chronic schizophrenics who were hospitalized. Of this population, only assaultive and organic brain damaged patients were excluded. Results indicated that the professional and non-professional therapists were similarly effective with the non-professionals having a slight but not significant improvement rate higher than the professionals (Poser, 1966). The present study is designed so that paraprofessionals could use the procedures with a minimum of training.

In this section the general area of therapy groups was discussed. The goals of human relations groups were emphasized with programmed leaderless groups being singled out as important to the design of the present study. Finally, the training of paraprofessionals was discussed.

Verbal Conditioning

Learning theories and methods of application are multiple and varied. The principles of learning theory have been applied by behavioral therapists to such areas as desensitization (Wolpe and Lazarus, 1966), changing deviant behavior (Krasner and Ullman, 1968), treatment of hospitalized patients (Shaefer and Martin, 1969), and

token reinforcement programs in the classroom (Patterson, 1971). Reviews of the literature of learning theory as applied to the modification of behavior may be found in Krasner (1955, 1971a, 1971b, and Krasner and Ullman, 1968). Several studies in the area of verbal conditioning will be discussed here in detail as they are relevant to the present study.

Verbal conditioning studies have served as a link between the experimental laboratory and clinical application since Greenspoon (1954) first demonstrated that a simple verbal response could influence the frequency of emission of the verbal response class of plural nouns. He had his subjects say all the words they could think of, and when the subject verbalized a plural noun, the experimenter indicated his attention which served as a generalized reinforcer that increased the incidence of the response class.

Most of the early studies were involved with conditioning certain words, numbers, or nonsense syllables with individual subjects. Reinforcement was generally accomplished through the use of simple verbal comments or physical gestures on the part of the therapist or experimenter. These studies showed that verbal behavior could be influenced through the use of reinforcement under certain conditions (Krasner, 1971b). Other studies used buzzers, lights, and bell-tones to administer the reinforcement instead of verbal comments and gestures (Hastorf, 1968, Kruger, 1971).

The transition from the laboratory to a clinical setting has not been without its difficulties. A succinct statement of the status of research in the field of behavior therapy, which includes the verbal conditioning literature, has been made by Krasner as follows:

> A review of the literature indicates that the present status of the field is comparable to that of most other fields of psychology: a plethora of publications, many inadequate research designs, some well-controlled sophisticated studies, an urgency for application to relevant human problems, enormous promise as to its efficacy in changing behavior, great need for caution, and perhaps above all, the need for ethical concern as to its social and value implications (1971a, p. 519).

In light of the promise of verbal conditioning techniques, it is difficult to understand why there has been so little direct systematic application to complex verbal behaviors. There have been a few attempts to condition subjects individually and even fewer that used subjects in groups. An example of subjects conditioned individually will now be presented.

Ullman, Krasner, and Collins (1961) demonstrated that changes in verbal behavior had consequences for changing other behaviors. They did an experiment with hospitalized neuropsychiatric patients which indicated that verbal behaviors that had been conditioned on an individual basis had consequences on behavior of the subjects when they were in group therapy.

In the above study, subjects were divided into groups receiving positive-personal reinforcement, impersonal-unstructured reinforcement, and a group receiving no reinforcement. The subjects were seen individually by a therapist who told the patient he wanted to see how people made up stories about pictures shown to them. In each condition subjects were shown four pictures and asked to make up stories to last at least five minutes each. The verbal class that was reinforced was emotional words. The subjects in the positive-personal reinforcement condition were responded to by a head nod and approving sound from the therapist when they verbalized emotional words. In the

impersonal-unstructured condition, the therapist responded by pushing a button attached to an electric counter which emitted a loud click and was visible to each patient, but he was not instructed as to its purpose. If the patient questioned the meaning of the counter, he was only told that it was an experimental measure. The third group received no reinforcement and acted as a control group.

Pre and post measures by group therapists showed significant gains in the adequacy of interpersonal relationships in group therapy for the group receiving the positive-personal reinforcement. There was no significant gain for the other two groups. The failure of the impersonal reinforcement group to show change is not surprising since they were not instructed as to the purpose of the reinforcement apparatus, and might have interpreted the clicks as an indication of mistakes.

This experiment has relevance to the present study for two reasons. First, awareness on the part of the subject has been shown to be an important variable in demonstrating the acquisition of verbal behaviors. Early verbal conditioning studies found evidence for conditioning without awareness (Adams, 1957, Krasner, 1958, and Salzinger, 1959). However, as methods of measuring awareness have become more comprehensive, most studies indicate that subjects who are aware of the correct response-reinforcement contingency demonstrate acquisition and extinction of verbal behavior, while those who are unaware may not condition. Also, learning with awareness appears to be more consistent with models that stress the importance of thought, affect, motivation, personality, social influence, and the more spontaneous aspects of human behavior (Murray and Jacobson, 1971). Unawareness of

the subjects in the impersonal-unstructured condition of the study done by Ullman, et al., may well account for lack of significant conditioning.

The second reason the above study is pertinent is that the authors propose an ad hoc hypothesis that conditioning of emotional words may be less effective with subjects who are already highly verbal, like college students, and may only be applicable to subjects in a particular segment of the mental health continuum, such as hospitalized patients. In the present experiment, both the use of college students as subjects and awareness of the response-reinforcement contingency were incorporated.

One study, which was not of a clinical nature, has important implications for clinical application of verbal conditioning in groups. Hastorf (1968) did a study in which one of the things he was attempting to demonstrate was that the structure of a group could be modified by differentially reinforcing the behavior of individuals while they were participating in a group problem solving situation. Groups of four members each were told that they were to work as a group in solving human relations problems. Each subject participated in three sessions. In the first session, subjects worked at solving a particular problem and were observed from behind a one-way mirror. Measures were taken of the total length and number of times an individual talked. At the end of the first session the subjects filled out a questionnaire which enabled the experimenters to rank order the perceived status hierarchy in the group. In the second session the subjects were told that the experiment was concerned with the influence of feedback on group discussion and that they were to be a feedback

group. Information as to their progress was to be given by way of green and red lights that were in front of each subject and visible only to each individual. Green lights meant that a subject's contributions were considered facilitative and red lights meant he was hindering the group process. Subjects were further told that the people controlling the lights were human relations experts. In actual fact, the lights were controlled by the experimenters, and their purpose was to attempt to influence the behavior of the subjects by use of the lights so that the subject who was next to lowest on the status hierarchy, as ranked by the questionnaire, would become the leader of the group and the other three members would become followers. The instructions given these subjects clearly imply some contingency between what the subjects said and the presence of either red or green lights. At the end of the second session another questionnaire was administered and results showed that the target person had indeed assumed the perceived status of leadership. In addition, the length and number of his verbalizations had substantially increased. A third session indicated that the leadership behaviors were maintained at a lower but still significant level when no further reinforcement by lights was applied. In contrast to the Ullman, Krasner and Collins (1961) study, Hastorf has shown that even subjects who were informed concerning the reinforcement contingency, can be conditioned in a group context.

As was mentioned, the Hastorf study was not designed to clinically modify verbal behavior in a therapeutic manner. A study in which reinforcement was applied with therapeutic intent to group verbal behaviors was done with institutionalized juvenile delinquents as

subjects (Kruger, 1971). Kruger's subjects were 18 males between the ages of 13 and 18, and they were divided into three therapy groups of six members each with two male therapists randomly assigned to each group. Reinforcement was by immediate light flashes which were totaled and could be exchanged for primary reinforcements, such as candy. Reinforcement was administered under experimenter-reinforcer and peer-reinforcer conditions.

In the experimenter-reinforcer condition, the categories chosen to be reinforced were broad general therapy content categories: (1) self-report questions which were worded so as to elicit relevant information from another person, (2) suggestion of solutions, such as, "So you think . . . ." or interpretive reasons, such as "Maybe you did that because . . . . ," (3) reinforcing statements which included any positive statements, (4) statements that showed positive regard and reduced tension, and (5) statements that showed personal responsibility.

In the peer-reinforcing condition, the subjects were told to reinforce for statements they thought were: (1) helpful, (2) led to good conversation, and (3) showed interest. Kruger's result indicated that peer-reinforcement was significantly better in eliciting more desired statements; however, reinforcement categories differed markedly between the experimenter-reinforcer and peer-reinforcer conditions. In addition, there is no indication that any check on the judgments concerning reliability of reinforceable states was made for either the experimenter or peer reinforcer conditions.

Pilot work done on the present study demonstrated the difficulty of consistent reinforcement with categories that were not precisely defined, and many hours were spent in determining operational

definitions of response categories that would enable the experimenter to be consistent in applying reinforcement and allow for replication of the experiment. It would appear that the use of such broad categories and sketchily trained, disturbed adolescents can only provide limited conclusions concerning the relative efficacy of the two reinforcement conditions.

The last study to be discussed is one that demonstrated the effects of a model and instructions on group verbal behaviors of an affective nature (Whalen, 1969). This study did not include a reinforcement process but demonstrated that affective verbal behaviors can be learned through certain modeling procedures. There were four conditions and four subjects to each group. In two of the conditions, subjects were shown a film in which the desired verbal behaviors were modeled and then given detailed or minimal instructions to engage in the behavior. In the other two conditions, subjects were not shown the film but were given detailed or minimal instructions. Dependent measures were continuous ratings of five verbal response measures, which included behaviors modeled in the film as well as those typically occuring in newly formed groups. The response classes included: (1) personal discussion, (2) feedback, (3) impersonal discussion, (4) group process responses, and (5) a category which included several descriptive, non-content aspects of communicative speech which frequently occur in a group setting. Results indicated that in the two categories of personal discussion and feedback, which are of the most importance to the present study, the film plus the detailed instructions condition elicited more responses than any of the other conditions. However, the group receiving detailed instructions and

no film gave more of the desired responses than those viewing the film and getting minimal instructions.

The results of this study would seem to indicate the importance of detailed instructions in eliciting desired behavior, and also demonstrates that affective verbalizations can be learned through modeling procedures. The present study made no specific attempt to model the desired verbal behavior, but did provide detailed instructions of the desired responses.

In this section the general application of learning theory was noted, and the specific area of verbal conditioning was discussed as it related to laboratory and clinical application, both with individuals and in groups. The studies cited have raised questions regarding the subject population that will respond to verbal operant procedures and the question of the subject's awareness of the response-reinforcement contingency when mechanical reinforcement procedures are used. They have also pointed up the importance of precisely defined response categories, reliability ratings for the persons doing the reinforcing, the effects of modeling, and the positive effects of detailed instructions.

The Present Study

The present study attempted to develop procedures that would demonstrate that pre-defined categories of verbal behavior presumed to be therapeutic in nature, could be conditioned in a group setting.

Attempts have been made to condition verbalizations of subjects in a particular segment of the mental health continuum, hospitalized neuropsychiatric patients (Ullman, Krasner, and Collins, 1961), and

institutionalized juvenile delinquents (Kruger, 1971). Although Ullman, et al. (1961) hypothesized that college students might not respond to the verbal conditioning process when mechanical means were used to administer the reinforcement, Hastorf (1968) showed that such conditioning is feasible. The present study used volunteer undergraduate college students for its subject population and was designed to show that this population is amenable to the verbal conditioning process.

The Ullman, et al. and Hastorf studies also raised the question of the subject's awareness of the response-reinforcement contingency. In the present study, subjects in the experimental groups were made aware that the mechanism used to administer the reinforcement is a way of giving them feedback on their progress.

It was desired that the verbal response categories to be reinforced be relevant to human problems; therefore, the categories chosen included statements reflecting some of the stated aims of both human relations trainers and professional therapists. The necessity of precisely defined verbal categories was pointed out when the Kruger (1971) study was discussed. In the present study it was desired that the verbal response categories be broad enough to allow for freedom of expression and a close enough approximation to real-life situations in order to facilitate generalization; however, categories also had to be narrow enough so they could be objectively scored. The categories used in the present study have been operationally defined in Chapter II.

The importance of consistency of reinforcement and the reliability of the judgments of the person doing the reinforcing was also pointed

out in the discussion of the Kruger (1971) study. Therefore, inter-judge agreement measures were undertaken to assure scorer reliability for the present experiment.

As stated earlier, it was desired to have a design where groups could interact from instructions in the absence of a leader or therapist and where the conditioning process could be administered by a paraprofessional. For this reason, the groups in the present study were set up as programmed leaderless groups and given detailed instructions on the desired method of interaction. The importance of detailed instructions was pointed out in discussion of the Whalen (1969) study.

The Whalen study also emphasized modeling procedures. It was assumed that in the present study the subjects would have an opportunity to model the behavior of the individuals who were responding positively to the suggested mode of interaction, and therefore receiving the most reinforcements; however, there was no attempt to set up specific modeling procedures. The method used to accomplish the above goals will be discussed in the next chapter.

Hypothesis

It was hypothesized that reinforcement of pre-defined verbal categories would significantly increase the incidence of such verbal behavior in the experimental condition over that in the control condition where no reinforcement was administered.

CHAPTER II

METHOD

This study consisted of two conditions, experimental and control, in which subjects participated in one hour of verbal interaction. In the experimental condition the subjects were given instructions which detailed the pre-defined verbal categories that helped guide their interactions. Also, they were given feedback regarding their statements by means of counters and lights. A digital counter was on the table in front of each subject with the dial visible only to him. The counter made a loud click whenever the dial advanced and, together with the counter total, this served as a reinforcement by giving him information that he was responding in the desired manner. There was a red light attached to each counter. The lights were activated individually if a subject fell 10 points behind the person having the highest count and remained on until he was less than 10 points behind. All lights were flashed on and then off if a period of three minutes elapsed without a reinforceable statement being made. This informed the subjects that they were not interacting according to the categories. In the control condition, subjects were given similar instructions but no mechanical feedback.

Following the scheduled interaction, all subjects filled out a questionnaire (Appendix C) detailing their feelings and ideas regarding the experiment and their participation in it.

It was expected that the subjects in the experimental condition would verbalize more statements in the desired categories than those subjects in the control condition. There were three replications of the two conditions.

Subjects

Subjects were 24 undergraduate students who volunteered to participate in an interpersonal skills experiment for which they received extra course credit. The subject population included 11 male and 13 female Caucasians. Mean age was 21.6, range: 17-45 years. They were randomly assigned to the two conditions in groups of four subjects to each group. There were no all male or all female groups resulting from the random assignment, and sexes were fairly evenly distributed. Each group met only one time.

Instructions

Instructions were designed to enhance motivation of subjects as well as to inform them of the process. As stated in Chapter I, awareness of the contingencies involved enhances the learning process. In the pilot work for the present experiment, several of the subjects stated that they found the apparatus distracting. Whether these remarks were of a defensive nature or sincere criticism, it was decided to make reference to possible distraction of the equipment in order to forestall complaints of that nature.

Instructions for the experimental condition (Appendix A) included an informal statement regarding the nature of the experiment and the categories of interaction, with examples of statements that either fit

or did not fit each category. For example, Category 1 was, "Any verbal expression of your current feelings resulting from interaction with the group." An example of a statement that fit the category was, "I appreciate your interest." An example that did not fit was, "I feel great because I just aced an exam." It was then explained that the latter statement did not fit the category because it was produced by interaction outside of the group.

The apparatus was then explained so that subjects understood they would be given feedback on their program in using the categories by way of the counters and lights. The instructions also included information on the monitoring that would be done by the experimenter, tape recording, and confidentiality of the group sessions. In addition to the above instructions, each subject was supplied with a 5" x 7" index card on which the categories were typed so they could refer to them during the session if they wished (Appendix B). Instructions to the control group were identical except that information regarding the feedback mechanism was eliminated (Appendix A).

Procedure

Subjects were met by the experimenter in an antiroom immediately outside the experimental room. They were introduced and taken into the experimental room where they chose their own seats and the appropriate instructions were read to them. In the experimental condition the equipment was already in place, and subjects were allowed a few minutes to examine the equipment and asked to hold any questions until after the experiment was over.

Instructions were read by the experimenter who attempted to use

the same speech and manner in all groups. Following the scheduled interaction, which lasted for a period of 60 minutes, a questionnaire was distributed and filled out by each subject (Appendix C). After the questionnaires had been collected, subjects were debriefed, asked not to discuss the experiment with anyone, and thanked for their participation.

Apparatus

The experiment was conducted in two adjoining rooms. The experimental room for the subjects contained an oblong table around which four chairs were placed. One chair was placed at each end of the table and two were placed side by side facing a one-way observation mirror. This seating arrangement allowed the experimenter in the adjoining observation room to have a clear view of each subject. The subjects who faced the mirror sometimes made references to it early in the experiment but soon seemed to forget it, and it apparently did not affect their efforts to respond as requested.

The reinforcement apparatus in the experimental condition was:

1. A digital counter placed on the table in front of each subject. The counter made a loud click when the subject made a statement that fit the pre-defined categories. This served as a reinforcement in that it gave him the information that he had responded in the desired manner.

2. A red-light attached to each counter was activated under two conditions:

   A. All four lights flashed if a period of three minutes had elapsed with no reinforcement being administered.

B. If and when a subject fell 10 points behind the individual having the highest count, his light was turned on and remained on until he was less than 10 points behind the subject having the highest score.

3. Microphone, tables, and chairs were arranged for maximum viewing and audio pick-up from the adjoining observation room.

Apparatus in the observation room consisted of an electrical relay panel which enabled the experimenter to administer reinforcement by means of manual manipulation of the counters. Digital counters on the panel informed the experimenter of the number of reinforcements each subject had received. All interactions were tape recorded, and a graphic record of each reinforcement was kept by an event recorder.

An interval timer on the panel was automatically reset each time a reinforcement was administered. If and when a three-minute interval elapsed without reinforcement, all four lights flashed on automatically. All four lights could also be manipulated individually from the control panel. An electric timer was set for the 60 minute interval and a loud buzzer signaled the end of the hour.

Pre-defined Verbal Categories

Verbal response categories to be reinforced were chosen so that they included the expression of feelings, giving and asking for feedback on current behavior, and the use of empathic statements. These general areas were broken down into five specific categories which were operationally defined as follows:

1. Feeling - Any group member's verbal labeling of his own internal, subjective, affective state produced by interacting with other

group members or the present physical situation. Affective states are defined as those internal subjective states excluding cognition, conation, and perception. This definition excludes such statements that contain verbalizations like, "I think," "I feel obliged," "I hope," for example.

2. Seeking information from another group member regarding his feelings, as defined above in number 1.

3. Seeking information regarding one's own behavior in the current situation.

4. Statements made to another group member describing or labeling one's own perception of that group member's current behavior.

5. Empathy - any attempt to clarify, by means of verbal labeling, the expressed feeling states (as defined in number 1) of another individual in regard to what transpires in the current situation.

In the contextual sequence of interactions, only those statements that added new or additional information about the ongoing processes and accompanying subjective states were defined as reinforcements.

In addition, the current situation was defined as that time period beginning when the experimenter leaves the experimental room after having given the instructions to the group and ends after the group has interacted for a period of sixty minutes.

Scorer Reliability

A scorer reliability check was made to determine the ability of the person administering the reinforcements in the present study to score verbalizations according to the operationally defined categories.

The person administering the reinforcements in the present study

and another person, engaged in similar work, independently scored typed manuscripts according to the pre-defined verbal categories. These were manuscripts of dialogue from a previous experiment in which a group of four subjects had been requested to verbalize the expression of feelings, feedback, and empathy. Thus, the material scored was similar to what might be expected in the present study.

The method used was to divide the verbalizations into scorable and non-scorable units. Prior agreement was obtained with the other scorer as to how these units would be defined. A scorable unit was defined as a non-interrupted verbalization by any of the four subjects. In other words, a scorable unit consisted of complete statements ending with a pause. A non-scorable unit was defined as any interrupted or incomplete verbalization or any verbalization that was unclear, e.g., more than one subject talking at a time. Units were judged independently so that neither of the judges knew the results of the other. Results were then compared. Out of a total of 670 units judged, there were disagreements on 46 units, yielding a reliability of 93 per cent.

CHAPTER III

RESULTS

The hypothesis that reinforcement of pre-defined verbal categories would significantly increase the incidence of such verbal behavior in the experimental condition over that in the non-reinforcement, control condition was tested with a two-factor, fixed effects, treatments by replications analysis of variance. The hypothesis was confirmed with an F value of 17.55 ($p < .001$) for treatment effects. In addition, F values of .0728 for replications and .675 for interaction are less than unity and this indicates that the differences between groups and interaction are negligible. Results of the analysis are summarized in Table I.

TABLE I

ANALYSIS OF VARIANCE OF EFFECT OF VERBAL REINFORCEMENT

Source	SS	df	MS	F	p.
Replications	3.96	2	1.98	.0728	.....
Treatment	477.04	1	477.04	17.55	<.001
Interaction	36.71	2	18.35	.675	.....
Error	489.25	18	27.18	-	
Totals	1006.96	23	-	-	

Table II indicates the mean of reinforceable statements emitted by each subject in each group for the experimental and control conditions.

TABLE II

DISTRIBUTION OF MEAN REINFORCEABLE STATEMENTS PER SUBJECT

Condition	Group I	Group II	Group III	Totals
Control	0	.25	2.25	2.50
Experimental	10	11.50	7.75	29.25

It is evident from Table II that the number of reinforceable statements emitted in both the experimental and control conditions had very little variation across groups. In addition, the highest mean for the control condition was 2.25, while the lowest mean in the experimental condition was 7.75. The mean difference of 5.50 reinforceable statements would seem to indicate a psychological as well as statistically significant difference.

The questionnaire results indicated an overall positive reaction to the experiment. There was no significant difference in the responses of the control and experimental groups. Out of 132 possible responses in each condition, there were 20 negative and 96 positive responses for the control condition and 22 negative and 84 positive

responses for the experimental condition. The remaining responses were neutral (Appendix D). This would seem to indicate that subjects may have been reacting positively to the nature of the interaction exclusive of the conditioning process. As an example, the first question on the questionnaire was "Did you enjoy this experiment?" All 12 subjects in both conditions answered affirmatively.

The majority of negative responses centered on the ability to follow directions and express feelings. This is not surprising since the subjects were participating in a new experience and the verbalization of feelings is difficult in newly formed groups. There was no apparent correlation between negative responses to the questionnaire and the number of reinforceable statements emitted by the individual subjects.

CHAPTER IV

DISCUSSION

The results of this study indicate the feasibility of conditioning verbal responses of a therapeutic nature in a group setting, using college students as subjects. In the verbal conditioning study by Ullman, Krasner, and Collins (1961), discussed in Chapter I, the subjects were hospitalized patients, most of whom had been diagnosed as schizophrenic. Ullman pointed out that with highly verbal subjects, such as college students, verbal conditioning as a therapeutic technique might not be effective. The Hastorf study (1968) cast doubt on this assumption, and the present study showed that college students who were aware of the reinforcement contingency responded in a positive manner to the verbal conditioning process. It may not be verbal conditioning that is in question but the nature of the group interaction in which the verbal conditioning procedure is effected. The nature of the human relations orientation might have had a special appeal for college students; however, if this is the case, then matching the nature of the group interaction to the interests of the subjects might prove to be a powerful source of motivation.

The human relations type of interaction was chosen for this study precisely because it was thought that it might appeal to college students. Carl Rogers (1970) has stated that he believes the intensive group experience is the most rapidly spreading social invention of the

century and that it clearly expresses the needs of the people. The experience of the writer with both the subjects used in pre-planning stages of the experiment and those in the experiment itself leave little doubt as to the appeal of this type group for some college students, and the questionnaire would seem to bear this out. During the debriefing sessions, many of the subjects stated their interest in the experiment and their disappointment in not being able to continue in further group sessions. It might be that sessions over time would eliminate the difficulty in following instructions and verbalizing feelings.

Other factors that might have had a positive effect on the results of this study were the awareness of the subjects as to what was expected of them and clear instructions as to how to go about accomplishing more effective interaction. In Chapter I, the importance of the subject's awareness of the response-reinforcement contingency was discussed in relation to the Ullman, et al. (1961) study, where subjects were not aware of the purpose of the mechanical reinforcement apparatus. The results of the present study indicate a positive effect on conditioning of college students who were explicitly made aware of the correct response-reinforcement contingency. In addition, the nature of the categories allowed the subjects freedom to express themselves in their own way since it was particular affective categories that were being reinforced and not particular words or combinations of words.

The present design could be used in a training program to assist young people in gaining positive verbal interaction skills before they are having emotional difficulty. Thus, it may be viewed as a

preventative technique. In addition, it is believed that the present design could be manipulated so as to be useful for many therapeutic orientations and many types of patients on the mental health continuum. As an example, for patients with minimal verbal interaction, for whom it was desired to increase the incidence of verbalization, the reinforcement categories could be broadened and the counter totals might be exchanged for objects having more primary motivational interest.

The present study was designed for maximum use of paraprofessionals. One therapist could train and supervise several paraprofessionals, who in turn could be responsible for several groups each. Such paraprofessionals could be trained, not only to give the instructions and to handle the reinforcement process, but to be available for personal positive reinforcement in short post therapy sessions, similar to the debriefing session of the present experiment.

It was for the above reason that the programmed leaderless group was used in the present study. There is good evidence that leaderless groups have similar effects to those with leaders (Rogers, 1970) and they have become part of the standard method of team training in youth organizations, religious organizations, and in industry (Gibb, 1971). Programmed leaderless groups allow for professional direction without the necessity of a professional's presence and in addition, may facilitate peer modeling. A study where a trained peer model was used might be a subject for future research. It would also be interesting to discover whether the use of therapists in a group operating under the present design would enhance or confound the conditioning effects found in the present experiment.

The results of the present study raise the question of whether

the verbal response categories themselves are intrinsically reinforcing. There was no attempt in the present study to carry out the extinction process, since the conditioned verbal behavior was assumed to be helpful to the subjects and might generalize beyond the experimental situation. Future research might look at the intrinsic nature of the response categories, resistance to extinction, generalization of effects, and the therapeutic effect of such a process.

CHAPTER V

SUMMARY AND CONCLUSIONS

The need for new methods of reaching more people with effective psychotherapeutic techniques has been pointed out and relevant literature in the areas of human relations groups and verbal conditioning has been reviewed.

A method for conditioning verbal behaviors of a therapeutic nature in a group was presented and executed with significant results, indicating the feasibility of such an approach. Twenty-four undergraduate college students volunteered to serve as subjects and were randomly assigned, four to a group. There were two conditions, experimental and control, with three replications in each condition. The groups were patterned after programmed leaderless groups found in the human relations literature. In such groups, subjects meet without a leader or therapist and interact according to a program that is presented to them. In the present study, the program was in the form of instructions to use particular verbal categories that were considered to be therapeutic in nature. These verbal categories included the expression of feelings, giving and asking for feedback on current behavior, and the use of empathic statements.

In the experimental conditions, the categories were reinforced through the use of digital counters and lights, manipulated by the experimenter from an adjoining observation room. The apparatus served

the purpose of giving information to the subjects and therefore reinforced the desired responses.

The hypothesis that reinforcement of pre-defined verbal categories would significantly increase the incidence of such verbal behavior in the experimental condition over that in the control condition where no reinforcement was administered was confirmed with an F value of 17.55 ($p. < .001$) for treatment effects. The results of the experiment were discussed followed by a discussion of the questionnaire that was administered after the experiment.

Reasons for the significant results of the present study were discussed and suggestions for future research explored.

It has been demonstrated that verbal categories relevant to human problems can be reinforced in a group setting, and that such procedures appear methodologically simple enough to be carried out by paraprofessionals. This would make it possible to reach more people with effective psychotherapeutic techniques.

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APPENDIX A

INSTRUCTIONS

This experiment is designed to help you get to know each other on a personal basis. One way you can do this is by noting your feelings in the present situation and then sharing these feelings with the other group members. If your feelings are about another person's actions, tell him. If your feelings are good, chances are he will continue his behavior. If your feelings are bad, he may be willing to change. On the other hand, if others are not told of the effects of their behavior, they are not likely to change. The better you are able to specify what you like or dislike about the other person's actions, the more easily understood you will be. It is also a good idea to keep your expressions of feelings relevant to the current situation--the "here and now." In no way will either of you be able to change the past. Finally, you may attempt to give the other person empathy and understanding. This is perhaps the most valuable thing one person can give another. When you genuinely understand how the other person feels, he will naturally feel closer to you.

Some ways of expressing ourselves impair communication since they are open to debate. For example, do not make value judgments like, "What you just did is good or bad" or speculate about motives, such as, "You just say that because you're angry."

One way to avoid involvement is to spend time gathering

information about another person; for example, "What are you studying here at school?." "Where are you from?," or "How are you classified?" This is socially programmed use of time that we all have learned but it can hinder getting to know each other on a personal basis.

These five categories (at this time the experimenter points to cards in front of each subject on which the basic categories are outlined) are along the lines of what we've been talking about. They include ways of interacting that have been shown to be effective in establishing and maintaining close personal relationships. They are:

CATEGORY 1. Any verbal expression of your current feelings resulting from interaction with the group. An example that fits the category is, "I appreciate your interest." An example that does not fit is, "I feel great because I just aced an exam." This does not fit because it was produced by interaction outside the group.

CATEGORY 2. Seeking information from another group member regarding his feelings. An example of this would be, "How did you feel when she ignored your question?" An example that would not fit might be, "Have you ever felt that way before?" This refers to feelings outside the current situation and therefore does not fit the category.

CATEGORY 3. Seeking information regarding your own behavior. An example of this would be, "Does my persistence on this subject irritate you?" If you said, "Do people who talk a lot bother you?", this would not fit because it refers to people in general and not your specific behavior.

CATEGORY 4. Statements to another group member regarding your perception of his behavior. For example, "You're really making a contribution to this conversation." It wouldn't fit if you said, "He's

really coming on strong" because the statement was not made directly to the person whose behavior is in question.

CATEGORY 5. Any attempt to clarify the expressed feelings of another person. For example, "Are you saying you feel good now?" An example that does not fit this category would be a simple "Yeah, I agree." This doesn't fit because it does not clarify a feeling.

You will note that all interactions pertain to the current situation; the interactions that will take place in this room. In addition, they emphasize feelings rather than ideas. I am asking you to interact with each other for a period of sixty minutes, using these categories.

I will monitor this group discussion by way of the microphone and one-way mirror. Your conversation will be tape recorded and kept confidential. It will be used only in the analysis of the experiment and then erased.

FOR EXPERIMENTAL GROUPS ONLY

Whenever someone makes a statement that fits one of the categories, I will activate the counter which is in front of that person. The counter makes a loud click and this will give you the information that you are interacting according to the categories. The counter keeps a record of your total and if anyone falls too far behind, the red light on his counter will be turned on. This will indicate that either he is falling behind and may need assistance, or that someone may be dominating the conversation. If no click is heard for a period of three minutes, all lights will flash on. This will be a signal that the group as a whole is not using the categories.

I realize that this apparatus makes for an artificial situation but it is the least distracting method that I've found to give you information regarding your interactions without interrupting those interactions.

BOTH GROUPS

When I rap on the window of the observation room, that will be your signal to begin.

APPENDIX B

BASIC INSTRUCTION CARDS

CATEGORY 1. Any verbal expression of your current feelings resulting from interaction with the group.

CATEGORY 2. Seeking information from another group member regarding his feelings.

CATEGORY 3. Seeking information regarding your own behavior.

CATEGORY 4. Statements to another group member regarding your perception of his behavior.

CATEGORY 5. Any attempt to clarify the expressed feelings of another person.

HERE & NOW

APPENDIX C

QUESTIONNAIRE

NAME _____ AGE _____ SEX _____

CLASS _____ RACE (NATIONALITY) _____

	Definitely No	Moderately No	Neutral	Moderately Yes	Definitely Yes
1. Did you enjoy this experiment?	____	____	____	____	____
2. Was it easy for you to interact in this group?	____	____	____	____	____
3. Did you feel that this experience was worthwhile to you personally?	____	____	____	____	____
4. Were you able to follow the instructions?	____	____	____	____	____
5. Was the group as a whole able to follow the instructions?	____	____	____	____	____
6. Were you able to openly discuss your feelings?	____	____	____	____	____
7. Was the group as a whole able to openly discuss feelings?	____	____	____	____	____
8. Did you learn something about yourself?	____	____	____	____	____
9. Do you now feel closer to the other members of the group?	____	____	____	____	____

	Definitely No	Moderately No	Neutral	Moderately Yes	Definitely Yes
10. Did the group members generally seem concerned about each other?	____	____	____	____	____
11. Do you think this experience will help you in other situations?	____	____	____	____	____

APPENDIX D

RESPONSE FREQUENCY PER QUESTION FOR CONTROL AND EXPERIMENTAL GROUPS FOR INDIVIDUAL QUESTIONNAIRES

	Control					Experimental				
Question	Def No	Mod No	Neutral	Mod Yes	Def Yes	Def No	Mod No	Neutral	Mod Yes	Def Yes
1	0	0	0	5	7	0	0	0	6	6
2	0	0	2	6	4	1	1	1	8	1
3	0	0	2	4	6	1	0	2	5	4
4	2	4	2	4	0	0	1	7	4	0
5	2	4	1	5	0	0	4	5	3	0
6	0	2	1	5	4	1	2	1	7	1
7	0	2	0	5	5	0	3	3	5	1
8	1	2	4	2	3	2*	1*	1*	5*	2*
9	0	0	0	5	7	1	0	2	6	3
10	1	0	3	6	2	1	0	2	7	2
11	0	0	1	6	5	1	2	1	4	4

* One individual failed to answer this question.

VITA

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