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An Experimental Investigation of the Effects of Reinforcement in Counseling on the Change of Verbal and Other Overt Behavior

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AN EXPERIMENTAL INVESTIGATION OF THE EFFECTS OF REINFORCEMENT IN COUNSELING ON THE CHANGE OF VERBAL AND OTHER OVERT BEHAVIOR

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CHAPTER I

INTRODUCTION

The purpose of this investigation was to evaluate the effects of counseling by the use of reinforcement as it effects the change of verbal and other overt behavior in the counseling situation. The results of this investigation would seem to be applicable to the learning process whether in the public school classroom or the counselor's office within a school system.

A theoretical-system perspective for this research is gained from Shoben (24), who attempts to show the relationship existing between the various therapeutic systems. In brief, all systems have a legitimate claim to success in dealing with clients. In most, if not all problems, the counselor is working with some form of underlying anxiety and his primary task is to alleviate that anxiety so that the client is able to think rationally and recognize the source of his problem.

All systems rely heavily on verbal intercourse between counselor and client to establish a "good" relationship. The attaining of rapport is basic to all systems whether directive, client-centered, learning theory oriented, or any of the many other systems of therapeutic counseling. In essence, then, the client-counselor relationship should

manifest reciprocal acceptance in order to effect the kind of positive feeling for each other that provides the groundwork for counseling progress.

From Shoben's analysis, it is assumed that any change in behavior is essentially a learning process contingent on reinforcement (in the general usage of the term) that comes about through verbal communication. This common core would seem to apply regardless of the system of counseling employed.

It was not the purpose of this study necessarily to establish a neo-behavioristic system of counseling as superior but rather to extend certain dimensions of the research that has been done in the area of reinforcement as it effects client change in a learning situation. For example, Greenspoon was able to show a significant increase in the use of plural nouns as a function of reinforcement (9:409-16). This is perhaps best described as a change of verbal behavior. The purpose of the present study was to extend Greenspoon's results (increase in plural nouns) to change in action directed verbal responses. A further purpose was to study change in subsequent overt behavior resulting from the principle of reinforcement systematically applied in the counseling relationship.

Investigations in this latter dimension have been somewhat limited. However, from research indications to date, it would seem to be an area of relevant study. If, as

Shoben suggests, behavioral change is dependent on the learning process, it would seem to follow that change in behavior would occur most readily by applying the principles of learning that have been established in the laboratory, e. g., reinforcement. In this sense, there are implications for the existing systems that are in use in psychology today, whether new learning is attempted in the traditional clinic, the counselor's office, or the classroom.

I. PURPOSE

The purpose of this investigation was to evaluate the differences found within a reinforcement versus non-reinforcement approach to counseling by (1) attempting to condition a selected verbal response or group of responses and (2) to study subsequent effects of conditioning as demonstrated by other overt behavioral change.

Specifically, the following hypotheses were tested: (1) Action directed verbal responses will increase in the counseling session as a function of reinforcement given by the counselor and (2) verbal conditioning will transfer to overt behavior as indicated by: (a) positive change in study habits scores measured by the Brown-Holtzman Survey of Study Habits and Attitudes and (b) positive change in achievement test performance.

II. DEFINITIONS OF TERMS USED

Reinforcement. Reinforcement is defined as any verbal response by the counselor which is positive and expresses approval of a stated idea of the client. Examples: "That seems like a good idea," "Yes, that would appear to be a good move." Each verbal reinforcement is accompanied by the counselor's writing down of the counselee's expressed idea.

Action-directed response. An action-directed response is defined as any response made by the counselee which suggests some type of apparently positive overt behavior. Examples: "Maybe I should start outlining these chapters" or "I think I'll set aside two hours each day for this subject." Only those action-directed verbal responses that suggest completely leaving the environment to avoid facing his problem are not reinforced. Examples: "I think I'll quit school" or "I'm going to join the army."

Non-directive counseling. The non-directive or client-centered counseling method provides the basis for all counseling accomplished in this study. Briefly stated, the counselor adheres to the principles of individual responsibility within the client, intrinsic client desire for self-improvement, the necessity for a warm and permissive

atmosphere, freedom of the client to hold any set of attitudes, and complete acceptance of the client without expression of approval or disapproval (2:Ch.II). More succinctly stated,

> . . . the counselor refrains from any expression or action which is contrary to the preceding principles. This means refraining from questioning, probing, blame, interpretation, advice, suggestion, persuasion, reassurance; . . . (2:26).

III. MEASURES

Brown-Holtzman survey of study habits and attitudes. The Brown-Holtzman survey of study habits and attitudes (Brown-Holtzman) is an objectively scored, diagnostic instrument designed to assess attitudes and motivation in academic areas. The survey consists of 75 items or statements dealing with study habits and attitudes toward study habits. The student is asked to rate himself in terms of agreement with the stated question on a five point scale.

The Brown-Holtzman has a low correlation with American Council on Education, Psychological Examination (ACE) scores; however, using it in connection with ACE scores substantially increases the predictive accuracy of that test. This suggests that it is measuring something independent from scholastic aptitude. Reliability, established by Gulliksen's split-third technique and test-retest studies, ranges from .79 to .95. Validity, established with grade point averages as criterion, ranges from .26 to .66.

James Deese, writing in Buros' Fifth Mental Measurements Yearbook, stated:

> . . . this inventory or survey is a unique and valuable contribution to the technique for assessing student habits of work and motivation for study. It is more suited for uncovering attitudinal and motivational difficulties than any other published study inventory, and its use is particularly recommended where such difficulties are the prime concern. In addition, its value for research on counseling and remedial teaching must not be overlooked (4:782).

C. Gilbert Wrenn and Roy D. Lewis, also writing in Buros' Yearbook, indicate:

> In general, the reviewers feel that this instrument is well grounded, easy to understand, and can be an excellent source of study habits and attitude information for use by student and counselor (4:783).

Krumboltz and Farquhar (16:1-25) at Michigan State University undertook a study to test the results of a How To Study course in which the Brown-Holtzman study habits inventory was used in connection with other measuring devices to assess motivational change in the assigned groups. Three random groups were assigned to different instructional methods in a course titled Personal Orientation 1, How To Study. The three broad methods of instruction included an instructor-centered method utilizing lecture approach and emphasizing the intellectual content of the course, a student-centered approach utilizing committee work and student-led discussions with emphasis on the affective aspects, and an eclectic method utilizing instructor led

discussions and other techniques. The general results of this study indicated that the eclectic approach was the most effective means of producing change, the instructor-centered method second, and the student-centered approach the least effective method of producing change in motivational approach to study habits problems as measured by the Brown-Holtzman.

Achievement tests. All achievement tests were based on course content in a General Psychology survey course. The sources utilized for questions were limited to lecture material and readings in Elements of Psychology by David Krech and Richard S. Crutchfield (15).

Six ten-point, true-false quizzes were developed from the readings in the course text-book. The guiding principle behind the development of the questions was a factual recall of major points that attempted to minimize the existing intellectual differences. The examinations were developed by the course instructor over lecture material and text content. The course examinations attempted to assess not only factual content but over-all understanding of psychological concepts.

IV. POPULATION AND SAMPLE

The sample was composed of 134 freshmen and sophomores and a few junior students enrolled in two sections of

General Psychology at Central Washington State College who were being taught by a common instructor.

The sample was divided into three groups. The primary consideration for assignment to the Experimental Group or Control Group A was that each subject freely volunteer for assistance in overcoming some study habits problem. Subjects assigned to the Experimental Group and Control Group A were assigned systematically by equating mean scores on the Washington Pre-differential Grade Prediction Test and percentile scores obtained on a pre-test of the Brown-Holtzman. The mean grade prediction score for the Experimental Group was 1.87 and the Brown-Holtzman resulted in a mean of 22.73. The mean grade prediction score for Control Group A was 1.89 and the Brown-Holtzman resulted in a mean of 23.47.

Subsequent drop-outs during the counseling period resulted in mean scores of 20.85 and 1.86 for the Experimental Group on the Brown-Holtzman and Washington Pre-differential Grade Prediction Test respectively. For Control Group A, the mean scores became 23.69 and 1.89 respectively for the Brown-Holtzman and Washington grade prediction scores. Originally, the two groups were assigned a total N of 15 subjects consisting of 7 male and 8 female subjects in each group. After drop-outs, the Experimental Group consisted of 13 subjects, 7 female and 6 male. Control Group A consisted of 13 subjects, 8 female and 5 male subjects.

All other students enrolled in the two sections of General Psychology were assigned to Control Group B in order to obtain an additional comparison group. The mean score on the Brown-Holtzman for this group was 32.94.

Since change in achievement was to be studied rather than achievement per se, the mean Washington Pre-differential Grade Prediction scores were not obtained for Control Group B. It is known however, that the Brown-Holtzman correlates moderately with achievement and the Washington grade prediction test correlates moderately high with achievement. Thus it is likely that Control Group B would have at least a somewhat higher grade prediction mean score than either the Experimental Group or Control Group A.

CHAPTER II

BACKGROUND OF THEORY AND RESEARCH

A summary article by Leonard Krasner (14:148-170) attempts to consolidate the various types of experimental work done in the area of verbal conditioning. He reports a total of 31 studies (Table I, below). As can be seen, a majority of the studies report positive results of the conditioning effects of reinforcement. This would seem to have implications for the further analysis of the effects of learning principles on verbal behavioral change and an extension into an applied situation where some evaluation could be made of consequent overt behavioral change. A brief summary of some of the experimental variables common to this area of study will be made following the presentation of the table.

TABLE I (14:160)

SUMMARY OF RESULTS OF "VERBAL CONDITIONING" STUDIES

Author	Reinforcing Stimuli	Class of Behavior Reinforced
	POSITIVE RESULTS[a]	
Ball	"mmm-hmm"	"animal"
Greenspoon	"mmm-hmm"	plural nouns
Mandler & Kaplan	"mmm-hmm"	plural nouns
B. Sarason	"mmm-hmm"	verbs
I. Sarason	"mmm-hmm"	"verbal activity" verbs

TABLE I (continued)

Author	Reinforcing Stimuli	Class of Behavior Reinforced
Mock	"mmm-hmm," head nod	"mother"
Krasner	"mmm-hmm," head nod, smile	"mother"
Salzinger & Pisoni	"mmm-hmm," "uh-ha," or "I see"	affect statements
Wilson & Verplanck	"mmm-hmm," "good," or writing	plural nouns, adverbs
Binder, et. al.	"good"	"hostile" verbs
Cohen, et. al.	"good"	"I," "we" pronouns
Cushing	"good"	"like" person in pictures
Grossberg	"good"	"I," "we" pronouns
Ekman	"good"	anti-capital punishment
Hartman	"good"	"I," "we" pronouns
Hildum & Brown	"good"	"attitudes"
Klein	"good"	"I," "we" pronouns
Nuthmann	"good"	"acceptance of self"
Taffel	"good"	"I," "we" pronouns
Tatz	"good"	a pair of digits
Fahmy	"good-one"	human responses
Spivak & Papajohn	"right"	autokinetic effect
Wickes	"fine," "good," or "all right"	movement responses
Wickes	head nod, smile, or lean forward	movement responses
Ekman	head nod, smile, and lean forward	movement responses
Greenspoon	light	plural nouns
Sidowski	light	plural nouns
Greenspoon	buzzer	plural nouns
McNair	bell tone	rate of verbalizations
Verplanck	paraphrase, agreement, smile	opinions
Kanfer	"that's accurate," etc.	autokinetic effect

TABLE I (continued)

Author	Reinforcing Stimuli	Class of Behavior Reinforced
Hartman	head shake	"I," "we" pronouns
Mock	head shake, "huh-uh"[b]	"mother"
Greenspoon	"huh-uh"[b]	plural nouns
	NEGATIVE RESULTS[c]	
Daily	"mmm-hmm"	"I," "we" pronouns
Hildum & Brown	"mmm-hmm"	"attitudes"
Cushing	"good"	"dislike" persons
Daily	"good"	"I," "we" pronouns
Marion	"good"	"I," "we" pronouns
Hartman	head nod	"I," "we" pronouns
Fahmy	repetition of response	human responses
Fahmy	give another one, please	human responses
Ball	light	"animal"
Nuthmann	light	acceptance of self
Taffel	light	"I," "we" pronouns
Ball	buzzer	"animal"

a - The reinforced behavior changed significantly in the hypothesized direction during reinforcement sessions.
b - Resulted in decrease; all others resulted in increase of reinforced behavior.
c - The reinforced behavior either did not increase significantly or its increase was no more than in a control group.

Setting. With the exception of Verplanck's study (27:669-676), which will be reviewed separately, the studies are best labeled as research studies in the conventional restricted laboratory sense. Most of the subjects used have been beginning students in an introductory psychology course who were "requested" to participate in some sort of psychological study.

Response. The class of verbal behavior that is selected for reinforcement generally falls into the following

classes: saying of words or numbers similar to the pioneering work done by Greenspoon (9:409-416) in which plural nouns were reinforced over non-plural nouns. A second class is sentence completion where the subject is required to make up a sentence from a cue presented on three by five cards. The responses chosen for reinforcement were usually the use of "I" or "We" to begin the sentence. Another response type chosen for reinforcement was interview and story telling where key category words such as "mother" or "animal" were reinforced. The fourth class of verbal behavior reinforced dealt with test-like situations where the subject was presented with either a forced choice response or scaled attitude response with categories of agree, disagree, or strongly disagree. The subject would be reinforced for whatever particular viewpoint the examiner desired to condition.

Cues. These are illustrated in the preceding table but usually separated into three classes: verbal, nonverbal or gesture cues, and mechanical cues such as tapping pencil, flashing light or buzzer.

Populations. Populations range from hospitalized schizophrenic patients to total strangers, friends, and relatives. However, by far the largest population used consisted of the traditional undergraduate students in an introduction to psychology course.

Examiners. Most studies have been conducted by using only one examiner and it has been hypothesized that this could be a critical variable in establishing conditioned behavior. Verplanck's study (27:669-76) is an interesting variation of this and will be reviewed separately.

Controls. Krasner suggests two general types of controls that have been primarily used although they are sometimes combined. The first consists of a control group selected from the same population who received no reinforcement. The second type of control is established by arriving at an operant level of response tendency during the first session and comparing this to subsequent response tendencies established in later sessions (14:148-70).

The study by Greenspoon (9:409-416) is most representative of the beginning of research in the area of conditioning which deals with human subjects rather than infra-human subjects. The purpose of his investigation was to "investigate the effect of the introduction and omission of two spoken sounds following a pre-determined response on the frequency of occurrence of that response" (9:409).

The author used 75 subjects drawn from undergraduate courses in speech and psychology at the University of Indiana. Ten subjects were later eliminated because they recognized the connection between the contingent stimulus and the response it followed. The two contingent or reinforcing

stimuli used were the phonetic pronouncement of "mmm-hmm" and "huh-uh."

Reinforcement was given for any verbalized plural noun and withheld for any verbalization that was not specifically a plural noun. Each subject was introduced to the experimental setting (small room, two chairs and a table) and asked to say all the words they could think of. No further instruction was given and no indication of the rightness or wrongness of any word was given. Each subject had an experimental session of 50 minutes in length.

An experimental approach was devised by separation into groups whereby the effects of "huh-uh" could be assessed for extinction of a plural noun response. The evidence revealed that "mmm-hmm" increased the frequency of the use of plural nouns and the contingent stimulus "huh-uh" decreased the use of plural nouns. At the same time, both reinforcing stimuli increased the frequency of the use of non-plural nouns. This was attributed to the relatively large class inherent in anything not specifically "plural nouns." Thus Greenspoon concluded that the nature of the response class determines whether or not the stimulus will be reinforcing.

An interesting study by Verplanck (27:669-676) represents an extension of the work done by Greenspoon. Verplanck attempted to extend operant conditioning principles to the complexity of everyday verbal behavior of individuals.

Specifically, he chose to attempt conditioning of statements of opinions of various individuals in a variety of settings. The experiment was designed to determine whether a person's conversation could be manipulated through operant conditioning. The two assumptions made by Verplanck were: (1) statement of opinion is a class of behavior and (2) statements of agreement with or paraphrasing would function as reinforcement.

The general plan of the experiment provided for a total of 30 minutes conversation centering around such topics as Marxism, religion, and others ranging from the "trivial to the intellectual" (27:669). The sessions were divided into 10 minute intervals in the following manner: the first 10 minutes no reinforcement was given but the operant level of opinion stating responses was established. During the second 10 minutes, every statement of opinion was followed by reinforcement utilizing an agreeable verbal statement or smiling with a nod of the head. For the last 10 minute interval, extinction was attempted either through disagreement with the stated opinion or silence on the part of the examiner.

A total of 17 examiners were used who were undergraduate students in a learning theory class. They were described by Verplanck as experimentally "sophisticated." The subjects ranged in age from college students to 2 subjects who were 55

and 60 years of age. The subjects were described as friends, roomates, uncles, and one total stranger. The setting for the interviews was not limited and they took place in coffee shops, dorm rooms, and anywhere the subject and the examiner could be alone. Only the data for 24 subjects were used in the final analysis because some subjects did not meet the three time intervals or they would leave the area during extinction. In addition, they would quit talking because of the hostility generated or they would suddenly become aware that they were being manipulated. The following table represents part of the data gathered by the study:

TABLE II (27:674)

RELATIVE FREQUENCY OF OPINION STATEMENTS

Ten Minute Time Intervals	Process	Median	Range
1	Operant Level	0.320	.012-.655
2	Conditioning	0.558	.071-.702
3	Extinction	0.333	.048-.643

(Using signed rank test - significant beyond 1% level)

The general conclusions indicate that all subjects increased their rate of verbalizing opinions under the influence of reinforcement and 21 of the 24 subjects decreased their rate of opinion stating when reinforcement was withheld. While the author sets some limitations because

of the nature of the study, he feels further research can reduce the uncontrolled variables, and that the results of this study substantiates the manipulation of reinforcement in terms of altering verbal behavior.

O. Ivar Lovaas of the University of California, Los Angeles, has made considerable progress in the investigation of the relationship existing between verbal conditioning and resulting non-verbal behavior. In a study conducted earlier at the University of Washington (17:329-36), Lovaas investigated the effect of strengthening a class of verbal responses through conditioning techniques on the resulting non-verbal response. The results of this study indicated aggressive verbal responses led to aggressive non-verbal responses (striking a doll) significant at the .05 level.

In the discussion of these results Lovaas suggests four possible conclusions: (1) the aggressive verbal responses function as a discriminative stimulus which leads to aggressive non-verbal responses that are not punished; (2) both classes of responses have reinforcing stimuli in common (tension reduction) and other secondary reinforcers, therefore, manipulation of one class leads to changes in the remaining class of responses; (3) that historically, verbal behavior and non-verbal behavior occur in conjunction which results in a generalization effect and subsequent functioning by one or the other as a discriminative stimulus; and (4)

since aggressive verbal responses are historically associated with aversive stimuli, the occurrence of this response leads to extinction of the effect of the aversive stimuli as a function of the absence of threat and, consequently, provides for lessening of the inhibiting effect on aggressive overt responding.

In a series of four experiments, Lovaas (18) investigated the control of operant responding by rate and content of verbal operants. The experiments were designed as follows:

> (1) the effect of the rate of a verbal operant upon the rate of a non-verbal operant; (2) the effect of the content of a verbal operant upon the rate of a verbal operant; (3) the effect of the content of a verbal operant upon the rate of a non-verbal operant; and (4) the effect of the content of a verbal operant upon the content of a non-verbal operant (18:1).

The results of these investigations indicate that the rate of verbal responding has a controlling effect on the rate of simultaneously occurring manual responses. The second investigation indicated that the content of a verbal operant has a directing effect upon the rate of a verbal operant, that is, the subject responded at a higher rate to the word "faster" and conversely, at a lower rate to the word "slower." The third experimental approach verified the influence of verbal operant content upon the rate of a non-verbal operant (lever pressing). Finally, investigation four resulted in 4 subjects demonstrating the effect of verbal

operant content on non-verbal operant content where the subject was required to discriminate between lights before performance of the non-verbal operant. In view of the results listed above, Lovaas states:

> On the basis of such interactions between verbal and non-verbal behavior, it would appear that verbal behavior should frequently acquire discriminative stimulus control over non-verbal behavior. Some control over a person's non-verbal behavior should then be obtained by manipulating his verbal behavior. Obviously, the kind and amount of the control will depend on the person's specific history with respect to verbal and non-verbal interactions (18:18).

In another study reported by Lovaas (19) an attempt was made to "get out of the laboratory" and exercise some control over the behavior of subjects not directly observed in the laboratory. Subjects were reinforced for a specific class of food responses, i.e., "carrots," and an attempt was made to increase food intake of this class of food.

While the author clarifies that previous history may effect the ease of conditioning and that the reinforcement must have some discriminative stimulus properties for the subject, the data indicate that reinforcement associated with a particular food tends to increase the consumption of that food. Lovaas states in conclusion:

> Conceptually, food can be considered a stimulus that sets up a class of responses, including verbal responses and eating responses. If the verbal response in that class is reinforced, hence strengthened, then the other responses of that class will be strengthened as well. The term denoting the class of such effects is known as response generalization (19:14).

J. Maurice Rogers (21:247-252) proposes a relationship between psychotherapy and the recent studies in verbal conditioning. Although this was not necessarily a part of the present study, Rogers has by implication proposed that the outcome of Carl Rogers' client-centered therapy may not be a change or reorganization of the self but rather that therapeutic change may be brought about by unintentional selective reinforcement by the Rogerian therapist.

The hypotheses tested by J. M. Rogers are:

> . . . that an interviewer can produce changes in a subject's self-reference verbalizations by consistently reinforcing a particular class of such statements with simple stimuli, and that such reinforcements can alter a subject's concept of himself, as measured by personality tests" (21:247).

His procedure involved tape recording of interviews conducted with subjects who were told the experimenter was making a study to determine how people think about themselves and to describe spontaneously their own personality traits. The subjects were 36 male students in an introductory psychology course at Stanford University. The author used two experimental groups - Group A was reinforced for positive self-references, Group B was reinforced for negative self-references, and Group C which functioned as a control group, received no reinforcement. Each subject was interviewed 6 times for a total of 10 minutes each session. Reinforcement was restricted to "mmm-hmm" and a nod of the head. Pre- and

post-tests which included Adjective Self-Description, Sentence Completion, Taylor Scale of Manifest Anxiety, and Q-sort Emotional Adjustment Test were administered to the subjects to measure overt behavioral change.

The results of the study indicate that all but 2 subjects were not aware of any conditioning process (2 subjects noticed the use of "mmm-hmm") and that a significant change in self-reference remarks took place between the 1st and 6th interview. The change in negative self-reference remarks that received reinforcement was significant at or beyond the 1 per cent level. Those positive self-reference remarks that did not receive reinforcement led to extinction (significant at the 1 per cent level). Another conclusion is that reinforcement could arrest extinction (significant at the 1 per cent level).

It would appear to be worth noting that J. M. Rogers attempted and was successful in conditioning verbal responses that dealt with more complex areas common to psychotherapy. Some believe this is an advancement over the simple conditioning of words done by earlier studies. The fact that conditioning did not transfer to overt behavior (as measured by the anxiety scale) does not necessarily deny the effect of reinforcement in altering behavior.

The relatively short exposure of the subject to conditioning may have been a factor in the lack of transfer as

well as the inability of the tests used to measure change even if change had occurred. This study seems to point the way toward research that will enable psychotherapists and counselors to approach the interview session with a more positive idea of what is really taking place between counselor and client.

CHAPTER III

PROCEDURE

The purpose of this investigation was to evaluate the effects of counseling by the use of reinforcement as it effects the change of verbal and other overt behavior in the counseling situation. The procedures involved the following variables which are presented in temporal order: pre-test on course quizzes, examinations, and Brown-Holtzman; counseling procedures; post-test on quizzes, examinations, and Brown-Holtzman.

Three weekly quizzes and two course examinations were administered as a part of the course to all students prior to the counseling procedure. This was done to obtain an achievement level for all subjects.

The Brown-Holtzman was administered during regular class periods to 123 students enrolled in two sections of the 1961-62 Winter Quarter General Psychology classes. The two sections of General Psychology utilized the same instructor. The selection of experimental and control subjects was limited to those individuals who scored at or below the median on the Brown-Holtzman and who volunteered to receive counseling assistance with study habits problems.

The two groups were matched by using mean scores of the Brown-Holtzman and mean scores of the Washington

Pre-differential Grade Prediction Test as illustrated in Appendix A. All other subjects in the two sections of General Psychology functioned as a second control group (Control Group B).

Counseling was accomplished over a period of two weeks. Control Group A received non-directive counseling as defined in Chapter I. The Experimental Group received non-directive counseling and systematic reinforcement as described in Definitions of Terms Used (Chapter I). The guide sheet used in counseling is presented as Appendix B. Three counseling periods for each subject ranged from 20 minutes to 40 minutes in duration. The counseling sessions were recorded on magnetic tape and subjected to analysis by judges rating independently to ascertain the number of action-directed verbal responses and counselor reinforcements, reliability of rating, and to insure correctness of procedure by the experimenter.

The counseling occurred in the Clinical Center where three separate but identical rooms were used, and included as equipment were a desk and chair for the counselor, a chair for the counselee, and a tape recorder for recording purposes. All subjects were informed of the recording procedure and that this would be used later by the experimenter for research purposes.

After completion of all counseling sessions, an additional three quizzes and two examinations were administered

as a part of the course to all subjects. The post-test of the Brown-Holtzman was administered after completion of all other steps of the experimental procedure. Pre- and post-test scores on the quizzes, course examinations, and Brown-Holtzman were subsequently compared statistically to determine possible change.

The recorded counseling sessions were rated independently by five judges who were each assigned five tapes. The judges consisted of three regular staff members in the counselor training program and two advanced counselor training students. While listening to tapes, the raters were asked to watch the footage indicator and mark the appropriate footage when they heard a reinforcement or an action-directed verbal response. The action-directed verbal responses were sub-divided into the following categories for finer discrimination: present tense, action-directed verbal response; past tense, action-directed verbal response; negative action-directed verbal response; and implied action-directed verbal response. The rating sheet, included as Appendix C, provided a category for marking the appropriate footage of judged reinforcement given by the counselor.

Reliability of rater judgement was ascertained by comparing each rater's total number of footage markings in the following categories: present tense, action-directed

verbal response; all other action-directed verbal responses; and reinforcement, with the experimenters judged total. The raw score formula of the Pearson Product Moment correlation technique was utilized (7:75). A composite correlation was obtained for each of the three reliability categories by utilizing the Fisher z table for conversion of the Pearson r (10:545).

In order to insure equivalence of quizzes and also for examinations, the raw scores were converted to T scores. Garrett states (8:318):

> T scores have general applicability, a convenient unit, and they cover a wide range of talent. Besides these advantages, T scores from different tests are comparable and have the same meaning, since reference is always to a standard scale of 100 units based upon the normal probability curve.

Specific statistical approaches are presented below for the benefit of possible experimental replications. The procedure followed in developing T scores resulted in computation of means and standard deviations for each aggregate distribution of scores, i.e., a distribution for each pre- and post group of scores on quizzes and examinations. The conversion of individual raw scores to T scores for each individual was made by utilizing the following formulae (28:62) and (7:69):

$$Z = \frac{X - \bar{X}}{SD}$$

then is converted to T by

$$T = 10(Z) + 50$$

Upon completion of the T score distributions, the differences in means of the Experimental Group, Control Group A, and Control Group B, were analyzed for significant differences on an inter and intra-group comparison basis. For intra-group comparison or the evaluation of the differences in a pre- and post-test with the Experimental Group as a separate unit, Control Group A as a separate unit, and Control Group B as a separate unit, the following formula for testing the differences between two means - correlated samples, was utilized (28:141):

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\Sigma d^2}{n(n-1)}}}$$

where

$$\Sigma d^2 = \Sigma D^2 - \frac{(\Sigma D)^2}{n}$$

For the inter-group comparison to test the difference between means of uncorrelated samples or to test the significance of the difference in scores of the Experimental Group as compared with Control Group A and Control Group B, the following formula was utilized (28:130)

$$t = \frac{\bar{X}_{d_2} - \bar{X}_{d_2}}{\sqrt{\frac{\Sigma x^2_1}{n(n-1)} + \frac{\Sigma x^2_2}{n(n-1)}}}$$

where

$$\Sigma x^2 = \Sigma X^2 - \frac{(\Sigma X)^2}{n}$$

In order to evaluate the difference or effectiveness of conditioning of action-directed verbal responses between the Experimental Group and Control Group A, the total number of action-directed verbal responses of the Control Group was compared with the total number of action-directed verbal responses of the Experimental Group. The formula for testing the difference between two means - independent observations, was utilized (7:131):

$$t = \frac{(\bar{X}_1 - \bar{X}_2)}{s(\bar{x}_1 - \bar{x}_2)}$$

where

$$s(\bar{x}_1 - \bar{x}_2) = \sqrt{\left(\frac{\Sigma x_1^2 + \Sigma x_2^2}{n_1 + n_2 - 2}\right)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

CHAPTER IV

RESULTS

This study was an attempt to determine the relative effectiveness of eliciting action-directed verbal responses utilizing two counseling methods with two equated groups. In addition, an attempt was made to assess attitudinal changes with the Brown-Holtzman and to assess behavioral changes as measured by achievement levels of the subjects in the context of a general psychology course.

I. VERBAL CONDITIONING RESULTS

The results of the verbal conditioning attempts with the Experimental Group and Control Group A substantiate the hypothesis that action directed verbal responses will increase as a function of reinforcement used by the counselor. The Experimental Group's action directed statements resulted in a mean of 57.38 as opposed to a mean of 27 for Control Group A (Table III). When subjected to analysis for significance, the *t* of 4.93 shows the mean difference between the two groups to be significant beyond the .001 level of confidence.

An analysis of the time differential between the Experimental Group and Control Group A shows a total elapsed footage difference of 238 feet in favor of Control Group A. Total footage used with the Experimental Group was 4211 feet

at 1 7/8 speed. For Control Group A, a total of 4449 feet was used. The mean footage for the Experimental Group was 324 feet and for Control Group A, 342 feet. The mean difference of footage used is 18 feet in favor of Control Group A. Since the mean footage is higher for Control Group A, any increase in action-directed verbal responses as a function of this variable should favor Control Group A.

II. RELIABILITY OF JUDGED RESPONSES

High reliability was obtained between rater's judgements in the three categories: Reinforcement, Action-directed Verbal Responses (Present), and Action-directed Verbal Responses (Other). Individual reliability coefficients between the experimenter and each of the raters in the above categories are presented in Table IV. By conversion of the Pearson r to a corresponding Fisher z, an average r was obtained for the three reliability checks. The composite r for reinforcement was .980, for action-directed verbal responses (present) .935, and for action-directed verbal responses (other) .840, all significant beyond the .001 confidence level.

The significance level suggests a high agreement between judges and the experimenter on the experimental variable of counselor reinforcement as well as establishing

high reliability of the same type for the criterion variables of action-directed responses and their sub-classes.

III. ATTITUDINAL CHANGE - BROWN-HOLTZMAN STUDY HABITS INVENTORY

The results of the Brown-Holtzman failed to indicate any significant pre- to post-test change in the three groups of subjects. In an intra-group analysis using the t test for correlated samples, both Control Group A and the Experimental Group demonstrated no change in self reference attitude with a raw score mean difference of 1.77 and 2.07 respectively. Control Group B showed no change in self reference attitude with a minus 1.02 mean difference between the pre- and post-test of the Brown-Holtzman as shown in Table V.

When subjected to analysis in inter-group comparison using the t test for uncorrelated samples, the results of the study did not yield significant differences. The difference in Control Group A and the Experimental Group was negligible with a t of .099. The difference between Control Group A and Control Group B resulted in a t of 1.42 while the difference in the Experimental Group and Control Group B produced a t of 1.27. Table VI provides a more detailed analysis of this data.

TABLE III

COMPARISON OF TOTAL ACTION-DIRECTED VERBAL RESPONSES, PRESENT TENSE, FOR THE EXPERIMENTAL GROUP AND CONTROL GROUP A, IN THREE COUNSELING SESSIONS

Subject	Experimental Group	Subject	Control Group A
A	44	A	23
B	89	B	11
C	47	C	28
D	46	D	47
E	26	E	41
F	57	F	27
G	32	G	23
H	78	H	23
I	58	I	11
J	51	J	34
K	69	K	30
L	59	L	27
M	90	M	26
Total 13	746	13	351
Mean	57.38		27
Mean Difference		30.38	
t		6.972*	

*Significant beyond the .001 level

TABLE IV

RELIABILITY COEFFICIENTS FOR FIVE RATERS ON INDEPENDENT VARIABLE OF REINFORCEMENT AND TWO RESPONSE VARIABLES

Rater	Reinforcement	Action-Directed Verbal Response Present	Action-Directed Verbal Response Other
A	.983	.901	.531
B	.980	.979	.847
C	.937	.686	.870
D	.990	.980	.867
E	.987	.933	.919
Average r* (Fisher z)	.980	.935	.840

*All r's significant at the .001 level

TABLE V

BROWN-HOLTZMAN STUDY HABITS INVENTORY
INTRA-GROUP COMPARISON

Group	Pretest Mean	Posttest Mean	Mean diff.	df	t	Significance Level
Experimental	20.85	22.92	2.07	12	.88	Not sig.
Control A	23.69	25.46	1.77	12	.94	Not sig.
Control B	32.94	31.92	-1.02	96	1.82	Not sig.

TABLE VI

BROWN-HOLTZMAN STUDY HABITS INVENTORY
INTER-GROUP COMPARISON

Groups	Mean Diff.	df*	t	Significance Level
Experimental and Control A	.3	12	.099	Not sig.
Experimental and Control B	3.09	54	1.27	Not sig.
Control A and Control B	2.79	54	1.42	Not sig.

*Reference is made to the following formula for determining degrees of freedom in groups of unequal size: the midpoint of $n_1 - 1$ and $n_2 - 1$. (28:133)

IV. BEHAVIORAL CHANGE - ACHIEVEMENT TEST, QUIZZES

The results of the achievement test by weekly quizzes failed to indicate any significant differences in the three groups of subjects. In an intra-group analysis utilizing the *t* test for correlated samples, Control Group B demonstrated no change in performance between the pre- and post-test scores with a minus 1.08 difference in mean scores. Control Group A and the Experimental Group showed no change in achievement level with mean score differences of 4.02 and 4.18 respectively.

The inter-group comparison using the *t* test for uncorrelated samples did not demonstrate significant differences in the three groups. When compared with Control Group B, the Experimental Group yielded a *t* of 1.59. The *t* of .031 between the Experimental Group and Control Group A is negligible. The difference in means of Control Group A when compared with Control Group B, resulted in a *t* of 1.15. As noted in Tables VII and VIII, all intra- and inter-group comparisons failed to yield significant differences in terms of behavioral change as measured by achievement tests.

V. BEHAVIORAL CHANGE - ACHIEVEMENT TEST, EXAMINATIONS

The use of course examinations as criterion for measuring behavioral change in the three groups of subjects

failed to disclose any significant differences. When analyzed on an intra-group basis using the t test for correlated samples, the Experimental Group showed no change in performance between the pre- and post-test assessment with a minus 1.44 mean difference. Control Group A also demonstrated no change in mean score performance with a mean score difference of .66. Control Group B displayed no change in performance with a mean score difference of .13.

Using the t test for uncorrelated samples in an analysis of the inter-group comparison with the examinations as criterion for improvement, the study failed to reveal significant differences in the three groups of subjects. The mean score difference of Control Group A when compared with the mean score difference of Control Group B, yielded a t of .26. The mean score differences of the Experimental Group and Control Group A resulted in a t of .81 when subjected to the test of significance. The inter-group comparison between the Experimental Group and Control Group B failed to produce a significant difference with a t of .84. The relevant data is presented in Tables IX and X.

TABLE VII

ACHIEVEMENT TEST, QUIZZES
INTRA-GROUP COMPARISON

Group	Pretest Mean	Posttest Mean	Mean diff.	df	t	Significance Level
Experimental	40.48	44.66	4.18	11	1.36	Not sig.
Control A	46.22	50.24	4.02	11	.95	Not sig.
Control B	51.72	50.64	-1.08	91	.83	Not sig.

TABLE VIII

ACHIEVEMENT TEST, QUIZZES
INTER-GROUP COMPARISON

Groups	Mean Diff.	df*	t	Significance Level
Experimental and Control A	.16	11	.031	Not sig.
Experimental and Control B	5.26	51	1.59	Not sig.
Control A and Control B	5.10	51	1.15	Not sig.

*Reference is made to the following formula for determining degrees of freedom in groups of unequal size: the midpoint of $n_1 - 1$ and $n_2 - 1$ (28:133).

TABLE IX

ACHIEVEMENT TEST, EXAMINATIONS
INTRA-GROUP COMPARISONS

Group	Pretest Mean	Posttest Mean	Mean Diff.	df	t	Significance Level
Experimental	40.55	39.11	-1.44	12	.84	Not sig.
Control A	49.42	50.08	.66	12	.34	Not sig.
Control B	51.18	51.31	.13	107	.18	Not sig.

TABLE X

ACHIEVEMENT TEST, EXAMINATIONS
INTER-GROUP COMPARISON

Groups	Mean Diff.	df*	t	Significance Level
Experimental and Control A	2.10	12	.81	Not sig.
Experimental and Control B	1.57	60	.84	Not sig.
Control A and Control B	.53	60	.26	Not sig.

*Reference is made to the following formula for determining degrees of freedom in groups of unequal size: the midpoint of $n_1 - 1$ and $n_2 - 1$. (28:133)

CHAPTER V

DISCUSSION AND IMPLICATIONS

The discussion of the results and implications of this study is approached in terms of the separate hypotheses. Specifically, these hypotheses were (1) Action-directed verbal responses will increase in the counseling session as a function of reinforcement given by the counselor, (2) verbal conditioning will transfer to overt behavior as indicated by (a) positive change in study habits scores measured by the Brown-Holtzman and (b) positive change in achievement test performance.

I. VERBAL CONDITIONING RESULTS

The data support the hypothesis that verbal conditioning can be effected within the context of a counseling situation. The significance of the difference in the two groups, Experimental and Control Group A, indicates reinforcement can bring about a desired verbal set of responses that is applicable to complex settings and not restricted to concisely defined laboratory settings.

Some factors which may have influenced conditioning rate and concurrent difference in the two groups of counselees are presented for discussion and inspection: (1) the difficulty of determining specifically which reinforcement

variable was instrumental in conditioning, i.e., verbalized reinforcement or the counselor's writing down of the subject's action directed response; (2) the possibility of a sex variable, i.e., female subjects conditioning more readily than male subjects (or vice versa) and thus accounting for the total group difference; (3) the rate of verbalization increasing as a function of reinforcement, therefore, conditioning results in the Experimental Group may be a function of "having talked more;" and (4) pre-operant differences in the two groups that favored the Experimental Group.

Reinforcement complex. Since every verbal reinforcement was accompanied by the written recording of the client's action-directed response, the task of discriminating the relative effectiveness of one or the other of the two reinforcement variables appears to be difficult. Since the writing of the counselee's expressed idea was always preceded by a verbal reinforcement, it would seem that verbal reinforcement could operate as a discriminative stimulus leading to the other component of defined reinforcement in the study, i.e., written recording by the experimenter of the action-directed responses. In this sense, either or both reinforcement variables could be instrumental in effecting conditioning.

Sex variable. Krasner has suggested in summary that

the examiner variable could be instrumental in effecting results of verbal conditioning studies. This suggests an area for investigation in terms of the present study, e.g., difference in conditioning results of the sexes.

A comparison was made of the total number of action directed responses between sex groups in the Experimental Group and also, in Control Group A. The male group mean of the Experimental Group (53.5) was compared to the female group mean of the Experimental Group (60.71) using the *t* test for independent observations. The resulting *t* of .814 failed to reach significance. The male group mean of Control Group A (28) was compared to the female group mean of Control Group A (26.4) using the *t* test for independent observations. The *t* of .273 yielded no significant difference in the sexes of Control Group A. The mean action directed responses and resulting *t*'s suggest sex difference as a variable was not operating to influence the overall difference in the two groups.

Rate of Verbalization. The possibility exists that conditioning may have resulted from two factors: (1) amount and rate of subject's verbalization and (2) time spent in the counseling process.

An attempt was made to assess the rate of each subject's verbalization by beginning at the mid-point of the

second interview and counting the number of words used by each subject over the following 10 feet of tape. Rater reliability was obtained using the Pearson Product Moment correlation between the examiner's judged total and an independent judge's total (graduate student, counselor training program). Since reliability was high (r of .945) the midpoint of the two judgements was used to obtain rate of verbalization scores that could be submitted to the test of significance.

Comparisons were made between the Experimental Group and Control Group A using the t test for independent observations. Further comparisons were made between sexes in Control Group A and also, between sexes in the Experimental Group. The mean score for the Reinforcement Group (97.15) when compared with the mean score of Control Group A (113.15) failed to produce a significant difference with a t of 1.38. The mean of the male group (108.67) was compared with the mean of the female group (87.28) for the Experimental Group. The resulting t of 1.52 fails to disclose any significant difference in rate of verbalization in the two groups. For Control Group A, the mean for the male group (112.8) was compared with the mean of the female group (113.4). The t of .032 revealed no significant difference in the two groups.

Closely related to the rate of verbalization as being instrumental in effecting conditioning is the total time spent with each subject. If a subject talks more and longer it would seem that they would be likely to emit more action directed responses. In order to investigate this possibility, a Pearson Product Moment correlation was calculated between total footage used and total number of action directed responses for subjects in the Experimental Group and also, subjects in Control Group A.

The correlation between these two variables in the Experimental Group was .621, significant at the 5 per cent level which suggests moderate relationship. For Control Group A, the correlation was .576, also significant at the 5 per cent level. The r of .576 yielded a standard error of .185 which makes it easily in reach of the correlation of .621 found in the Experimental Group.

The closeness of the obtained r's suggest little or no difference between the two groups of subjects in length of interviews as related to obtained action directed responses. Conceptually, Control Group A could be thought of as a control for the influence of time spent in relation to obtained action directed responses. If action directed responses were significantly higher in another group of subjects, it would be expected that this same group would also have spent a significantly longer time in the counseling process. Since

the Experimental Group emitted a significantly higher number of action directed responses and since the mean footage difference of tape used was 18 feet in favor of Control Group A, there does not appear to be evidence supporting the variable of time spent as being instrumental in obtaining significant differences in conditioning level.

Pre-operant level. It might be expected by chance to obtain a significant difference in action directed responses between the two groups as a function of a pre-disposition of one group to give such responses. Since the primary control used in this study was an equated group approach, no precise control was exercised over this variable. An attempt was made later however, to obtain some measure of pre-operant level of action directed response emission for each of the groups in order to investigate this possibility.

A review of the rating forms was conducted to determine the mean footage marking of the first judged reinforcement for the subjects in the Experimental Group. The total number of action directed responses occurring prior to footage marking 11 (mean) for each group was recorded. The mean number of action directed responses occurring before the mean footage marking of the first reinforcement for the Experimental Group (1.77) was compared to the mean number of action directed responses of Control Group A (1.15) using

the t test for independent observations. The resulting t of 1.15 fails to disclose any significant difference in the two groups. The above analysis would suggest the pre-operant level of response emission was not a significant factor in accounting for the difference in conditioning, however, future studies would probably benefit by utilizing a longer pre-operant period thus making certain of group pre-operant equivalence in order to effect better control of this important variable.

It appears that reinforcement defined as indicated in Chapter I brings about an expression of a greater number of possible things to do for an individual who is struggling with study habits problems. The alleged permissive reflection of neutral statements which may, in effect, be perceived as partial reinforcement by the client, does not appear to elicit greater ideation concerning possible actions or solutions.

II. RELIABILITY OF JUDGED RESPONSES

The reliability of judgements, the experimenter with each of five raters, in all categories of the rating form were significantly high. Historically, the tape protocol is generally transcribed and typed in order to establish reliability of scoring. The results of this study suggest it is possible to obtain high reliability without the expense

and time involved in lengthy transcription. It is also suggested that rater reliability may be increased by listening to as well as reading of tape protocol. The emotional feeling and tone evident in the verbal protocol cannot be captured in a typed transcript, and it is suggested that these elements may be just as important in judging client change as what is actually said.

From inspection of the reliability coefficients, it is suggested that researchers make sure of their directions to judges by utilizing practice sessions to establish a common frame of reference. In one instance a lowered reliability coefficient seems attributable to the researcher's failure to clearly establish this common frame of reference. A superior method of checking reliability would have involved three way checks with staff against staff, however, staff involvement in other responsibilities precluded their further availability.

III. ATTITUDINAL CHANGE - BROWN-HOLTZMAN STUDY HABITS INVENTORY

The results of the study indicate both groups of counselees failed to show significant improvement in attitudes toward study habits problems as rated by themselves. Control Group B, who did not receive counseling assistance also demonstrated no change in study habits as rated by themselves.

The lack of a positive change in the two groups who received counseling assistance might be explained in two ways. First, the relatively short period of time where counseling assistance was given as well as time for change to take place might have been insufficient to modify attitudes which have been developed over a long period of time. Reed has suggested (15:464) that concept formation involves the following three steps: (1) a period of doubt and orientation, (2) a period of search and trial solutions, and (3) a period of evaluation and checking. If the development of attitudes is contingent upon building concepts, it would seem the time element could be very critical in getting measures of attitudinal change.

With respect to the second rationale, the possibility exists that those students who received counseling assistance might have become hypercritical in terms of self-evaluation. In other words, a superficial insight into awareness of study habits problems may have predisposed them to become more critical (or realistic?) in self-rating, thus leading to a perception of a study habits problem which is out of proportion or non-veridical. However, having gained this initial self-critical outlook, the student might be predisposed towards solving some of his study habits problems which may show up over an extended period of time. Further research of a longer duration would be necessary to substantiate this hypothesis.

IV. BEHAVIORAL CHANGE - ACHIEVEMENT TESTS, QUIZZES AND EXAMINATIONS

The data collected in this dimension of the study revealed no significant differences in the three groups in terms of manifest behavioral change. Both groups who received counseling assistance failed to show improvement in achievement test performance in the quizzes developed to assess this criterion. Control Group B, who received no counseling assistance, also showed no change in mean score in achievement test performance as measured by the quizzes.

With the course examinations as criterion for achievement, the Experimental Group failed to show significant change in terms of mean score. Both Control Group A and Control Group B demonstrated no change in mean scores with the course examinations as criterion for achievement.

The general trend of the results of this investigation suggest that permissive counseling with the addition of reinforcement has some positive effect on the change of verbal behavior. In the dimension of other behavioral change, no significant difference was found and further research over a longer period of time is recommended in order to gain a more comprehensive and empirical understanding of the specific behavioral effects of permissive counseling with the addition of reinforcement.

It is sometimes hypothesized that successful Rogerian counseling involves a time factor which may be out of proportion to the realities of educational settings and needs. This is not to deny the desirability or effectiveness of the pure application of a more permissive philosophy and technique but rather to point in the direction of a system which "speeds up" the process (or part of it) more in keeping with the dictates of necessity in education.

Theoretically, if the counselor or teacher can proceed with the basic Rogerian principles and additionally, specific application of reinforcement, the process of behavioral modification in keeping with the client's need for individuality and self-direction may be facilitated (at least on the verbal level). Again, the dimension of more extensive behavioral change involves the need for further research.

CHAPTER VI

SUMMARY

The purpose of this study was to investigate the principle of reinforcement apart from the usual well controlled laboratory setting to an application within a conventional counseling setting. Specifically, an attempt was made to use a permissive approach to counseling plus systematic reinforcement in order to condition self-initiated, action-directed verbal responses focused around study habits problems. A further attempt was made to determine the effects of conditioning as it influences other behavioral change measured by regular course achievement tests and a study habits inventory.

Three groups of general psychology students were utilized as subjects. The Experimental Group received permissive counseling and the use of reinforcement while Control Group A received permissive counseling of a non-directive or client-centered nature. Control Group B did not receive counseling but functioned as an additional control.

The results of the study indicate a significant difference in one dimension of the counseling approaches. Verbal conditioning of action oriented responses was effected utilizing the permissive approach and reinforcement that was significant beyond the .001 level of confidence. High

reliability was obtained between the experimenter and five independent judges who were asked to rate tape protocols. The reliability coefficients in three categories (Reinforcement, Action Directed Verbal Responses, Present, and Action Directed Verbal Responses, Other) ranged from .531 to .99 and were significant beyond the .001 confidence level when subjected to the Fisher z conversion.

Both groups of subjects who received counseling assistance showed no significant change in study habits attitudes. The group who received no counseling also failed to show significant attitudinal change.

The two groups of subjects who received counseling assistance showed no significant change in mean scores of the quizzes developed as one behavior criterion. The third group, who received no counseling assistance, failed to show significant change on quizzes in the pre- and post-test measurement. With the course examinations as another criterion for behavioral change, the Experimental Group again showed no significant change in mean score on the pre- and post-test measurement while the two control groups also showed no significant improvement. All attitudinal and behavioral assessments failed to yield any significant differences when subjected to analysis on an inter- and intra-group basis.

The results of the study support the hypothesis that verbal conditioning of action directed verbal responses can

be effected in the context of a counseling situation. However, the study fails to support the hypothesis that verbal behavior transfers to other overt behavior as measured by assessment devices. This latter dimension of the research suggests an area for further study in order to ascertain more specifically any effects of verbal conditioning on the change of other overt behavior.

Theoretically, the necessity or desirability of a permissive approach to counseling which sometimes conflicts with the time dictates of education, might be handled by applying reinforcement to those desirable and appropriate behavioral responses spontaneously expressed by the counselee or student in the classroom. This study supports the obtaining of at least verbal expression of client action directed responses. Thus, it would appear that the basic tenets of a permissive technique and philosophy of the inner strength of the individual will not be violated but rather facilitated by the suitable application of reinforcement.

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APPENDICES

APPENDIX A

DISTRIBUTION OF RAW SCORES ON THE BROWN-HOLTZMAN STUDY HABITS INVENTORY AND WASHINGTON PREDIFFERENTIAL GRADE PREDICTION SCORES FOR THE EXPERIMENTAL GROUP

Subject	Brown-Holtzman	Wash. Pre. Grade Pred. Scores	Sex
1	24	1.7	M
2	21	1.7	M
3	26	1.5	F
4	18	1.9	F
5	26	2.2	F
6	22	-	F
7	27	2.1	F
8	14	2.0	F
*9	31	2.0	F
10	16	2.3	F
11	27	1.6	M
12	22	1.5	M
13	15	2.1	M
14	13	1.7	M
*15	39	1.9	M
	341	26.2	
	$\bar{X} = \frac{X}{n}$	$\bar{X} = \frac{X}{n}$	
	$= \frac{341}{15}$	$= \frac{26.2}{14}$	
	$= 22.73$	$= 1.87$	
Adjusted mean Score	20.85	1.86	

*Dropouts

DISTRIBUTION OF RAW SCORES ON THE BROWN-HOLTZMAN STUDY HABITS INVENTORY AND WASHINGTON PREDIFFERENTIAL GRADE PREDICTION SCORES FOR CONTROL GROUP A

Subject	Brown-Holtzman	Wash. Pre. Grade Pred. Scores	Sex
1	20	1.5	F
2	30	2.2	M
3	27	1.5	F
4	25	2.1	F
5	24	1.5	M
6	30	2.5	F
7	13	1.9	F
*8	23	1.9	M
9	32	2.2	F
10	15	2.1	F
*11	21	1.8	M
12	15	1.3	M
13	20	1.6	M
14	28	2.3	F
15	29	1.9	M
	352	28.3	
	$\bar{X} = \frac{X}{n}$	$\bar{X} = \frac{X}{n}$	
	$= \frac{352}{15}$	$= \frac{28.3}{15}$	
	$= 23.47$	$= 1.89$	
Adjusted mean Score	23.69	1.89	

*Dropouts

APPENDIX B

SUMMARY GUIDE SHEET USED IN THE COUNSELING INTERVIEW

Introduction. You have been selected from a group of volunteers to receive some counseling assistance in the area of study habits. This particular type of counseling attempts to make use of your talents in arriving at a solution -- in other words, I prefer not to function as an advice giver. Perhaps so that we both can gain a better understanding of the total picture it would be best if you would explain your situation as you see it . . . (How would you describe your study habits procedure) (Would you like to talk about your study habits) (Would you like to talk more about your present situation)?

Tape Recorder. The tape recorder is used for my benefit in reviewing our counseling sessions -- please feel free to say anything you like. The tape is completely confidential.

Brown-Holtzman. You seem to feel you are not doing as well as you might be able to do.

Clarification. The following statements were utilized as guides for clarification and reflection: (1) Would you explain further, (2) Can you tell me more about this, (3)

Hmm - would you clarify that, (4) Pause . . ., (5) I'm not sure I understand . . ., and (6) You feel as though . . .

Reinforcement. The following statements were followed as a guide for verbal reinforcement: (1) Yes, that sounds good, (2) That sounds like a good idea, (3) This is a good approach, (4) Yes, that sounds like a good move, (5) That has a lot of merit, (6) Good!, (7) That sounds like a real solid idea, and (8) Paraphrase - get affirmative and agree.

APPENDIX C

RATER FORM - STUDY HABITS COUNSELING RESEARCH

_____ Interview, 1st, 2nd, 3rd

1. Rate by marking footage in the appropriate column.

2. Some action-directed responses may be over several feet of tape, not necessarily discrete entities, mark 5-10, while others may be fairly discrete, mark 5.

Reinforcement	Present & Future Tense	Past Tense	Negative Reference	Indefinite and implied

Past Tense - Illustrated by "I've taken some reading courses" "I used to outline"

Negative Reference - "I don't study like I should," "I don't read fast enough"

Indefinite & Implied - "If I could just apply myself," "I've got to do something"