

VERBAL OPERANT CONDITIONING AS A FUNCTION OF NEED FOR
SOCIAL APPROVAL AND CONNOTATIVE MEANING OF THE
STIMULUS MATERIAL

by

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ABSTRACT

One hundred and forty four college subjects were divided into twelve groups on the basis of the score on a measure of need for social approval (high and low) and a measure of connotative meaning of the concept 'hippie' (positive, negative, and neutral). By instituting two reinforcement conditions in a Taffel type of verbal conditioning task, these twelve groups of subjects were positively reinforced on a 100% reinforcement schedule, either congruently or incongruently with their initial meaning of hippie (2 x 2 x 3 factorial design). The reinforcing stimulus was the experimenter's saying "Good" or "Fine" for a negative or positive description of hippie, depending upon the reinforcement conditions.

It was hypothesized that subjects with a high need for social approval would show a greater conditioning performance than subjects with a low need for social approval. It was also hypothesized that subjects who received reinforcement congruently with their meaning of hippie would show a greater increase in the conditioning performance than subjects who received reinforcement incongruently with their meaning of hippie.

The data showed that there was no systematic difference in the conditioning performance between subjects with a high and low need for social approval as measured by the Marlowe-Crowne Social Desirability Scale. In addition, the need variable did not significantly interact either with the meaning, the reinforcement condition, or the block level of the conditioning trials. However, subjects who were reinforced congruently with their meaning of hippie showed significantly greater increase in the conditioning performance as compared to those who were reinforced incongruently with their meaning of hippie. In fact, subjects who received incongruent reinforcement failed to demonstrate any consistent changes in the rate of response emission during the conditioning period. Subjects with a neutral meaning of hippie showed a conditioning performance greater than the incongruently reinforced groups, but less than the congruently reinforced groups in both reinforcement conditions.

The results were interpreted as indicating the importance of the condition under which subjects receive reinforcement--congruent or incongruent reinforcement--in determining responsivity toward socially reinforcing stimuli.

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"Even a dog exposed for three years to a school vicinity can enjoy the beauties of nature by reciting poems on them" is an old Korean proverb. The investigator is not yet sure how well he can enjoy the beauties of behavioral science. He will just keep trying to find the beauties.

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D.Y.L.

Dedication

to my

father and mother

CHAPTER I

PROBLEM

Personality variables of a client and behaviors of the counselor have both been recognized as important factors in determining successful counseling yet inadequate research has been done on the very important interaction effect of these two facets. In line with Krasner's (1958) suggestion that the verbal operant conditioning paradigm may be a useful model for the analysis of the psychotherapy and/or counseling interview process, there have been a number of studies on the relationship between the motivational nature of the subject's (S's) need for social approval and the effectiveness of verbal conditioning in the counseling field. The general assumptions behind the studies in this area are that a verbally reinforcing stimulus given by the experimenter (E) is a form of social approval mediated by another person, and that the need for social approval is related to S's responsivity to this generalized reinforcer. Thus, in a psychotherapeutic or counseling interview setting, the client's behavior is determined in part by the interactional effect of the client's need for social approval and the interviewer's reinforcers.

While most of the investigations are limited to the experimental setting of verbal operant conditioning, several

investigators (Buckhout, 1965; Crowne & Strickland, 1961; Epstein, 1964; Marlowe, 1962; Marlowe, Beecher, Cook, & Doob, 1964) have reported that there is a positive relationship between differential conditionability and the need for social approval, whereas others (Cushing, 1957; Rosenthal, Kohn, Greenfield, & Carota, 1966; Spielberger, Berger, & Howard, 1963) have failed to confirm these findings.

Cushing (1957) in attempting to examine the relationship between conditionability and a measure of the need for social approval presented a series of 80 pictures to his Ss and had them rate the pictures as to how much they thought they would like or dislike the person. In his two experimental groups he reinforced either the like or dislike responses, but found a nonsignificant correlation between conditioning effect and approval need. He also obtained an interesting result: the like responses were effectively conditioned but the dislike responses were not conditioned. Crowne and Strickland (1961), using a variant of Greenspoon's word-generation method for college Ss, found that Ss whose need for social approval was relatively high tended to increase the relative frequency of the reinforced response class of plural nouns under a positive reinforcing stimulus, but these tended to decrease under a verbally punishing stimulus.

Although the verbal material employed in the Crowne and Strickland's study (plural nouns) was relatively meaningless to Ss, their findings were clearly confirmed by Marlowe (1962). Using a meaningful verbal interview setting for college Ss, Marlowe (1962) found that Ss highly motivated for social approval emitted more responses in the reinforced category of positive self-reference than Ss to whom social approval was of less importance. Another similar finding was obtained by employing a vicarious reinforcement situation in which S simply observed while E reinforced another S who was responding (Marlowe, Beecher, Cook, & Doob, 1964).

While the above three studies (Crowne & Strickland; Marlowe; Marlowe et al.) involved the reinforcement of relatively nonconflicted neutral verbal behavior, Epstein (1964) raised a question about the conditionability of verbal behavior whose contents were nonneutral. By giving a sentence-construction task to Ss, he found that Ss with a high need for social approval were more effectively conditioned to both hostile and neutral response classes than others, and showed significantly better conditioning performance in hostile verbal content than in a neutral one. Ss with a low need for approval showed no conditioning effect when they were reinforced for neutral verbs. He also found a puzzling phenomenon: many Ss did not show any significant conditioning effect even though they were able

to verbalize the correct response-reinforcement contingency. Another similar finding was reported by Buckhout (1965) who attempted to condition attitude toward television programming. By conditioning the verbalization of an attitude contradictory to S's previous attitude toward television programming, he observed that more approval-oriented S showed a greater conditioning to counter-attitudinal verbalization than less approval-oriented S.

Spielberger et al. (1963), in an attempt to test Dulany's (1961) reinforcement for association (RFA) hypothesis in connection with the findings of Crowne and Strickland (1961), found that only those Ss who were aware of correct response-reinforcement contingency gave conditioning evidence over trials, while unaware Ss were not conditioned no matter how intense their approval need. He also found a puzzling result: there was no significant relationship between Ss' need for social approval and their incentive to receive reinforcement as measured by a questionnaire. This finding was clearly confirmed by Rosenthal et al. (1966) who found that need for approval in their college Ss was unrelated to Ss' conditioning scores; they also observed that Ss higher in approval need were less likely to become aware of response-reinforcement contingency than Ss lower in approval need. Although the need for social approval was not the main focus of their study, the observation seems to complicate the relationship

at issue between need for social approval and verbal conditioning. That is, according to the findings of Rosenthal et al. (1966), it would be logically expected that Ss with high approval need would show a poor conditioning performance since they are less likely to be aware Ss: thus, this finding seems to contradict the bulk of the earlier studies (e.g., Spielberger et al., 1963) in which awareness of response-reinforcement contingency was positively correlated to conditioning performance.

While the reason for these inconsistencies among the studies discussed above may be attributed to E, S population, the interaction between S and E, and to the characteristics of the reinforcing stimuli, some questions that commonly appear in several studies should be indicated here to form a basis of the problem of the present study. They are: (1) why conditioning was obtained with some response classes but not with other response classes? (2) Why some Ss did not condition to hostile verbs even though they knew the correct response-reinforcement contingency?

With these theoretical questions in mind, it should be noted, first, that few references among the studies reviewed have been made to S's thought and/or meaning in explaining his verbal behavior. The conditioning task employed in the previous studies was either a variant of Taffel's (1955) sentence-construction method or a variant of Greenspoon's (1955) word-generation method. The properties

of Taffel type of verbal material as was used by Spielberger et al. (1963) and Rosenthal et al. (1966), and the properties of Greenspoon's type as was used by Crowne and Strickland (1961) are limited in that they seldom impose on Ss personally meaningful verbal responses (e.g., "I walked." "books"). Epstein (1964) and Marlowe (1962), however, did use verbal material which was more meaningful: the former reinforced neutral or hostile verbs, whereas the latter reinforced all positive self-references. Thus, when compared with the verbal material of Spielberger et al., Crowne and Strickland, and Rosenthal et al., it seems that both Epstein's and Marlowe's verbal materials were more personally meaningful to Ss. However, no investigations attempted to take into account how S's meaning or perception of the manipulable characteristics of the response class was related to the effectiveness of the verbally reinforcing stimulus. Only Buckhout's (1965) study was concerned with a conditioning of verbalized attitude toward television programming; however, all his Ss were pro television programming and his experimental design was merely to condition counterattitudinal verbalizations.

Recent studies, however, have demonstrated some empirical evidence that conditioning performance at least in part depends upon S's response set of the experimental task (e.g., Spielberger & DeNike, 1966), the nature of response class (e.g., Buss & Durkee, 1958), the impression value of

the stimulus word (e.g., Dixon, 1962; Dixon & Dixon, 1964), as well as S's preconditioning self-concept (e.g., Nuthmann, 1957). For example, Dixon (1962) found that S's differential perception of the verb as good or bad significantly influenced the effectiveness of the reinforcing stimulus. Nuthmann (1957), who successfully conditioned acceptance of self responses on a true-false personality test, observed large individual differences in the conditioning effect. Postulating a reason for this, she suggested:

As a result of a differential degree of past learning by the Ss of responses involving their self concept, it may take longer for reinforcing stimuli to bring about a measurable change in some Ss' behavior than in the behavior of others. That is, Ss who have responded, overtly or covertly, "I am worthless" hundreds of times may take longer to change this response than Ss who have thus responded only a few times [p. 22].

This may be because the experimental S may have had some preferred preexperimental response tendency or life-long reinforcement history with regard to the verbal response class, and thus brought to the experiment complex and highly differentiated repertoires already under the control of the experimental stimulus, which may have affected the responsivity toward reinforcing stimulus.

More recently, Insko and Cialdini (1969) and Cialdini and Insko (1969) proposed a two-factor or balance theory to account for attitudinal verbal reinforcement. According to this theory, one factor accounting for the reinforcement is to convey information as to E's attitude.

The second factor is to create positive rapport or liking which serves for motivating S to conform to the conveyed information as to E's attitude. Using attitudinal verbal conditioning situation, they found that only in the condition under which the direction of the reinforcement was consistent with E's social affiliation significant conditioning effects did occur (Cialdini & Insko, 1969).

However, the balance theory does not account for the nature of the difference between E's perceived functions of reinforcements and S's perceived functions of reinforcements in evaluating reinforcement events. In this regard, it seems worthwhile to pursue a question as to how S's preexperimental meaning of the stimulus material affects his responsivity toward reinforcement when E's conveyed information is held constant. In so doing, the use of meaningful materials and the control of the variability of S's perception and/or meaning of these materials by E insofar as possible would lead to a better understanding of verbal conditioning effects. Extending this idea even further, a question can be raised about the conditioning effects of high and low need for social approval S when the stimulus materials are presented in such a way as to relate S's meaning of the reinforced response class to his need for approval.

The primary purpose of the present study, therefore, was to investigate how the effectiveness of verbal

conditioning was influenced by S's meaning of the properties of reinforced verbal response classes in combination with need for social approval. Specifically, the present study aimed to answer the following questions: (1) Is the rate of emission of the reinforced response class significantly related to S's connotative meaning of the reinforced response class (i.e., stimulus material) and his need for social approval? (2) If so, which of the two variables is more responsible for the determination of the conditioning effect? The term meaning in the present study was restricted to the connotative meaning of a concept. Thus, by inquiring into S's meaning of reinforced response class, the present study at least in part attempted to explain the question that was raised earlier: why some Ss are more easily conditioned for some response class than others?

The way the stimulus material can be related to S's meaning of the reinforced response class may indicate the necessity for the consideration of the situation under which a reinforcing stimulus is delivered in a verbal conditioning situation. An S may be in an experimental situation where a very dominant preexperimental verbal behavior is given with a reinforcing stimulus; or he may be in a situation where a less dominant preexperimental verbal behavior is followed by reinforcing stimulus. If the creation of positive rapport or liking increases the responsivity toward reinforcing event, it may then be predicted that, an S who is reinforced for a

verbal response class which is not congruent with his connotative meaning of it will show poor conditioning performance because the nature of the reinforced response class is not congruent with his dominant preexperimental meaning that he associates with that response. In this situation, the difference between S's preexperimental conception of the reinforced response class and E's reinforcement contingency may create negative rapport or disliking which in turn decreases responsivity toward reinforcing stimulus. On the other hand, an S who is reinforced for a verbal response class whenever he responds congruently with his connotative meaning if it will show greater conditioning performance because the nature of the reinforced response class is congruent with his preexperimental meaning associated with that response. In this situation, the similarity between S's preexperimental conception of the reinforced response class and E's reinforcement contingency may create positive rapport or liking which in turn increases responsivity toward reinforcing stimulus.

If we combine this congruency-incongruency dimension with Crowne and Strickland's (1961) hypothesis that S's need for social approval is positively related to the effectiveness of verbal conditioning, it may be predicted that need for social approval and congruency and incongruency of S's meaning of the response class may play

an important role in determining the effectiveness of verbal conditioning. On the basis of this, following hypotheses can be formulated.

Hypothesis I

Ss with a high need for social approval show a higher rate of emission of the reinforced response class than Ss with a low need for social approval.

Hypothesis II

Given a certain level of need for social approval, Ss who are positively reinforced for the verbal response class which is congruent with their connotative meaning of it show a higher rate of emission of the reinforced response class than Ss who are positively reinforced for the verbal response class which is not congruent with their meaning of it.

The implication of this research question to counseling interview seems clear. As suggested by Hildum and Brown (1956), an interviewer in an interview situation is more likely to reinforce his client's verbal behavior with reference to a line of thought or attitude as expressed by the client. A counselor seen as a "behavior engineer [Michael & Meyerson, 1962, p. 400]" or as a "social reinforcement machine [Krasner, 1961]" must selectively reinforce the verbal response class of his client which appears significant to him and/or to his client. Considering

the desirable role of the counselor along this line, a counselor must be sensitive to his client's preinterview meaning of the verbal content for which he is received reinforcing events.

CHAPTER II

METHOD

For the test of the two hypotheses, the verbal conditioning situation employed was the one in which S's meaning of the stimulus material could be easily controlled, and the condition of reinforcement--congruent and incongruent with S's meaning of the reinforced response class--could be measured. For this reason, a sentence-construction type of verbal conditioning situation was employed, since it had some additional merit in that discrete trials yield better control of the reinforcing stimulus given by E. Any verbalization of S that described a concept 'hippie' with positive and negative verbs within the limit of the experimental task comprised the reinforced response class. The reinforcing stimulus was E's saying "good" or "fine" in randomized order in approximately equal proportions.

Subjects

Ss were 144 undergraduates, predominantly freshmen, enrolled in a large introductory psychology class at the University of British Columbia, during the academic year of 1968-69. Ss consisted of those who volunteered to participate for an experiment on 'human verbal behavior.' Of 144, 64 were males and 80 were females. Their age ranged

from 16 years and 3 months to 33 years and 3 months with a median age of 18 years and 5 months at the time this study was conducted. All Ss were naive as to the experimental problem and procedures.

Apparatus

The stimulus cards were 120 3- by 5-inches white index cards. In the upper half of each card, three past tense verbs with different meanings were typed in randomized order: one negative, one positive, and one neutral verb. Below the three verbs were typed two person-concepts, 'hippie' and 'policeman,' in capital letters in randomized order.

The verbs on each card were selected from Thorndike-Lorge's (1944) word-count, and, on each card, they were matched in terms of the frequency of usage. The following procedures were used to determine the frequency of usage and the meaning of each verb: (1) A total of 711 verbs which were reported by Thorndike and Lorge (1944) as words occurring at least once per million in general were selected. (2) These 711 verbs were given to eight graduate students in counseling psychology who were working toward a Master's or Doctoral degree in the University of British Columbia, and they were asked to classify the verbs either into positive, negative, or neutral meaning verbs. A total of 480 verbs which were agreed upon by five or more raters

as to be classified into one of the three categories (positive, neutral, and negative) were selected. (3) These 480 verbs were again randomized in order and then were given to a total of 45 sophomore students (males and females). They were asked to rate the meaning of the verbs on a 9-point rating scale, assigning from 1 to 7, with 7 being the most positive rating for each word. (4) On the basis of the mean score for each verb, the verbs were classified into negative verbs (1.98-4.49), neutral verbs (4.53-5.89), and positive verbs (5.95-6.89). Within each level of meaning, the verbs were again grouped into three levels of frequency of usage (1-9, 10-19, 20-29, 30-39, 40-49, A, AA) according to Thorndike and Lorge (1944). Thus, within each combination of mean value and the level of frequency of usage, the verbs were randomly selected for each card. However, following exceptions were made: (1) when the two verbs in a single card were straightforwardly contradictory in meaning (e.g., loved-hated), they were avoided in the same card; (2) the verbs whose meaning were extremely positive or extremely negative were excluded from final use. This was done to decrease the cue value of the words as a discriminative stimulus for Ss.

Measurement Procedures

S's connotative meaning of hippie. A Semantic Differential Scale (SDS) to measure the connotative meaning

of hippie was constructed and was given in groups which contained the sample of Ss (See Appendix A). The SDS contained 15 evaluative, 4 activity, and 6 potency factors, which were drawn from Osgood, Suci, and Tannenbaum (1957). These 25 scales were refined through a preliminary study and have demonstrated considerably high correlation coefficients with the total score (range from .70 to .84 with median correlation coefficient of .73). However, in actual selection of Ss for the conditioning experiment, only evaluative factor scales were used; the activity and potency factor scales were inserted nevertheless to prevent the response set of Ss in taking the SDS.

The response format of the SDS in this study was a 7-point bipolar scale, which asked the testees to assign from 1 for negative to 7 for the positive continuum. The order of the placement of the scales as well as the polarity of each scale for the concept hippie were randomized, and the standard instruction (Osgood, Suci, & Tannenbaum, 1957) was used. The individual SDS score included the 15 evaluative factor scales; thus, the score for an individual could range from 15 to 105.

Need for social approval. Need for social approval was defined as the tendency to say socially appropriate things and act in a socially appropriate way to obtain approval. In the present study, this was operationally

defined by the score on the Marlowe-Crowne Social Desirability Scale (MCS). This is an inventory with two dichotomous response categories, containing 33 items to measure the need for social approval (See Appendix B). The score of an individual could range from 1 to 33. An illustrative item of the scale is: "I have never intensely disliked anyone [Item 4]." The internal consistency coefficient for this scale using Kuder-Richardson formula 20 and based upon 39 undergraduate students was .88, and a test-retest correlation coefficient with one month interval based upon 31 students was .89 (Crowne & Marlowe, 1960).

Experimental Design

Ss were measured for their need for social approval and meaning of hippie prior to the verbal conditioning experiment. They were divided into two categories (high and low) of the need for social approval and three categories (positive, negative, and neutral) of the meaning of hippie. These Ss received two different reinforcement treatment conditions--reinforcement for positive description of hippie (RPD) and reinforcement for negative description of hippie (RND). Under RPD, E's reinforcing event was delivered at the end of any sentence using the word hippie and one of the positive verbs; under RND, E's reinforcing event was delivered at the end of any sentence using the word hippie and one of the negative verbs. Thus, the nature of the

difference between S's preexperimental connotative meaning of hippie and the reinforcement condition he is assigned generated congruent and incongruent reinforcement. For example, if an S showed a positive meaning of hippie in SDS and received the treatment condition of RPD, he was classified as a congruently reinforced S, since his meaning of hippie was consistent with the reinforced response class in the reinforcement condition; however, if he received the treatment condition of RND, he was classified as an incongruently reinforced S, since his meaning of hippie was not congruent with the reinforced response class in the reinforcement condition.

Specifically, the following groups were instituted for the selection and assignment for the reinforcement conditions.

Group H-Po: Ss high on MCS (above median score) with a positive meaning in SDS (greater than 64).

Group H-Ne: Ss high on MCS (above median score) with a negative meaning in SDS (less than 55).

Group H-Nu: Ss high on MCS (above median score) with a neutral meaning in SDS (55-64 inclusive).

Group L-Po: Ss low on MCS (below median score) with a positive meaning in SDS (greater than 64).

Group L-Ne: Ss low on MCS (below median score) with a negative meaning in SDS (less than 55).

Group L-Nu: Ss low on MCS (below median score) with a neutral meaning in SDS (55-64 inclusive).

For actual assignment of Ss for the treatment conditions, however, the scores were divided into several blocks for both MCS (1-6; 7-13; 14-20; 21-28) and SDS (15-44; 45-54; 55-64; 65-74; 75-95), and within each level of MCS-SDS combination, Ss were randomly assigned in equal numbers to two different experimental treatments, i.e., RPD and RND. Thus, the combinations of the two levels of the need for social approval, three categories of meaning of hippie, and two treatment conditions generated a 2 x 2 x 3 factorial design.

Procedure

The MCS and SDS were administered to the same Ss group in a single testing session. In order to eliminate order effect, they were counterbalanced in approximately equal proportions. The two scales were administered by a Master's candidate (male) in school psychology who has had previous experiences in group psychological testing.

Within 7 to 97 days after the administration of the pretests (MCS and SDS), the main verbal conditioning experiment was conducted by this investigator. Students were asked to volunteer to participate in an experiment on 'human verbal behavior,' and a sign-up sheet was distributed in the class throughout the experimental period. E met S

individually. E always introduced himself as a graduate student working on a doctoral dissertation. E was always attired in a suit and tie. The experimental space was an empty room except for a desk and two chairs. On the desk, a 12- by 16-inches paper-board shield was erected between E and S so that during the conditioning proper, S could observe E's face but not his recording behavior. After a brief conversational interview asking about S's year in college, major, and vocational aspiration, S was given the stimulus cards one at a time in same order and then was requested to make up a sentence beginning with one of the two person concepts and one of the three verbs. The instruction (See Appendix C) was a slight modification of the one used by Spielberger and Levin (1962). The reason two person-concepts appeared in each stimulus card instead of the concept 'hippie' alone was to make S's response-reinforcement contingency more complex. The advantage of this was demonstrated by a pilot study.

A total of 120 trials were run for every S, where each response to each card was defined as a trial. To determine the free operant level of responding with the reinforced response class, no E's reinforcing stimulus was given during the first 20 trials. From the 21st trial, S was positively reinforced on a 100% reinforcement schedule: E's reinforcing stimulus "good" or "fine" was given

continuously when S emitted a verbal response that belonged to the reinforced response category (depending upon the reinforcement treatment condition).

Immediately following the conditioning trials, a postconditioning testing session was instituted to elicit information regarding S's awareness of the response-reinforcement contingency. Information was also gathered concerning the incentive to receive reinforcement: that is, a measure of how much S really wanted E's approval. The content of this awareness testing questionnaire and the measure of his incentive to receive reinforcement was a shortened form of the one used by Spielberger (1962) and Spielberger et al. (1963), but with slight modification in wording to fit into the present study (See Appendix D). This postexperimental questionnaire was given by this investigator immediately after the conditioning proper. The written response to this questionnaire was independently scored by two raters including E. Another rater was a female with a graduate training in educational psychology. Since E scored the questionnaire responses after gathering all data for the 144 Ss, it may be safely assumed that both E and the female rater had no prior knowledge of S's performance in the conditioning trials.

Following the postconditioning testing session, E urged S not to communicate about the nature of the

experiment to fellow students.

CHAPTER III

RESULTS

Analysis of the Conditioning Response Data

The number of Ss gathered for the two experimental reinforcement conditions are shown in Table 1.

TABLE 1

THE NUMBER OF SUBJECTS FOR THE TWO EXPERIMENTAL
TREATMENTS BASED ON A 2 x 2 x 3 FACTORIAL DESIGN

| | | RPD | | | RND | | | |
|-------|-----|-----|----|----|-----|----|----|-------|
| MCS | SDS | Po | Nu | Ne | Po | Nu | Ne | Total |
| | | | | | | | | |
| High | | 12 | 12 | 12 | 12 | 12 | 12 | 72 |
| Low | | 12 | 12 | 12 | 12 | 12 | 12 | 72 |
| Total | | 24 | 24 | 24 | 24 | 24 | 24 | 144 |

Note.--Abbreviations: RPD=Reinforcement for positive description of hippie, RND=Reinforcement for negative description of hippie; Po=Positive meaning of hippie, Nu=Neutral meaning of hippie, Ne=Negative meaning of hippie; MCS=Marlowe-Crowne Social Desirability Scale; SDS=Semantic Differential Scale.

The reinforced response class emitted by S was observed as the response measure in the present study. Operationally, this was the frequency of occurrence of a sentence using the word 'hippie' and one of the positive or

negative verbs, depending upon the reinforcement condition.

A response to each card in a sentence was defined as a trial. For the statistical analysis of the data, trials from the first to the last were divided into six blocks of 20 trials each: block 1 (trial 1-20), block 2 (trial 21-40), block 3 (trial 41-60), block 4 (trial 61-80), block 5 (trial 81-100), and block 6 (trial 101-120).

The mean frequency of the reinforced response class for the six trial blocks for the 12 groups is presented in Table 2. Prior to the main analysis of the data, departure from homogeneity of variances for the total blocks of the conditioning trials among the 12 groups was tested by Cochran's method (Myers, 1966), and the null hypothesis that population variances of the 12 independent groups would be equal was not rejected (observed $C=.184$; $df=12/11$; $p>.05$).

Since the test of initial differences among the 12 independent groups in terms of operant performance level using Scheffe's multiple comparison method (Myers, 1966) showed no significant differences ($df=11/660$; $p's>.10$) in the operant rate among the groups, an analysis of variance was performed in a repeated measure design to determine the main effect of the need for social approval (need), connotative meaning of hippie (meaning), and the interaction effect between need and meaning. The results of the analysis are presented in Table 3.

TABLE 2

MEAN FREQUENCY OF THE REINFORCED RESPONSE CLASS IN EACH
BLOCK OF CONDITIONING TRIALS FOR THE 12 GROUPS

| Reinforcement for positive description of hippie | | | | | | |
|--|---------|---------|---------|---------|---------|---------|
| Group | block 1 | block 2 | block 3 | block 4 | block 5 | block 6 |
| | Mean | Mean | Mean | Mean | Mean | Mean |
| H-Po | 5.75 | 4.50 | 5.58 | 6.75 | 6.00 | 6.00 |
| H-Nu | 4.67 | 3.17 | 4.25 | 4.42 | 5.25 | 3.75 |
| H-Ne | 3.83 | 3.17 | 3.25 | 4.67 | 3.75 | 3.83 |
| L-Po | 5.00 | 5.33 | 6.42 | 6.83 | 8.33 | 8.25 |
| L-Nu | 3.92 | 3.67 | 5.08 | 6.00 | 6.33 | 5.75 |
| L-Ne | 3.92 | 1.83 | 3.58 | 3.17 | 4.08 | 3.00 |
| Reinforcement for negative description of hippie | | | | | | |
| H-Po | 3.58 | 3.33 | 3.58 | 4.00 | 3.92 | 3.83 |
| H-Nu | 4.17 | 4.58 | 3.83 | 6.58 | 6.50 | 6.67 |
| H-Ne | 4.67 | 4.42 | 6.50 | 8.50 | 8.33 | 8.25 |
| L-Po | 4.75 | 2.75 | 4.17 | 5.25 | 4.58 | 5.50 |
| L-Nu | 4.50 | 4.75 | 5.75 | 7.25 | 5.92 | 8.75 |
| L-Ne | 5.33 | 6.08 | 6.25 | 9.50 | 7.33 | 9.58 |

Note.-- $MS_b=33.83$; $MS_e=4.80$. Abbreviations: H=group with a high need for approval, L=group with a low need for approval; Po=group with a positive meaning of hippie, Nu=group with a neutral meaning of hippie, Ne=group with a negative meaning of hippie.

TABLE 3

ANALYSIS OF VARIANCE ON THE MEAN FREQUENCY OF THE
REINFORCED RESPONSE CLASS

| ===== | | | |
|-------------------------|------------|-----------|-------------------|
| Source | <u>df</u> | <u>MS</u> | observed <u>F</u> |
| <hr/> | | | |
| Between <u>Ss</u> | <u>143</u> | | |
| T (Reinforcement) | 1 | 151.67 | 4.48* |
| M (Connotative meaning) | 2 | 1.01 | <1 |
| N (Need) | 1 | 71.19 | 2.10 |
| T x M | 2 | 584.09 | 17.26** |
| T x N | 1 | 3.89 | <1 |
| M x N | 2 | 15.34 | <1 |
| T x M x N | 2 | 8.37 | <1 |
| Subjects (T x M x N) | 132 | 33.83 | |
| Within <u>Ss</u> | <u>720</u> | | |
| B (Block of 20 trials) | 5 | 118.95 | 24.78** |
| T x B | 5 | 21.53 | 4.48** |
| M x B | 10 | 2.38 | <1 |
| N x B | 5 | 7.76 | 1.62 |
| T x M x B | 10 | 14.65 | 3.05** |
| T x N x B | 5 | 8.54 | 1.78 |
| M x N x B | 10 | 3.98 | <1 |
| T x M x N x B | 10 | 5.28 | 1.10 |
| Subjects x B | 660 | 4.80 | |
| Total | 863 | | |
| <hr/> | | | |

*p<.05

**p<.01

As can be seen from the data shown in Table 3, there was a significant differential reinforcement effect ($F=4.48$; $df=1/132$; $p<.05$) between the groups which received reinforcement for positive description of hippie (RPD) and the groups which received reinforcement for negative description of hippie (RND). However, both reinforcement conditions showed a significant departure from a zero slope, i.e., block effect. When trend analyses were performed to test the significance of linear, quadratic, or other higher order components, significant linear ($F=19.63$; $df=1/660$; $p<.01$) and cubic ($F=15.47$; $df=1/660$; $p<.01$) trends were obtained for the groups under RPD, while for the groups under RND, only the linear trend ($F=87.02$; $df=1/660$; $p<.01$) was significant. It was clear that, across the treatment conditions, change in the frequency of using reinforced response class occurred in the course of the experiment; however, the groups under RPD changed with a tendency to decrease in the frequency of using the reinforced response class during the second block of trials and then steadily increase until block 5. Figure 1 shows the trends.

Need for approval and conditioning performance.

In hypothesis I, it was predicted that Ss with a high need for social approval show a greater conditioning effect than Ss with a low need for social approval across the experimental conditions. However, an inspection of Table 3

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data was mainly devoted to the difference in the conditioning performance between congruently reinforced groups and incongruently reinforced groups disregarding S's need variable.

Effect of congruent and incongruent reinforcement.

In hypothesis II, it was predicted that, given a certain level of need for social approval, Ss who were reinforced congruently with their meaning of the reinforced response class (congruent reinforcement) show a greater conditioning performance than Ss who were incongruently reinforced with their meaning of the reinforced response class (incongruent reinforcement). Results of the analysis of variance shown in Table 3 revealed nonsignificant effect of Meaning ($F < 1$; $df = 2/132$), Meaning x Block ($F < 1$; $df = 10/660$), Meaning x Need x Block ($F < 1$; $df = 10/660$), Treatment x Meaning x Need x Block ($F = 1.10$; $df = 10/660$; $p > .05$); however, there were significant interaction effects between Treatment x Meaning ($F = 17.26$; $df = 2/132$; $p < .01$) and Treatment x Meaning x Block ($F = 3.05$; $df = 10/660$; $p < .01$).

For specific comparison for hypothesis II, a statistical prediction was that among the groups under RPD, mean of the conditioning performance of the group with a positive meaning of hippie would be greater than that of the group with a negative meaning of hippie. Among the groups under RND, on the other hand, mean of the conditioning

performance of the group with a negative meaning of hippie would be greater than that of the group with a positive meaning of hippie. Figure 2 represents the curves of the conditioning performance of the groups under RPD and RND.

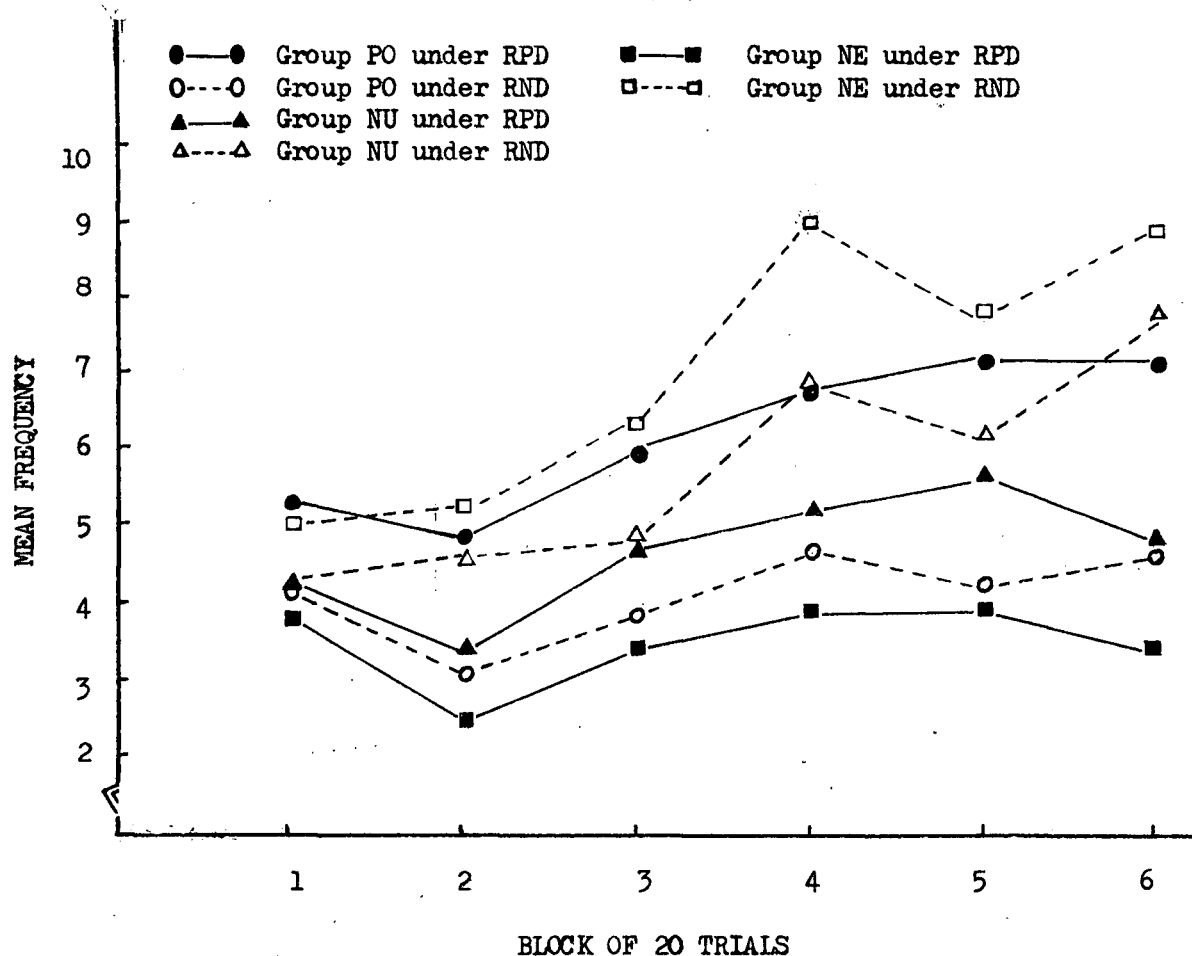


FIG. 2. Conditioning Performance of the Group with a Positive, Negative, and a Neutral Meaning of Hippie who Received Reinforcement for Positive and Negative Description of Hippie.

Table 4 specifically compares the mean frequency of each block between the group with a positive and negative meaning of hippie within each reinforcement condition. Scheffe's multiple comparison method (Myers, 1966) showed that the data were consistent with the prediction. That is, of the groups under RPD, the group with a positive meaning

TABLE 4

COMPARISON OF MEAN FREQUENCY IN EACH BLOCK OF CONDITIONING TRIALS BETWEEN CONGRUENTLY REINFORCED AND INCONGRUENTLY REINFORCED GROUPS WITHIN EACH REINFORCEMENT CONDITION

| Group | Reinforcement for positive description | | | | | |
|-----------------------|--|---------|---------|---------|---------|---------|
| | block-1 | block-2 | block-3 | block-4 | block-5 | block-6 |
| Positive ^a | 5.38 | 4.92* | 6.00* | 6.79* | 7.17* | 7.13* |
| Negative | 3.88 | 2.50 | 3.42 | 3.92 | 3.92 | 3.42 |
| Neutral | 4.29 | 3.42 | 4.67 | 5.21 | 5.79 | 4.75 |
| Group | Reinforcement for negative description | | | | | |
| | block-1 | block-2 | block-3 | block-4 | block-5 | block-6 |
| Positive | 4.17 | 3.04 | 3.88 | 4.63 | 4.25 | 4.67 |
| Negative ^b | 5.00 | 5.25* | 6.38* | 9.00* | 7.83* | 8.92* |
| Neutral | 4.33 | 4.67 | 4.79 | 6.92 | 6.21 | 7.71 |

^aComparison with negative meaning group

^bComparison with positive meaning group

* $p < .05$

of hippie showed significantly greater mean scores in most blocks of conditioning trials ($p's < .05$) than the group with a negative meaning of hippie; while, of the groups under RND, the group with a negative meaning of hippie showed greater mean scores in most blocks of conditioning trials than the group with a positive meaning of hippie. In fact, the groups which received incongruent reinforcement, i.e., the group with a negative meaning of hippie under RPD ($F < 1$; $df = 1/660$) and the group with a positive meaning of hippie under RND ($F = 3.38$; $df = 1/660$; $p > .05$) showed zero slope of the conditioning performance curves over trial blocks, indicating that there was no significant increase in the conditioning performance under the incongruently reinforced conditions.

Further inspection of the effect of congruent and incongruent reinforcement condition may be obtained by comparing the conditioning performance of the groups which had a similar meaning of hippie but received a different reinforcement treatment. That is, it would be predicted that, among the groups with a positive meaning of hippie, the conditioning performance of the groups which received RPD would be greater than that of the group which received RND; of the groups with a negative meaning of hippie, on the other hand, the conditioning performance of the group under RND would be greater than that of the group under RPD. Table 5 specifically compares the mean frequencies of each

block of trials between the groups which received different treatment within each positive, negative, and neutral

TABLE 5

COMPARISON OF MEAN FREQUENCY IN EACH BLOCK OF CONDITIONING TRIALS BETWEEN GROUPS WHO RECEIVED DIFFERENT REINFORCEMENT CONDITIONS WITHIN POSITIVE, NEGATIVE, AND NEUTRAL MEANING OF HIPPIE

| Treatment Condition | Positive meaning group | | | | | |
|------------------------|------------------------|---------|---------|---------|---------|---------|
| | block-1 | block-2 | block-3 | block-4 | block-5 | block-6 |
| RPD ^a | 5.38 | 4.92 | 6.00* | 6.79* | 7.17* | 7.13* |
| RND | 4.17 | 3.04 | 3.88 | 4.63 | 4.25 | 4.67 |
| Negative meaning group | | | | | | |
| RPD | 3.88 | 2.50 | 3.42 | 3.92 | 3.92 | 3.42 |
| RND ^b | 5.00 | 5.25* | 6.38* | 9.00* | 7.83* | 8.92* |
| Neutral meaning group | | | | | | |
| RPD | 4.29 | 3.42 | 4.67 | 5.21 | 5.79 | 4.75 |
| RND ^c | 4.33 | 4.67 | 4.79 | 6.92 | 6.21 | 7.71* |

Note.--Abbreviations: RPD=Reinforcement for positive description of hippie; RND=Reinforcement for negative description of hippie.

^aComparison with RND

^bComparison with RPD

^cComparison with RPD

* $p < .05$

meaning groups. The Scheffe's multiple comparison method (Myers, 1966) showed that, of the groups with a positive meaning, the mean scores of the group under RPD were significantly greater ($p's < .05$) than the group under RND in most blocks of trials; whereas, of the groups with a negative meaning, the group under RND showed greater mean scores in most blocks of trials than the group under RPD. Thus, when a pooled comparison of the conditioning performance is made between the congruently reinforced and incongruently reinforced groups regardless of both reinforcement condition they received and the meaning of hippie, it is clear that difference in the conditioning performance between the congruently reinforced and incongruently reinforced groups increases, with a greater conditioning effect in the congruently reinforced than the incongruently reinforced groups.

It would be necessary to compare the conditioning performance of the group with a neutral meaning with that of the positive and negative groups in order to have a stringent test of the hypothesis. Since the groups with a neutral meaning of hippie were reinforced in a small degree of incongruency in each reinforcement condition, it was predicted that the conditioning performance of these neutral groups should be greater than the incongruently reinforced group but less than the congruently reinforced group in both

treatment conditions. As can be seen from Figure 2, the data were clearly consistent with the prediction. That is, the magnitudes of the conditioning performance of the groups with a neutral meaning of hippie, i.e., the groups which received a small degree of incongruent reinforcement, were in between the congruently reinforced and incongruently reinforced groups under both reinforcement conditions. However, it was interesting to note that, of the groups with a neutral meaning of hippie, the group under RND showed a significantly greater conditioning performance than the group under RPD.

The trends among the group regression curves in each treatment condition were also interesting. None of the curves under RND showed a significant quadratic or any other higher order trends (p 's $> .05$) but a significant linear trends for the group with a negative ($F=64.11$; $df=1/660$; $p<.01$) and a neutral ($F=39.87$; $df=1/660$; $p<.01$) meaning of hippie. Of the groups under RPD, on the other hand, there were significant linear trend ($F=18.96$; $df=1/660$; $p<.01$) in the group with a positive meaning of hippie, a significant linear ($F=7.08$; $df=1/660$; $p<.01$) and cubic trend ($F=7.56$; $df=1/660$; $p<.01$) in the group with a neutral meaning, and only a significant cubic trend ($F=5.61$; $df=1/660$; $p<.025$) in the group with a negative meaning of hippie. However, none of the groups in both RPD and RND showed any significant quadratic trend.

It should be noted that the conditioning performance curves tended to show more similar patterns among the groups which received the same reinforcement condition than among the groups with a similar meaning of hippie. As can be seen from Figure 2, the groups under RPD showed a slight decrease in the conditioning performance in block 2, gradual increase up to the peak conditioning period of block 5, and a slight decrease in the final block; of the groups under RND, however, only the group with a positive meaning of hippie tended to show a slight decrease in block 2, while the remaining two groups did not. Instead, all the experimental groups under RND showed the highest conditioning performance in block 4, decreasing in block 5, and then rapidly increasing in the final block.

Analysis of the Questionnaire Data

Awareness and conditioning performance. The awareness was defined by S's ability to give written response to four questions asking various kinds of relationships between his responses and the reinforcing stimulus employed. The level of awareness was classified into three categories: Aware Ss were those who recorded somewhere in their notes the response-reinforcement contingency correctly (one which would yield essentially 100% reinforcement if acted upon consistently). Unaware Ss were those who did not show any indication of knowing the

response-reinforcement contingency in any of the four questions. Correlated-aware Ss were those who could not be classified either as aware or unaware Ss, i.e., those who recorded in their notes any awareness other than the correct response class that could account for better than chance performance.

Two raters assigned 1 for unaware, 2 for correlated-aware, and 3 for aware Ss. They were considered to be in agreement with respect to a particular S if they both classified him as an aware, unaware, or correlated-aware S. The percentage of Ss on whom the two raters initially agreed was 86%: that is, of the 144 Ss, there were 124 Ss for whom two raters completely agreed. The questionnaire responses of 20 Ss for whom there was no agreement between the two raters were submitted for open discussion between the two raters and categorized. By this process, 55 Ss were ultimately judged aware, 42 unaware, and 47 correlated-aware. Since the initial percentage of the agreement between the two raters were relatively high, it was concluded that the reliability of the awareness rating was satisfactory.

Pearson product-moment correlation coefficients were calculated to determine the correlation between the level of awareness and performance level in each trial block assuming that the level of awareness was continuous. Table 6 shows the correlational matrix among the variables. There were significant positive correlation coefficients (range from

TABLE 6

CORRELATION COEFFICIENTS AMONG THE VARIABLES OF NEED, MEANING, AWARENESS, INCENTIVE TO RECEIVE REINFORCEMENT, AND CONDITIONING PERFORMANCE IN EACH BLOCK OF TRIALS

| | Mea | Awa | Inc | B-1 | B-2 | B-3 | B-4 | B-5 | B-6 | B-T |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Need | -05 | 05 | 14 | -05 | -07 | -07 | 00 | -05 | -16 | -08 |
| Mea | | 02 | -15 | 10 | 01 | 00 | -05 | 00 | -03 | -02 |
| Awa | | | 09 | 23* | 21 | 33* | 41* | 45* | 41* | 44* |
| Inc | | | | 11 | 16 | 19 | 26* | 26* | 31* | 29* |
| B-1 | | | | | 33* | 30* | 35* | 37* | 31* | 39* |
| B-2 | | | | | | 59* | 64* | 54* | 63* | 76* |
| B-3 | | | | | | | 64* | 54* | 61* | 77* |
| B-4 | | | | | | | | 74* | 81* | 91* |
| B-5 | | | | | | | | | 78* | 87* |
| B-6 | | | | | | | | | | 92* |

Note.--Decimal points omitted. Abbreviations: Mea=meaning; Awa=awareness; Inc=incentive; B=block; B-T= block total.

* $p < .05$

.21 to .45) between the level of awareness and each block of the conditioning trials; however, only 19.4% of the total conditioning variable was accounted for by the awareness variable. There were slight tendencies that the sizes of correlation coefficients increase as the conditioning trials increase. In the multiple regression analysis, as shown in Table 7, awareness was the variable that had the greatest

predictability among other variables in accounting for the conditioning performance.

TABLE 7

MULTIPLE REGRESSION ANALYSIS USING AWARENESS, INCENTIVE TO RECEIVE REINFORCEMENT, NEED FOR APPROVAL, AND MEANING OF HIPPIE AS PREDICTOR VARIABLES AND TOTAL CONDITIONING PERFORMANCE AS CRITERION VARIABLE

| Predictor variable | <u>R</u> | <u>RSQ</u> | Increase in <u>RSQ</u> |
|--------------------|----------|------------|------------------------|
| Awareness | .442 | .195 | .1952 |
| Incentive | .507 | .257 | .0616 |
| Need | .526 | .277 | .0201 |
| Meaning | .535 | .286 | .0001 |

Incentive to receive reinforcement. Incentive to receive reinforcement was defined as S's written response to a question, "Would you say you wanted me to say 'good' or 'fine' more often?" The question provided three levels of categories from which S was asked to choose: "very much," "often," and "did not care." There were 17 Ss in "very much" category, 64 Ss in "often," and 63 Ss in "did not care" category. Following numbers were assigned for S's response to the question: 3 for "very much," 2 for "often," and 1 for "did not care." As can be seen from Table 6, there were significant positive correlations between the level of incentive to receive reinforcement and most of the

conditioning trial blocks (range from .16 to .31). However, the sizes of coefficients were negligible: only 9.6% of variance of the conditioning performance was accounted for by the level of incentive to receive reinforcement. In the multiple regression analysis in Table 7, the incentive variable was the second most powerful predictor of the conditioning performance; however, the size of increase in the percentage of variance of the conditioning performance accountable was also negligible. When the awareness, incentive, and need variable were entered as the predictor variables in multiple regression equation, \underline{R} was .535.

CHAPTER IV

DISCUSSION AND CONCLUSION

As previously indicated, the main purpose of the present study was to evaluate the effect of verbal reinforcement as related to S's connotative meaning of the stimulus material and need for social approval. In hypothesis I, it was predicted that Ss with a high need for social approval show a higher conditioning performance than Ss with a low need for social approval. In hypothesis II, it was predicted that, given a certain level of need for social approval, Ss who were positively reinforced for the verbal response class which was congruent with their meaning of it (congruent reinforcement) show a higher conditioning performance than Ss who were reinforced incongruently (incongruent reinforcement). In order to test the above hypotheses, a verbal conditioning situation was designed in such a way that the condition under which S received congruent or incongruent reinforcement within each level of approval need could be manipulated. The verbal reinforcer employed in the study was E's alternatively saying "good" or "fine."

The data generally showed that the groups under the two different treatment conditions of reinforcement showed an overall increase in the frequency of using the reinforced

response class, indicating that the verbally reinforcing stimulus used in this study was generally effective. However, the groups which received reinforcement for a negative description of hippie (RND) showed a significantly greater conditioning effect than the groups which received reinforcement for a positive description of hippie (RPD). Buss and Durkee (1958) also found a similar result in that their college Ss conditioned faster with hostile words than with neutral words. One possible explanation for this may be that college students of the age level used in the present study look for somewhat negative, rather than positive, use of words. Alternative explanation for this finding may be due to the size of response class (Buss & Durkee, 1958). Since the positive verbs in this study may be sampled from a larger population of positive verbs than the population of negative verbs, learning of a large class of responses may be slower than learning of a small class.

Hypothesis I was not confirmed: there was no systematic difference in the conditioning performance between the groups with a high and low need for social approval as measured by the Marlowe-Crowne Social Desirability Scale (MCS). Furthermore, need for approval did not significantly interact with other variables such as the connotative meaning and the treatment conditions. This finding was consistent with the findings of Cushing (1957), Rosenthal et al. (1966), and Spielberger et al. (1963), but

inconsistent with Buckhout (1965), Crowne and Strickland (1961), Epstein (1964), Marlowe (1962), and Marlowe et al. (1964). Failure to obtain evidence for differential conditioning effects between the high and low need for approval S may be in part due to the lack of construct validity of the MCS as a measure of need for social approval, or may be in part due to E who was always introduced as a graduate student. Thus, S's perception of E as a student who is in similar social position with S himself may have lowered the effect of E as a reinforcing agent.

Hypothesis II that Ss under a congruent reinforcement show a higher conditioning performance than Ss under an incongruent reinforcement was clearly supported. The major evidences for this were found when comparisons of the conditioning performance were made among the groups which had different meaning of hippie but received the same reinforcement condition: (1) of the groups under RPD, the group with a positive meaning showed a significantly greater conditioning performance than the group with a negative meaning of hippie; (2) of the groups under RND, the group with a negative meaning showed a greater conditioning performance than the group with a positive meaning of hippie. Other evidence was provided in the comparison of the conditioning performance of the groups which had a similar meaning but received different treatment conditions: (1) of

the groups with a positive meaning of hippie, the group under RPD showed a significantly greater increase in the frequency of the reinforced response class than did the group under RND; (2) of the groups with a negative meaning of hippie, the group under RND showed a significantly higher increase in the reinforced response class than did the group under RPD. In fact, the two groups which received incongruent reinforcement, i.e., the group with a positive meaning under RND and the group with a negative meaning under RPD, failed to demonstrate any consistent changes in the rate of response emission during the conditioning period.

Of interest at this point is the conditioning performance of the groups with a neutral meaning of hippie. Since these neutral groups can be considered as a base line group in the sense that they received a small degree of incongruent reinforcement in each treatment condition, the conditioning performance of these neutral groups should be somewhere in between the congruently reinforced and incongruently reinforced groups in both reinforcement conditions. The data were consistent with the prediction: the groups with a neutral meaning showed a greater conditioning performance than the incongruently reinforced group but less than the congruently reinforced group in both RPD and RND. However, it is also interesting to note that among the groups with a neutral meaning, the group under RND

showed a higher conditioning performance increase than did the group under RPD.

The increase of the conditioning performance over the trial blocks in each treatment condition showed predominant linear trends across the reinforcement conditions; only the group with a neutral and negative meaning of hippie showed significant cubic trends in the conditioning curves. This seems to indicate that performance increase in a verbal conditioning situation as in this study increases linearly without any remarkable shift over the trial blocks. Exhaustion phenomenon or significant decline in the rate of response emission during the third period of conditioning block as was reported by Marlowe (1962) was not found in the present study. However, the pattern of the conditioning curves among the 12 groups was interesting: they showed more similar patterns of the conditioning curves among the groups which received the same reinforcement condition than among the groups with a similar meaning of hippie. The difference in the locus of the peak conditioning block and the conditioning performance in the final block between the groups under RPD and RND seems to suggest that the nature of the treatment condition, i.e., reinforcement for positive or negative description of hippie itself, produces certain similar patterns of conditioning curves. This may indicate that the nature of the reinforced response class may play more important role in producing certain

pattern of conditioning performance than S's meaning itself.

However, the poor conditioning effect of the groups which received reinforcement which was incongruent with their meaning can be interpreted as the result of affective components associated with Ss' responses involving their conception of hippie. As suggested by Nuthmann (1957), those who have responded overtly and covertly, "Hippie is worthless" hundreds of times, for example, may have found some inconsistencies in their cognition when they have to verbalize a response class somewhat contradictory to their conception of hippie (e.g., "Hippie is trustworthy.") in order to obtain E's reinforcing stimulus. This inconsistency between S's preexperimental conception and the reinforced response class on which E's reinforcing stimulus based may have created a negative rapport, and this in turn, may have lowered his responsivity toward E's reinforcing stimulus. Thus, the findings of the present study directly support the notion of balance theory (Insko & Cialdini, 1969) as applied to the affiliation of S as well as E. Baron (1966) earlier proposed that responsivity toward socially approving stimulus is determined by the social reinforcement standard (SRS) which refers to the discrepancy between past and present reward rate. While SRS essentially emphasizes the difference between S's subjectively perceived level of present reward rate and that of his past rate as a factor in determining conditioning performance, the findings of the

present study suggest that the discrepancy between S's preexperimental conception of the reinforced response class and the condition under which he receives reinforcing stimulus for the response class may be an important parameter in determining reinforcement effect. As applied to the area of counseling or psychotherapy, for example, approval behavior given by the therapist to the client in an interview situation may have a differential effect depending upon the client's existing meaning of the response class for which the therapist's approval behavior is delivered. Thus, when a client receives an incongruent reinforcement, behavioral change of the client would be significantly less than under the situation in which he receives a congruent reinforcement. This form of minimum responsivity toward the therapist's behavior may be interpreted as a resistance of the client. Rogerian approach to counseling and psychotherapy using the therapist's empathic behavior or acceptance as the main techniques of interview may essentially be seen as a way of changing the client's behavior using minimum level of incongruent reinforcement. However, if minimum level of incongruent reinforcement produces substantial amount of reinforcement effect, it is difficult to explain how the client's behavior could ultimately be changed toward constructive aspects of behavior. While the differences between the verbal conditioning and the counseling interview situation (e.g., role expectancy, nature of behavioral

change, and emotional involvement of S) may be the factors which make it difficult to explain this, a variable that was not considered previously must be taken into account: the degree of incongruency, i.e., the amount of the difference between S's preexperimental conception and the nature of the reinforced response class. Since the neutral meaning groups in this study showed significant conditioning effect in both reinforcement conditions, it seems that not only congruent reinforcement but also a small degree of incongruent reinforcement produces significant conditioning effect. Thus it may be suggested that small degree of incongruent reinforcement in psychotherapeutic interview setting may produce effective behavioral change of the client. This in turn may explain how the client's behavior could ultimately be changed toward constructive direction using minimum level of incongruent reinforcement.

In the present study, there were low positive correlation coefficients between the conditioning performance and the level of awareness as measured by S's written response to the questionnaire. The sizes of the correlation coefficients tended to increase as the conditioning trials increased, thus indicating some growing awareness. There have been many controversies over the role of awareness (i.e., descriptive behaviorism versus cognitive theory) in determining verbal conditioning performance (e.g., Spielberger & DeNike, 1966); however, the data of this study

suggest that only one third of the variance of the conditioning performance can be accounted for by the awareness variable.

There was a low positive correlation between the level of the incentive to receive reinforcement as measured by a questionnaire and the conditioning performance of S. Furthermore, the correlation between the need variable and the level of incentive also showed a negligible size of correlation coefficient. This was consistent with the data obtained by Spielberger et al. (1963). This low positive correlation between the incentive to receive reinforcement and the conditioning performance raises a question as to what is reinforced in a verbal conditioning task in this study. It should be noted, however, that the measure of incentive level in this study was given after the completion of the conditioning proper. Since each S might have some kind of subjectively estimated success or failure feeling with regard to his performance, it seems possible that S who felt that his performance was poor would more likely to have responded that he did not want to receive reinforcing stimulus as a way of rationalizing his poor performance during the conditioning trials. If this is the case, future research should devise a measure of S's incentive level by observing S's performance during the conditioning trials.

In conclusion, the data in this study did not confirm the first hypothesis that there would be systematic

difference in the conditioning performance between Ss with a high and low need for social approval. However, the data supported the second hypothesis that congruent reinforcement would yield a greater conditioning effect than would incongruent reinforcement. The findings were interpreted as indicating that the difference between S's previous meaning of the reinforced response class and the condition under which he receives reinforcing stimulus is an important factor in determining conditioning performance.

However, more evidence must be accumulated through future study with regard to the generalizability of the findings of this study. Since Ss in this study were self-selected volunteers, it could be argued that S group may not be typical of the population group to which the present study intends to generalize (Schultz, 1969). Thus, future study should replicate the present study using nonvolunteers and/or noncollege Ss. Furthermore, future study should be conducted to explore as to whether congruent reinforcement would produce a greater reinforcement effect than incongruent reinforcement in a natural conversational situation such as a counseling and/or psychotherapeutic interview situation.

REFERENCES

- Baron, R. M. Social reinforcement effects as a function of social reinforcement history. Psychological Review, 1966, 73, 527-539.
- Buckhout, R. Need for social approval and attitude change. The Journal of Psychology, 1965, 60, 123-128.
- Buss, A. H., & Durkee, Ann. Conditioning of hostile verbalizations in a situation resembling a clinical interview. Journal of Consulting Psychology, 1958, 22, 415-418.
- Cialdini, R. B., & Insko, C. A. Attitudinal verbal reinforcement as a function of informational consistency: A further test of two-factor theory. Journal of Personality and Social Psychology, 1969, 12, 342-350.
- Crowne, D. P., & Marlowe, D. A new scale of social desirability independent of psychopathology. Journal of Consulting Psychology, 1960, 24, 349-354.
- Crowne, D. P., & Strickland, B. R. The conditioning of verbal behavior as a function of the need for social approval. Journal of Abnormal and Social Psychology, 1961, 63, 395-401.
- Cushing, M. C. Affective components of the response class as a factor in verbal conditioning. (Dissertation Abstract, 1957, 17, 2313.)
- Dixon, T. R. The verb as a discriminative stimulus in verbal operant conditioning. Unpublished doctoral dissertation, Washington University, 1962.
- Dixon, T. R., & Dixon, J. F. The impression value of verbs. Journal of Verbal Learning and Verbal Behavior, 1964, 3, 161-165.
- Dulany, D. E. Jr. Hypotheses and habits in verbal "Operant conditioning." Journal of Abnormal and Social Psychology, 1961, 63, 251-263.
- Epstein, R. Need for approval and the conditioning of verbal hostility in asthmatic children. Journal of Abnormal and Social Psychology, 1964, 69, 105-109.

- Greenspoon, J. The reinforcing effect of two spoken sounds on the frequency of two responses. American Journal of Psychology, 1955, 68, 409-416.
- Hildum, D. C., & Brown, R. W. Verbal reinforcement and interviewer bias. Journal of Abnormal and Social Psychology, 1956, 53, 108-111.
- Insko, C. A., & Cialdini, R. B. A test of three interpretations of attitudinal verbal reinforcement. Journal of Personality and Social Psychology, 1969, 12, 333-341.
- Krasner, L. Studies of the conditioning of verbal behavior. Psychological Bulletin, 1958, 55, 148-170.
- Krasner, L. The therapist as a social reinforcement machine. In H. H. Strupp (Ed.), Second research conference on psychotherapy, Chapel Hill, N. C.: American Psychological Association, 1961.
- Marlowe, D. Need for social approval and the operant conditioning of meaningful verbal behavior. Journal of Consulting Psychology, 1962, 26, 79-83.
- Marlowe, D., Beecher, R. S., Cook, J. B., & Doob, A. N. The approval motive, vicarious reinforcement and verbal conditioning. In D. P. Crowne & D. Marlowe, The approval motive: Studies in evaluative dependence. New York: Wiley, 1964.
- Michael, J., & Meyerson, L. A behavioral approach to counseling and guidance. Harvard Educational Review, 1962, 32, 382-402.
- Myers, J. L. Fundamentals of experimental design. Allyn and Bacon, Boston, 1966.
- Nuthmann, A. M. Conditioning of a response class on a personality test. Journal of Abnormal and Social Psychology, 1957, 54, 19-23.
- Osgood, C., Suci, G., & Tannenbaum, P. The measurement of meaning. Urbana, Ill.: University of Illinois Press, 1957.
- Rosenthal, R., Kohn, P., Greenfield, P. M., & Carota, N. Data desirability, experimenter expectancy, and the results of psychological research. Journal of Personality and Social Psychology, 1966, 3, 20-27.

- Schultz, D. P. The human subject in psychological research. Psychological Bulletin, 1969, 72, 214-228.
- Spielberger, C. D. The role of awareness in verbal conditioning. Journal of Personality, 1962, 30, 73-101.
- Spielberger, C. D., Berger, A., & Howard, K. Conditioning of verbal behavior as a function of awareness, need for social approval, and motivation to receive reinforcement. Journal of Abnormal and Social Psychology, 1963, 67, 241-246.
- Spielberger, C. D., & DeNike, L. D. Descriptive behaviorism versus cognitive theory in verbal operant conditioning. Psychological Review, 1966, 73, 306-326.
- Spielberger, C. D., & Levin, S. M. What is learned in verbal conditioning? Journal of Verbal Learning and Verbal Behavior, 1962, 1, 125-132.
- Taffel, G. Anxiety and the conditioning of verbal behavior. Journal of Abnormal and Social Psychology, 1955, 51, 496-501.
- Thorndike, E. L., & Lorge, I. The teachers' word book of 30,000 words. New York: Teacher's College, Columbia University, Bureau of Publications, 1944.

APPENDIX A

THE SEMANTIC DIFFERENTIAL SCALE

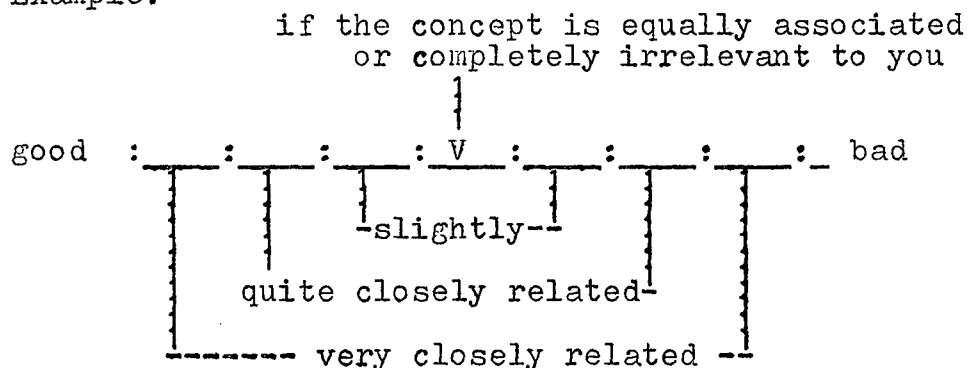
NAME(in block letters): first lastSTUDENT NO. AGE: yrs mon. SEX: M F GRADE: DIRECTIONS

The purpose of this study is to know the meanings of certain things to various people by having them judge them against a series of descriptive scales. In doing this, please make your judgements on the basis of what these things mean to you.

On each page of this booklet you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Place a check-mark (V) between the two dots at the appropriate point on the scales, depending on how you relate the scale to the concept.

For Example:

IMPORTANT

1. Do not look back and forth through the pages.
2. Make each item a separate and independent judgement.
3. Work at a fairly high speed; it is your first impressions and immediate 'feelings' about the item that we want.
4. BE SURE TO CHECK EVERY SCALE FOR EVERY CONCEPT.

THE CONCEPT TO BE RATED WILL APPEAR ON THE TOP OF EACH PAGE.

HIPPIE

| | | |
|-------------|--|---------------|
| healthy | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | sick |
| hot | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | cold |
| harmful | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | beneficial |
| soft | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | hard |
| skillful | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | bungling |
| passive | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | active |
| unimportant | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | important |
| masculine | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | feminine |
| top | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | bottom |
| slow | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | fast |
| meaningless | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | meaningful |
| humorous | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | serious |
| useful | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | useless |
| vibrant | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | still |
| sour | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | sweet |
| intelligent | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | unintelligent |
| good | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | bad |
| small | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | large |
| painful | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | pleasurable |
| emotional | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | rational |
| innocent | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | guilty |
| wrong | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | right |
| heavy | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | light |
| comfortable | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | uncomfortable |
| regressive | : ____ : ____ : ____ : ____ : ____ : ____ : ____ : | progressive |

APPENDIX B

THE MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE

NAME (In Block Letters) first _____ last _____ SEX M F
 STUDENT NO. _____ AGE _____ yrs _____ mon. MAJOR _____ GRADE _____

=====

Personal Reaction Inventory

Listed below are a number of statements concerning personal things. Read each item and decide whether you would answer yes or no as it pertains to you personally. Mark (V) under the appropriate place.

Important: 1. Be sure to answer every item.
 2. Make each item a separate and independent judgement.

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

- | | <u>YES</u> | <u>NO</u> |
|--|------------|-----------|
| 14. I can remember "playing sick" to get out of something. | () | () |
| 15. There have been occasions when I took advantage of someone. | () | () |
| 16. I'm always willing to admit it when I make a mistake. | () | () |
| 17. I always try to practice what I preach. | () | () |
| 18. I don't find it particularly difficult to get along with loud mouthed, obnoxious people. | () | () |
| 19. I sometimes try to get even rather than forgive and forget. | () | () |
| 20. When I don't know something I don't at all mind admitting it. | () | () |
| 21. I am always courteous, even to people who are disagreeable. | () | () |
| 22. At times I have really insisted on having things my own way. | () | () |
| 23. There have been occasions when I felt like smashing things. | () | () |
| 24. I would never think of letting someone else be punished for my wrong-doings. | () | () |
| 25. I never resent being asked to return a favor. | () | () |
| 26. I have never been irked when people expressed ideas very different from my own. | () | () |
| 27. I never make a long trip without checking the safety of my car. | () | () |
| 28. There have been times when I was quite jealous of the good fortune of others. | () | () |
| 29. I have almost never felt the urge to tell someone off. | () | () |
| 30. I am sometimes irritated by people who ask favors of me. | () | () |
| 31. I have never felt that I was punished without cause. | () | () |
| 32. I sometimes think when people have a misfortune they only got what they deserved. | () | () |
| 33. I have never deliberately said something that hurt someone's feelings. | () | () |

END

BE SURE TO CHECK EVERY ITEM.

APPENDIX C

THE INSTRUCTION FOR THE VERBAL CONDITIONING EXPERIMENT

This is an experiment in verbal behavior which uses a sentence construction task. I will show you some cards like this one. (The E displays a sample card.) Each card will have three words above and two words on a line underneath. What I want you to do is to make up a sentence containing any one of the words above and beginning with any one of the words on the line below. For example (The E points to words on the sample card while explaining.), you might make up this sentence: "A hippie concluded." or this one, "A policeman paired." In every case, use any one of the three words above in a sentence which begins with any one of the two words in the line below. Do you have any questions? (The E will answer all questions by rereading relevant parts of the instruction.) Let us try about 20 sentences for practice.

APPENDIX D

THE AWARENESS-TESTING QUESTIONNAIRE

This is to ask you some questions about the experiment that you were just in. In answering these questions, it is important that you think back to when you were going through the cards.

1. What do you think this experiment is all about?
2. Did you think you were using some sentences (or words) more often than others? Which sentences (or words)? Why?
3. Was there anything that you were supposed to say in order to be correct?
4. What ideas did you have about what was making me say "Good" or "Fine"?
5. Would you say you wanted me to say "Good" or "Fine" more often? Check where appropriate: Very much ____ Some ____ Didn't care one way or the other ____