EFFECT OF INTERPERSONAL ANXIETY REDUCTION, SELF - EVALUATION REINFORCEMENT, AND OVERT SELF - REINFORCEMENT AVAILABILITY ON COLLEGE STUDENT SUBSEQUENT SELF - EVALUATION AND SELF - REINFORCEMENT RESPONSES

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ABSTRACT

EFFECT OF INTERPERSONAL ANXIETY REDUCTION, SELF-EVALUATION REINFORCEMENT, AND OVERT SELF-REINFORCEMENT AVAILABILITY ON COLLEGE STUDENT SUBSEQUENT SELF-EVALUATION AND SELF-REINFORCEMENT RESPONSES

By

Lyman Thair Rate

The purpose of this study was to explore further self-evaluation and self-reinforcement response habits which have been identified as important aspects of self-control processes. More specifically, this study was designed to investigate the effect of (a) interpersonal anxiety reduction, (b) selective self-evaluation reinforcement, and (c) overt self-reinforcement availability upon subsequent self-evaluation and self-reinforcement responses.

The independent variable, interpersonal anxiety reduction, involved a procedure combining muscle relaxation and imagination of anxiety-provoking interpersonal situations. The self-evaluation reinforcement treatment variable consisted of a "counselor's" verbal and nonverbal expression of approval contingent upon either the subject's positive or negative (above or below average) self-evaluation rating questionnaire review procedure. The

treatment variable, overt self-reinforcement availability, involved the presence of "reward" and "no reward" poker chips to be self-administered at the discretion of the subject following each response evaluation emitted during a measurement task procedure. Dependent variables consisted of (a) frequency of positive self-evaluations, (b) self-evaluation independence (number of evaluation disagreements between S and confederate), and (c) self-reinforcers administered. Each dependent variable was recorded during the measurement procedure which involved an ambiguous word-association judgment task in which both the subject and a confederate overtly evaluated word-associations emitted by the subject.

It was hypothesized that (a) increased interpersonal anxiety reduction would result in an increase in the frequency of positive self-evaluations in accordance with Aronfreed's (1964) hypothesized relationship between anxiety level and self-criticism, an increase in the number of confederate-subject disagreements (self-evaluation independence), and an increase in the number of self-reinforcers administered; (b) direct self-evaluation reinforcement would differentially effect the subsequent frequency of positive self-evaluations and self-reinforcers administered; and (c) the availability of overt self-reinforcers would result in more frequent positive self-evaluations emitted.

Forty-eight Michigan State University male student volunteers served as subjects for this experiment. Subjects were assigned randomly to one of the 12 cells generated by a 2 X 2 X 3 factorial design. This design consisted of two levels of Interpersonal Anxiety Reduction (Relaxation, Control), two levels of Overt Self-Reinforcement (SR, No SR), and three levels of Self-Evaluation Reinforcement (Above Average, Control, Below Average). Each S received one level of each of the independent variables, and these treatments were individually and consecutively administered.

Analysis of variance procedures were used to assess treatment effects. It was found that interpersonal anxiety reduction group differences were not significant with respect to (a) positive self-evaluations, and (b) evaluation disagreements. The relaxation group, however, administered significantly more frequent self-rewards than the control group. No significant differences were shown for the self-evaluation reinforcement groups with respect to either (a) positive self-evaluations, or (b) self-reinforcements. Overt self-reinforcement groups were found not to differ significantly with respect to positive self-evaluations.

Aronfreed, J. The origin of self-criticism. Psychological Review, 1964, 71, 193-218.

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By

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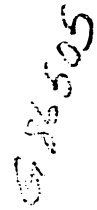

TO JANE AND ELIZABETH

ACKNOWLEDGMENTS

I would like to express my thanks to all the persons (Table A) who contributed time and effort to this project. Their help was greatly appreciated and responsible in many ways for the success of the investigation.

I am especially grateful to Dr. Richard Johnson whose creative thought, advice, and encouragement were invaluable.

TABLE A.--Individuals Who Contributed.

Roles	Participants
Committee Chairman	Richard G. Johnson
Committee Members	William A. Mann Herbert M. Burks Samuel A. Plyler Louis C. Stamatakos George R. Myers
Confederates	Tom Hoffman David Fitch Geof Yager
Pilot Participants	Pam Highlen Sherry Gallagher Jane Finks
Scheduling Aid	Christa Forrester
Data Analyst	Linda Glendening

In addition, my wife, Jane, deserves a good deal of credit for the successful completion of this task, and I thank her for her many tangible and intangible contributions.

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CHAPTER I

RATIONALE

Need

Behavior change processes have received a great deal of attention, but what perhaps is the most important aspect, the generalization of behavior patterns to new situations and their persistence once the original controlling conditions have been discontinued, has been neglected (Bandura, 1969). Several researchers (Bandura, 1969; Cautela, 1969; Kanfer, 1970; Kanfer & Karoly, 1972; Mahoney & Thoresen, 1972; Marston, 1965; Marston & Feldman, 1972) have focused attention on self-control or regulation and have identified self-evaluation (SE) and self-reinforcement (SR) as major variables or components involved in the behavior maintenance process. Self-evaluation and self-reinforcement patterns have been shown to be modifiable by a variety of experimental conditions, but such changes have not been demonstrated to persist when conditions are altered and little effort has been made to explore factors related to their independence or resistance to external influence.

Self-reinforcement administration is thought to be dependent upon specific self-evaluations; i.e.,

positive or favorable performance evaluation leads to a reward while negative or unfavorable evaluation leads to a punishment. Therefore, the maintenance of independent self-evaluations should virtually guarantee continued administration of appropriate self-reinforcements in the presence of conflicting or inappropriate external evaluative feedback and thus promote or maintain self-regulated behavior patterns. Hence, there is a need to identify experiences or factors which enhance appropriate self-evaluative response habits and render them more fully independent of external sources of influence.

Purpose

The primary purpose of this study was to investigate whether a person's self-evaluation habits can be influenced by: (a) interpersonal anxiety reduction; (b) prior selective self-evaluation reinforcement; and (c) availability and administration of overt self-reinforcers. An additional purpose was to assess the effects of interpersonal anxiety reduction and prior selective self-evaluation reinforcement on subsequent rates of self-reinforcement administration.

The independent variable, interpersonal anxiety reduction, involved following the instructions of a tape recorded general muscle-relaxation procedure in order to achieve a relatively relaxed state, and then

alternately imagining specific interpersonally anxious scenes and focusing attention on continued relaxation. The scenes imagined consisted of a variety of situations in which the person's self-evaluations were open to critical scrutiny or came into direct conflict with the evaluations of others.

The second independent variable, self-evaluation reinforcement, involved an interview-like procedure designed for the selective administration of positive verbal and non-verbal reinforcement contingent upon either (a) positive self-evaluations (above average ratings), or (b) negative self-evaluations (below average ratings) within the context of a general self-evaluation rating questionnaire review.

The third independent variable, availability and administration of overt self-reinforcers, consisted of "reward" and "no reward" poker chips, one of which was to be chosen on each trial of a word-association task dependent upon S's evaluation of his performance on that trial, i.e., whether or not he felt that his association was "deserving" of a reward.

Dependent variables were the frequency of: (a) positive self-evaluations emitted; (b) disagreements between S evaluations and those of a participating "confederate"; and (c) self-reinforcements administered, during an ambiguous word-association judgment task.

The present study was designed to provide additional information regarding the establishment of self-evaluative response habits and their subsequent effect on the individual's overt self-evaluative responses and self-reinforcement frequencies in situations where task criteria are ambiguous and incongruous external evaluative influences are present. In addition, it was hoped that results of this study would reveal further information concerning the self-reinforcement and self-evaluation interrelationship which appears to be crucial to successful behavior self-control or regulation processes.

Theory and Supportive Research

Self-Control

Theorists, researchers, and practitioners have long been concerned with self-control (regulation, management), but have focused primarily upon the identification of intervening variables such as conscience, super-ego, will power, etc., as internal causation explanations. Recently, however, such concepts have been viewed by many as relatively useless, and as Mahoney and Thoresen (1972) stated, " . . . the volitional approach has seriously impaired the collection and interpretation of knowledge about self-management" (p. 5). Whereas strict behavioristic and humanistic approaches have in the past limited their focus exclusively to either Man's subjective experiences or objective

overt behaviors, the present movement attempts a more adequate integration of both aspects which have long been recognized by many (May, 1967, for example) as being inextricable.

The concept of self-control has been defined in a variety of ways (Cautela, 1969; Homme, 1965; Kanfer, 1967; London, 1969; Mahoney & Thoresen, 1972; Marston & Feldman, 1972; Skinner, 1953), but there is agreement that it basically refers to the process whereby the individual manipulates internal and/or external variables upon which the probability of a specific behavior depends in order to either increase or decrease the likelihood of his behaving in a certain way. The present conceptualization does not exclude internal or private events (experiences), and in fact " . . . the critical antecedent conditions and even the behavioral components in a self-controlled sequence may lie entirely in the domain of private experience . . ." (Kanfer, 1970, p. 179). Current efforts, then, do not aim at non-recognition or denial of anything but objectively observable and precisely measurable variables, but rather a more clear and research-amenable conceptualization of both the internal and external components involved.

Mahoney and Thoresen (1972) view the self-control process as generally involving (a) specification of a behavior, (b) identification of antecedent cues and

environmental consequences, and (c) alteration of some of the antecedents and/or consequences. They have identified three major self-regulation approaches " . . . at least one of which has been present in every successful self-control attempt thus far reported" (p. 6). Each will be described briefly below.

The first strategy is to increase awareness through self-observation or monitoring. The individual attends to and records his behavior thereby checking himself and evaluating his progress. In this way he receives both immediate and cumulative feedback about what he is or is not doing, and if the data indicate that the person is changing in the desired direction, he then has good reason to feel positive about himself, i.e., he receives immediate reinforcement. Research evidence to date indicates that self-monitoring is reactive and can have a significant and at times dramatic effect on either increasing or decreasing a variety of target behaviors. Such behaviors include smoking (McFall, 1970; McFall & Hammen, 1971), obsessive negative self-thoughts (Mahoney, 1971), hallucinations (Rutner & Bugle, 1969), dating (Johnson & White, 1971), trichotillomania (Bayer, 1971), parental attending to hyperactive children's appropriate behaviors (Bolstad & Johnson, 1972), and study behavior (Broden, Hall, & Mitts, 1971).

Altering the environment or environmental planning is the second strategy identified by Mahoney and Thoresen. Here the cues which precede the target behavior are altered by some environmental manipulation. Slowing the pace of eating, making snacks less accessible, eating only at specified places, avoiding cigarette machines, and restricting smoking to locations removed from familiar cues are examples of environmental manipulations designed to disrupt old conditioned response chains and reduce the frequency of eating and smoking. Stuart (1967) is one investigator who has heavily emphasized the environmental planning approach to self-control.

The final strategy, altering behavioral consequences or behavior programming, relates more specifically to the present study, i.e., self-reinforcement. In this case the individual actively manipulates certain results of the behaviors he is attempting to control. The manipulation may involve external (overt) consequences such as rewarding certain behaviors by allowing oneself to buy a new article of clothing or eat out at a favorite restaurant, or internal (covert) consequences such as praising or criticizing oneself or thinking pleasant or unpleasant thoughts. Internal or covert reinforcement, for example, has received recent attention and there is evidence which lends support to the ideas that positive and negative covert thoughts or images can significantly affect

self-concept (Krop, Calhoon, & Verrier, 1971); alter attitudes toward the retarded (Cautela, Walsh, & Wish, 1970) and the elderly (Cautela & Wiscocki, 1969); reduce phobic behaviors (Flannery, 1970; Lazarus & Abramovitz, 1962), alcoholic intake (Ashem & Donner, 1968) and smoking (Mullen, 1968); eliminate compulsions (Cautela, 1966) and stuttering (Cautela, 1971); and alter delinquent behaviors (Cautela, 1971).

Kanfer and Karoly (1972) have presented a self-control model which they refer to as Beta-regulation. It is a "closed-loop" model which they explain as follows:

> When conditions are such that behavior chains are not run off smoothly, (for example, when a choice point is reached or an external event interrupts and refocuses attention, or if the activation level suddenly changes) self-monitoring is hypothesized to go into operation. Utilizing the input from the external environment as well as response-produced cues (verbal-symbolic, proprioceptive, or autonomic), the person is in a position to self-evaluate, i.e., to make a discrimination or judgment about the adequacy of his performance relative to a subjectively held standard or comparison criterion. Within the limits of an individual's social learning history and current situational factors, the judgment serves as an S^D either for positive self-reinforcement (SR+), if the outcome of the comparison was favorable, or for self-presented aversive stimulation (SR-), if the comparison was unfavorable. Thus, behavior is maintained or altered by self-reinforcements, relatively independent of current alpha [external] variables (p. 406).

While Kanfer and Karoly appear to be in basic agreement with Mahoney and Thoresen, they seem to place their emphasis on the role of supplementary self-reinforcement

contingencies in the alteration of the ongoing behavioral chain.

The above authors and others (Marston & Feldman, 1972; Bandura, 1969; Cautela, 1969) have attempted to conceptualize self-control processes in increasingly coherent and meaningful ways, and their efforts have served to organize existing relevant experimental data and provide impetus as well as direction for future research. While the emphasis of theoretical analysis tends to vary among authors, there would seem to be unanimity concerning the present and future importance and potential of self-regulatory processes both in terms of everyday living and clinical application.

Kanfer and Karoly, for example, believe that increasingly rapid changes in life settings, increased availability and exposure to varieties of models and life-styles, and decreasing behavioral consistency of socializing agents, make it imperative that attention be given to identifying conditions which will foster the individual's development of self-generated motivations and standards in order that he might continue to maintain some semblance of behavioral consistency in the future.

On the clinical side, the development of more effective self-management skills in the individual should decrease the counselor's need to rely on external controls (Yates, 1970), facilitate behavior maintenance in

situations where there is weak environmental support or counteracting punishments for the alternative behaviors (Bandura, 1969), and diminish the number of passive, "you help me" clients as well as, ultimately, the need for professional helpers (Mahoney & Thoresen, 1972).

Elson (1972) stated in his thorough review of the self-control literature that basic research has lagged far behind the practical application of self-control procedures. Thus, with few exceptions, concrete empirical data are somewhat lacking in terms of both the identification of specific relevant variables involved and their interrelationships and influences.

Self-Reinforcement

Self-reinforcement is one of the self-control variables which has received a good deal of research attention. It has been variously defined by several authors (Bandura, 1969, p. 32; Kanfer, 1970, p. 190; Marston, 1964, p. 879) and basically involves the self-generated administration of a reinforcing stimulus which is contingent upon a self-defined criterion of performance. Self-reinforcement is central to self-control because self-reinforcers are assumed to be nearly always available and can be administered independent of external sources of control.

As noted above, self-reinforcers can be either internal or external. While there is an array of external

reinforcing stimuli usually available, there are also internal or covert cognitive thoughts and images related to pleasant and unpleasant experiences upon which individuals can draw. These thoughts and images include self-referents or self-evaluative (approving or critical) contents which appear to have significant intrinsic reinforcing potential.

It is generally felt that internal self-reinforcement responses develop initially in a social learning context. The child is rewarded or punished by the socializing agents (parents, teachers, policemen, etc.) for exceeding or falling below particular standards, and verbal responses such as "I did well" or "I did poorly" come to be associated with these external punishing and rewarding experiences. Such verbal responses eventually serve as discriminative stimuli in whose presence external reinforcement has had a high probability of occurrence, and thus acquire secondary or conditioned reinforcing properties (Kanfer, 1970). In this way people likely develop, to a greater or lesser extent, large internal repertoires of equivalent self-reinforcing responses (Kanfer & Marston, 1963b) which allow them to learn as well as maintain behaviors in the absence of immediate external reinforcement (Marston, 1967; Kanfer & Duerfeldt, 1967; Marston & Kanfer, 1963).

Most of the self-reinforcement research has been generated by Kanfer, Marston, and their associates utilizing a "directed learning" paradigm involving a two-stage procedure. During the first phase the subject is exposed to a learning or pseudo-learning task and is administered either contingent or noncontingent reinforcement or punishment. During phase two (self-reinforcement condition) S is instructed to take over the experimenter's function and continue to administer the reinforcing stimulus (frequently having no apparent intrinsic reward value, e.g., light flash, button press, etc., other than that which is derived from its association with E's former evaluations) whenever he thinks he has responded correctly. In this way variables controlling the incidence of SRs, the motivational properties of SR, and the relationship between SR behavior and other dependent variables can be investigated (Kanfer, 1970).

Among the relevant variables which have been tentatively identified with this research paradigm are prior reinforcement experience (Kanfer & Marston, 1963a), type of reinforcement (Marston, 1964), incentive levels (Marston & Kanfer, 1963), and task competence (Kanfer, Bradley, & Marston, 1962). In addition, SR rates have been shown to be amenable to modification in the laboratory by direct external reinforcement for their emission (Kanfer & Marston, 1963a), altering the stringency or leniency of

specified criteria (Marston & Kanfer, 1963), and exposure to differing model behaviors and traits (Bandura & Kupers, 1964).

Self-Evaluation

Evidence indicates that people differ significantly in their tendency to administer self-rewards on a strict or more lenient schedule (Bartol & Duerfeldt, 1970; Kanfer, Duerfeldt, & LaPage, 1969), and efforts have been made to associate SR habits with certain personality traits (Bartol & Duerfeldt, 1970; Bellack, 1972; Haynes & Kanfer, 1971; Marston & Cohen, 1966; Poultney, 1970; Reschly, 1971; Uhnes & David, 1971). No meaningful picture, however, has yet emerged. Nor is it clear that such SR rate differences are a direct function of corresponding variations in self-evaluation habits.

While self-evaluation has been recognized by Bandura and Whalen (1966), Marston (1965), and others as providing a mediating link between previously socially regulated experiences and a person's tendency to administer self-reinforcements, surprisingly little effort has been made to explore thoroughly this relationship. Cautela (1965) and Aiken, Dicken, and Grossberg (cited by Kanfer, 1970) have provided some evidence that changes in a persons's self-evaluations do not necessarily result in modification of other behaviors, i.e., rewarding and punishing habits. Kanfer and Duerfeldt (1967) reported

results which indicated that the rate of self-punishment was more a function of prior experience (E's administration of punishment) than self-evaluations. The data concerning the relationship between self-evaluation and self-reinforcement are obviously meager, and further research is necessary.

The self-evaluation and self-reinforcement relationship is of particular interest to the counselor or psychotherapist because, as Kanfer and Duerfeldt (1967) pointed out:

> The demonstration of intrinsic relationships between a person's self-perception and his subsequent self-reinforcing behaviors would bolster the hypothesis that therapeutic interventions aimed at changing the self-concept can be expected to bring about changed criteria for self-rewards and self-punishment, thereby influencing directly the consequent behaviors (p. 164).

It has also been suggested (Kanfer, 1970) that certain more general behavior disorders might well be related to habitual self-evaluation and consequent self-reinforcement patterns. Depressions, for example, might result from retarded behavioral output due to insufficient self-initiated feedback, while neurotic disorders could stem from indiscriminate self-criticism and the grandiose personality from indiscriminate self-rewarding behaviors.

Assuming that self-reinforcement is a function of self-appraisal or evaluation, then self-regulation should be more effective when the individual is sufficiently familiar with the task to provide himself with

accurate objective feedback about the adequacy of his behavior. The problem of self-control, of course, appears to be more critical in situations where success criteria are ambiguous, and it would seem reasonable that under these circumstances any SR administration would be entirely dependent upon habitual self-evaluation standards.

Self-evaluative and self-reinforcing responses also have important implications for the maintenance of behaviors in the face of conflicting environmental feedback, i.e., externally supplied evaluations which are contrary to one's own evaluations based on immediate standards, experiences, or expectations. One of the most important research goals, according to Bandura (1969), is to develop strategies for enhancing self-regulatory mechanisms which " . . . render behavior partially independent of specific situational contengencies and outcomes" (p. 617).

Hypotheses

Anxiety reduction has been postulated by Aronfreed (1964) as a major cause of predominantly negative self-evaluation habits. That is, he believes that one important function of self-criticism is to inhibit anxiety associated with anticipated punishment stemming from social disapproval. If self-critical evaluations do reduce anxiety when a person anticipates punishment from another person, i.e, derogatory comments, rejection, etc.,

then the frequency of such self-critical responses should decrease as the level of anxiety decreases. Conversely, the frequency of self-approving responses or behaviors should increase as the level of anxiety decreases. To investigate the relationship between interpersonal anxiety and self-evaluation the following hypotheses were formulated:

I. Subjects who receive the interpersonal anxiety reduction treatment will emit more frequent positive self-evaluations in the presence of a confederate's predominantly critical evaluations during an ambiguous word association judgment task procedure than those Ss who receive the control experience (nonrelaxation).

II. Subjects who receive the interpersonal anxiety reduction treatment will emit more evaluations which disagree with those of a confederate during an ambiguous word association judgment task procedure than those Ss who receive the control experience (nonrelaxation).

Investigations have indicated that self-evaluations can be significantly influenced by the experimenter's favorable and unfavorable evaluations of S's performance during an experimental "training" phase (Kanfer & Duerfeldt, 1967; Kanfer & Duerfeldt, 1968), and that self-reinforcement rate can be altered by direct external reinforcement (Kanfer & Marston, 1963). Self-approving and self-critical responses have not been found to be reciprocal, however, and there is some evidence that changes in self-reinforcement frequency may be independent of self-evaluations. Kanfer (1970) concluded,

> research findings suggest that separate modification of each of these behaviors may be necessary in therapy, and corresponding changes in a person's self-evaluations, self-reinforcing behaviors and instrumental behaviors cannot always be taken for granted (p. 203).

The following hypotheses were formulated to investigate the effectiveness of a specific self-evaluation reinforcement procedure with respect to altering subsequent self-evaluation and self-reinforcement behaviors.

III. Subjects who receive positive reinforcement for "above average" self-evaluations emitted during a general personal trait and interest assessment interview will give more frequent positive self-evaluations during an ambiguous word association judgment task than those subjects who either receive no reinforcement for their self-evaluations or receive positive reinforcement for "below average" self-evaluations. Those subjects who receive no reinforcement will in turn give more frequent positive self-evaluations than those who receive positive reinforcement for "below average" self-evaluations.

IV. Subjects who receive positive reinforcement for "above average" self-evaluations emitted during a general personal trait and interest assessment interview will administer more frequent self-rewards during an ambiguous word association judgment task than those subjects who either receive no reinforcement for their self-evaluations or receive positive reinforcement for "below average" self-evaluations. Those subjects who receive no reinforcement will in turn administer more frequent self-rewards than those who receive reinforcement for "below average" self-evaluations.

The following additional hypothesis was formulated to further investigate the relationship between self-evaluation and self-reinforcement:

V. During an ambiguous word association judgment task subjects who are allowed to administer overt self-reinforcers following self-evaluations will give more frequent positive self-evaluations than subjects who are not allowed to administer overt self-reinforcers.

The following final hypothesis was formulated to investigate the effect of interpersonal anxiety reduction on the frequency of a person's administering self-reinforcers in the presence of another person who tends to be predominantly critical or disapproving.

VI. Subjects who receive the interpersonal anxiety reduction treatment will more frequently administer self-rewards than those subjects who receive the nonanxiety reduction treatment.

CHAPTER II

METHODOLOGY

Subjects

Forty-eight Michigan State University male student volunteers served as Ss for this experiment. Approximately one-half were solicited from two undergraduate social science sections, one-fourth from one graduate education class, and one-fourth from a student newspaper advertisement. Subjects volunteered on the basis of their willingness to participate in "several short tasks."

The sample consisted predominantly of unmarried, Caucasian undergraduates as can be seen by the available demographic data summarized in Table 2.1. Females were excluded from the sample because of the potential interaction between sex and both the Self-Evaluation Reinforcement treatment and the male confederate influence aspect of the measurement context.

Procedure

Treatments were individually administered and each S received one level of each of the treatment variables: Interpersonal Anxiety Reduction (Relaxation, Control), Self-Evaluation Reinforcement (Above, Control, Below), and Overt Self-Reinforcement (SR, No SR). The

TABLE 2.1.--Demographic Characteristics of the Sample.

Characteristic	Breakdown (Total N=48)				
Age	17-18	19-20	21-22	23 & Above	
	6	24	2	16	
Class standing	Freshman	Sophomore	Junior	Senior	Graduate
	26	6	2	0	14
Marital status	Married	Unmarried			
	9	39			
Ethnic group	Caucasion	Negroid	Spanish American		
	42	5	1		

Interpersonal Anxiety Reduction procedure was administered first, followed by the Self-Evaluation Reinforcement procedure, and finally the Overt Self-Reinforcement variable was manipulated for a short word association task in which the S participated along with a partner (confederate). Following each treatment procedure each S was provided with a short form on which he was requested to evaluate his experience.

Interpersonal Anxiety Reduction

Each S was taken to a small room where the first two procedures were to be administered, and was asked to have a seat in the large easy-chair. The following general instructions were then read:

> I'm investigating new counseling procedures and must find out if they can be easily administered in a reasonable length of time. I'm also interested

> in detecting any difficulties which were not anticipated during their design. In addition, word association habits are being investigated as a possible method of assessment.

The Relaxation group Ss were then given the following additional instructions:

> This first procedure involves the use of relaxation and imagination in dealing with a concern frequently presented by persons seeking a counselor's assistance. Here is a stack of cards (hand S cards) each describing briefly a situation frequently found to be rather unpleasant. Please go through the stack and select the five situations which you can imagine most vividly and which when imagined make you feel somewhat anxious. Separate the five you choose and set the remaining cards aside (wait for S to select cards). Keep these five cards in order and refer to them as the tape instructs. Do you have any questions? Now just sit back comfortably in your chair and follow the taped instructions.

The card "deck" (3 x 5 typed note cards) from which relaxation Ss chose consisted of short descriptions of interpersonal situations which often create a degree of anxiety (Appendix A). The rationale for constructing these "scenes" was based upon Wolpe's use of written and verbal descriptions as facsimiles of actual anxiety-arousing situations or experiences. The recorded instructions (presented on memorex tape via Sony recorder) included relaxation practice of the 19 muscle groups followed by alternating relaxing and focusing imagination on each scene of the five cards chosen (three times per card). The taped voice encouraged S to imagine each scene as vividly as possible as well as relax as deeply as possible. When the procedure, which was approximately

30 minutes in length, was completed, S was instructed to complete the evaluation form on the adjacent table. This form (Appendix C) provided scales on which to record an assessment of the procedure as well as to self-report S's perceived anxiety level prior to, during, and following the relaxation experience.

After the initial general instructions the control group (nonrelaxation) Ss were given the following instructions:

> This first procedure involves the use of imagination. Here is a stack of cards (hand S cards) each describing briefly an experience. Please go through the stack and select the five situations which you can imagine most vividly. Separate the five you choose and set the remaining cards aside (wait for S to select cards). Keep these five cards in order and refer to them as the tape instructs. Do you have any questions? Now just sit back comfortably in your chair and follow the taped instructions.

The card "deck" from which control Ss chose consisted of short neutral scenes designed to elicit a very weak emotional response and little or no anxiety (Appendix A). The control tape recording instructed S to imagine each scene as vividly as possible and then terminate the image. Each scene was imagined three times, and the entire procedure was approximately 20 minutes in length. Upon completion of the control procedure S was also instructed to fill out the evaluation form.

Self-Evaluation Reinforcement

This second treatment procedure was administered in the same room as, and upon the conclusion of, the first. Each S was given the following instructions:

> This next procedure involves the use of a short list of general personal traits and interests designed to help the counselor become familiar with the client more quickly than conventional methods. Please read the instructions (hand rating form and wait). Do not spend a lot of time trying to decide on any one evaluation, but rely on your first impressions where possible. Any questions? (Wait for S to complete form.)
>
> Now, I'd like you to go through the form and tell me your rating for each item. As you are doing that I will try to form as clear a picture of you as I can from that information.

The rating form (Appendix B) consisted of a list of 50 personal characteristics and interests divided into the categories of physical, cognitive, interests, personal and social. Ten items made up every category and S was to divide each 10 into those five on which he evaluated himself as being above average and those five on which he evaluated himself as being below average based on the college student population. In the cases where evaluations did not conform cleanly with the instructions, i.e., S evaluated himself either above or below on more than the five allotted, S was instructed to "force" his evaluations to conform with the task criteria.

The differential treatment was administered during the relating of S's evaluations to the experimenter (E). For those Ss assigned to the "Above" evaluation group E

would attend to, verbally reinforce ("Good," "Fine," "Yes," "Okay," "Uhuh"), ask additional questions about, and reinforce with non-verbal behaviors (sit forward in chair, nod head affirmatively, smile) each personal trait or interest item rated by S as being above average while ignoring those items rated as being below average. For those Ss assigned to the "Below" evaluation group E would attend to, verbally reinforce ("Good," "Fine," "yes," "Okay," "Uhuh"), ask additional questions about, and reinforce with non-verbal behaviors (sit forward in chair, nod head affirmatively, smile) each personal trait or interest item rated by S as being below average while ignoring those items rated as being above average. For those Ss assigned to the control evaluation group, E would attempt to remain silent and non-reactive (maintain prior posture and facial expression, show no special interest, and withhold verbal comment) as each S read through his ratings.

Following the self-evaluation reinforcement treatment procedure each S was given evaluation form B (Appendix C) and was requested to "Use form B to evaluate the use of a list such as the one you just used to convey information about yourself to another person such as a counselor for the purpose of his getting to know you better in a short period of time."

Overt Self-Reinforcement

After the evaluation reinforcement procedure had been completed S was told, "The final word association task is somewhat different from the first two procedures and requires that two of you work together in the next room." The next room was similar in size to the first, and here S was invited to sit in either of two chairs at a small table and was informed that the other person would shortly be finished and ready to go.

Upon seeing through the two-way mirror that the subject and experimenter had arrived at the word association room, the confederate (C), a 20-year-old male college student who had been given prior instructions, made his entrance. The subject and confederate were introduced by E, who "conveniently" forgot C's name, and C was invited to take the other chair across the table from S. Before the instructions were read to the participants, E pretended to decide arbitrarily which person would serve as "recorder" and which would serve as "associator" by merely suggesting somewhat haltingly, "Why don't, ahh, you (pointing to C) be the recorder and, ahh, you (pointing to S) be the associator." This procedure was shown by preliminary information to be both expedient and believable. The following instructions were then given:

> This is a test of the similarity of word associations. A series of words will be presented on tape. After each word the associator--that would be, ah, let's see, you (name of S)--is to respond immediately

> with the most imaginative one-word association that comes to mind. Students at different colleges and universities have previously undergone this procedure and a list of the most frequent associations given by college students has been compiled.
>
> After each association given, the recorder--that would be you (name of C)--is to decide whether or not he thinks the associator's response is among the five most frequently given associations by other students. If you think it is among the top five say 'Yes' and if you think it is not say 'No.' Following that the associator is also to decide whether he thinks his own response is one of the five most frequently given associations by other students. Here again, if you think it is say 'Yes' and if you think it is not say 'No.'
>
> I want you to use this form (hand form to C) to write down all the responses that each of you makes. Just put each response down under the corresponding column.

For those Ss assigned to the self-reinforcement condition, the following additional instructions were given:

> The final thing that you, the associator, are to do is decide whether or not each of your responses is deserving of a reward. (Center reward apparatus in front of associator.) If you decide that it is take a red chip from the box labeled 'reward' and place it in the slot marked 'chips.' If, on the other hand, you do not believe your response is deserving of a reward take a white chip from the box labeled 'no reward' and place it in the slot before you. Take one chip for each response or association.

After the instructions were read and questions answered the tape was started and E left the room. Fifty words were then presented at 25 second intervals, and the entire tape ran for approximately 24 minutes.

While the confederate was presented to each S as an "equal" going through a similar experience, he was in fact working for E and his evaluation responses were

predetermined. Prior to the experiment "Yes" evaluations were assigned randomly among the 50 association words and the remaining 30 were assigned "No" evaluations. The recording forms (Appendix D) were then surreptitiously marked accordingly. Each form had a random assignment of "recorder" responses or evaluations, and the confederate merely responded for each of S's associations depending on how the given form was marked for that trial. In other words, the confederate made no independent evaluations of the subject's associations, but merely responded according to a predetermined random pattern of "Yes" and "No" responses, and thus each S was exposed to the same percentage of positive and negative confederate evaluations.

The confederate did record all of the various responses made by the subject. The positive self-evaluations emitted, evaluation disagreements with C, and self-rewards administered constituted the data to be analyzed.

Immediately following the word association task each S was requested to complete a final procedure assessment form and was then debriefed regarding his experience and the nature of the experiment. The confederate deception was also revealed and it was requested that S not discuss his experience with anyone who would be participating in the future.

Design

A 2x2x3 factorial design consisting of two levels of Interpersonal Anxiety Reduction, two levels of Overt Self-Reinforcement, and three levels of Self-Evaluation Reinforcement was used in this study. Each of the 48 subjects was assigned randomly to one of the 12 cells, thus providing four replications per cell. Control groups were provided for within each treatment variable, and an overall control group was included which received none of the three treatment experiences. The resulting design was both crossed and balanced, and allowed for a three-way analysis of variance. A graphic representation is shown in Table 2.2.

Hypotheses

The following testable hypotheses were formulated in order to test the different treatment effects and interactions:

Ho_1: Those Ss who receive the interpersonal anxiety reduction treatment will give no more positive self-evaluations during the word association judgment task than those Ss who do not receive the anxiety reduction treatment.

Ho_2: Those Ss who receive the interpersonal anxiety reduction treatment will disagree with the confederate's evaluations during the word association judgment task no more frequently than those Ss who do not receive the anxiety reduction treatment.

Ho_{3a}: Those Ss who receive positive reinforcement for their above average general self-evaluations will give no more positive

TABLE 2.2.--Experimental Design. (N = 48)

Interpersonal Anxiety Reduction	Self-Evaluation Reinforcement	Overt Self-Reinforcement	Evaluations Disagreements Self-Rewards
Relaxation	Above average	Self-reinforcement	4 subjects per cell
		No self-reinforcement	
	Control	Self-reinforcement	
		No self-reinforcement	
	Below average	Self-reinforcement	
		No self-reinforcement	
Control	Above average	Self-reinforcement	
		No self-reinforcement	
	Control	Self-reinforcement	
		No self-reinforcement	
	Below average	Self-reinforcement	
		No self-reinforcement	

self-evaluations during the word association judgment task than those Ss who either receive no reinforcement for any of their general self-evaluations or receive positive reinforcement for their below average general self-evaluations.

Ho_{3b}: Those Ss who receive no reinforcement for any of their general self-evaluations will give no more positive self-evaluations during the word association judgment task than those Ss who receive positive reinforcement for their below average general self-evaluations.

Ho_4: Those Ss who are allowed to administer overt self-reinforcers following their self-evaluations during the word association judgment task will give no more positive self-evaluations than those who are not provided with the overt source of self-reinforcers.

Ho_5: Those Ss who receive the interpersonal anxiety reduction treatment will administer no more self-rewards during the word association judgment task than those Ss who do not receive the anxiety reduction treatment.

Ho_{6a}: Those Ss who receive positive reinforcement for their above average general self-evaluations will administer no more self-rewards during the word association judgment task than those Ss who either receive no reinforcement for any of their general self-evaluations or receive positive reinforcement for their below average general self-evaluations.

Ho_{6b}: Those Ss who receive no reinforcement for any of their general self-evaluations will administer no more self-rewards during the word association judgment task than those Ss who receive positive reinforcement for their below average general self-evaluations.

Ho_7: There will be no interaction effects among the different treatment group combinations in terms of their positive self-evaluations, evaluation disagreements with the confederate, or self-rewards administered.

CHAPTER III

RESULTS

During each word association judgment task procedure, the confederate recorded all participant responses including subject word associations, self-evaluations, and mode ("reward" or "no reward" chip) of self-reinforcement when applicable, as well as confederate evaluation judgments. The data to be analyzed were then compiled from the recording forms and consisted of (a) frequency of positive subject self-evaluations (Table 3.1), (b) frequency of evaluation disagreements between subject and confederate (Table 3.2), and (c) frequency of self-administered "reward" chips (SRs) (Table 3.3). The measurement procedure involved 50 trials and thus each S had the opportunity to make as many as 50 positive self-evaluations, disagreements with confederate evaluations, and "reward" self-reinforcements, or as few as zero.

Treatment Effects

A three-way analysis of variance procedure was used to assess treatment influences on the dependent variable, positive self-evaluations. The main effects and interactions are presented in Table 3.4.

TABLE 3.1.--Positive Evaluation Means for All Treatment Groups.

	Above		Control		Below	
	SR	NSR	SR	NSR	SR	NSR
Relaxation	28.50	31.75	28.00	24.00	29.00	28.50
Control	25.50	32.00	25.50	30.00	29.25	29.50

TABLE 3.2.--Interpersonal Anxiety Reduction Treatment Means for Total Evaluation Disagreements.

Treatment Group	$\bar{X}$
Relaxation	18.08
Control	18.28

TABLE 3.3.--Self-Reinforcement Means for All Treatment Groups.

	Above	Control	Below
Anxiety Reduction	29.50	34.75	28.25
Control	24.50	21.75	29.00

TABLE 3.4.--Analysis of Variance Summary for Positive Evaluations.

Source of Variation	df	MS	F Statistic	P <
A (Anxiety Reduction)	1	1.33	.03	.86
B (Reinforcement)	2	30.65	.69	.51
C (Self-reinforcement)	1	33.33	.75	.39
AB	2	10.02	.22	.80
AC	1	52.08	1.17	.29
BC	2	31.02	.70	.51
ABC	2	15.65	.35	.71
Error	36			

It can be seen from these results that no group differences reached a significant level, and thus the three independent treatment variables, interpersonal anxiety reduction, self-evaluation reinforcement, and overt self-reinforcement availability, were not shown to affect significantly the frequency of positive self-evaluations. The following research hypotheses, then, could not be rejected:

Ho_1: Those Ss who receive the interpersonal anxiety reduction treatment will give no more positive self-evaluations during the word association judgment task than those Ss who do not receive the anxiety reduction treatment.

Ho_{3a}: Those Ss who receive positive reinforcement for their above average general self-evaluations will give no more positive self-evaluations during the word association judgment task than those Ss who either receive no reinforcement for any of their general self-evaluations or receive positive reinforcement for their below average general self-evaluations.

Ho_{3b}: Those Ss who receive no reinforcement for any of their general self-evaluations will give no more positive self-evaluations during the word association judgment task than those Ss who receive positive reinforcement for their below average general self-evaluations.

Ho_4: Those Ss who are allowed to administer overt self-reinforcers following their self-evaluations during the word association judgment task will give no more positive self-evaluations than those who are not provided with the overt source of self-reinforcers.

Although there were no statistical self-evaluation reinforcement treatment differences, the data did show a tendency for both the "above average" and "below average" reinforcement groups to give more positive self-evaluations than the controls as well as a slight tendency for the "above average" group to give positive self-evaluations more frequently than the "below average" group (Table 3.1).

A one-way analysis of variance procedure was used to evaluate the effect of the interpersonal anxiety reduction treatment upon the frequency of the subject's disagreeing with confederate evaluations. Analysis of the total subject-confederate disagreements (Table 3.5) indicated that the relaxation treatment procedure did not produce differences which achieved significance.

TABLE 3.5.--Analysis of Variance Summary for Total Evaluation Disagreements (Interpersonal Anxiety Reduction).

Source of Variation	SS	df	MS	F Statistic	P <
Between	.52	1	.52	.03	.87
Within	864.79	46	18.80		
Total	865.31	47			

Subject-confederate disagreements were further analyzed in terms of "Yes-No" disagreements (frequency of S disagreements with confederate's positive or favorable subject evaluations) and "No-Yes" disagreements (frequency of S disagreements with confederate's negative or unfavorable subject evaluations). These means are presented in Tables 3.6 and 3.7, respectively. Since the confederate gave 30 unfavorable and 20 favorable association evaluations during the measurement procedure, each subject had more frequent opportunities to disagree with confederate judgments of themselves which were negative; i.e., there were more potential "No-Yes" disagreements.

Results of the "Yes-No" and "No-Yes" disagreement analyses (Tables 3.8 and 3.9) similarly revealed no significant treatment group differences, and thus the relevant research hypothesis was not rejected.

TABLE 3.6.--Interpersonal Anxiety Reduction Treatment Means for "Yes-No" Evaluation Disagreements.

Treatment Group	$\bar{X}$
Relaxation	4.67
Control	4.75

TABLE 3.7.--Interpersonal Anxiety Reduction Treatment Means for "No-Yes" Evaluation Disagreements.

Treatment Group	$\bar{X}$
Relaxation	13.42
Control	13.54

TABLE 3.8.--Analysis of Variance Summary for "Yes-No" Disagreements (Interpersonal Anxiety Reduction).

Source of Variation	SS	df	MS	F Statistic	P <
Between	.08	1	.08	.01	.91
Within	317.83	46	6.91		
Total	317.92	47			

TABLE 3.9.--Analysis of Variance Summary for "No-Yes" Disagreements (Interpersonal Anxiety Reduction).

Source of Variation	SS	df	MS	F Statistic	P <
Between	.19	1	.19	.01	.93
Within	1131.79	46	24.60		
Total	1131.98	47			

Ho_2: Those Ss who receive the interpersonal anxiety reduction treatment will disagree with the confederate's evaluations during the word association judgment task no more frequently than those Ss who do not receive the anxiety reduction treatment.

Following each word assocation evaluation, one-half the subjects were given an overt self-reinforcement (SR) option in the form of "reward" or "no reward" poker chips. The effect of the interpersonal anxiety reduction and self-evaluation reinforcement treatments on these SR response rates was of interest and was assessed via two-way analysis of variance (Table 3.10).

Results of this procedure indicated that the self-evaluation reinforcement treatment group differences did not reach a significant level and the corresponding hypotheses, then, could not be rejected.

Ho_{6a}: Those Ss who receive positive reinforcement for their above average general self-evaluations will administer no more self-rewards during the word association judgment

TABLE 3.10.--Analysis of Variance Summary for Reward Chips (SRs) Administered.

Source of Variation	SS	df	MS	F Statistic
A (Anxiety Reduction)	181.50	1	181.50	5.49*
B (Reinforcement)	16.33	2	8.17	0.25
AB	211.00	2	105.50	3.19
Error	595.00	18	33.06	

*$P < .05$.

task than those Ss who either receive no reinforcement for any of their general self-evaluations or receive positive reinforcement for their below average general self-evaluations.

Ho_{6b}: Those Ss who receive no reinforcement for any of their general self-evaluations will administer no more self-rewards during the word association judgment task than those Ss who receive positive reinforcement for their below average general self-evaluations.

The interpersonal anxiety reduction treatment group differences, however, did reach significance, indicating that the relaxation treatment group members administered more reward chips (SRs) than the control group members. The following research hypothesis was consequently rejected:

Ho_5: Those Ss who receive the interpersonal anxiety reduction treatment will administer no more self-rewards during the word association judgment task than those Ss who do not receive the anxiety reduction treatment.

No treatment variable interaction effects reached significance, and thus the interaction hypothesis could not be rejected.

Ho_7: There will be no interaction effects between the different treatment group combinations in terms of their positive self-evaluations, evaluation disagreements with the confederate, or self-rewards administered.

In order to provide some measure of the interpersonal anxiety reduction treatment effectiveness, subjects were instructed to assess their level of perceived anxiety on a continuum scale ranging from severe anxiety to no anxiety prior to and following the treatment procedure. Group means resulting from this procedure are reported in Table 3.11.

Analysis of these self-report data (millimeter change toward increased relaxation) indicated (Table 3.12) that the anxiety reduction or relaxation group reported significantly greater relaxation following the treatment procedure than did the control group.

TABLE 3.11.--Self-Report Anxiety Reduction Index* Means.

Anxiety Reduction	9.25
Control	4.54

*Millimeters change toward increased relaxation.

TABLE 3.12.--Analysis of Variance Summary for Self-Reported Anxiety Reduction.

Source of Variation	SS	df	MS	F Statistic	P <
Between	462.52	1	462.52	4.82	.03
Within	4413.29	46	95.94		
Total	4875.81	47			

Procedure evaluation was ostensibly an integral part of the subject's "job" as explained in the instructions, and thus evaluation forms were necessary to maintain the credibility or believability of the project rationale. These forms also provided the self-report anxiety measure and were employed to monitor each subject's continued cooperative or conscientious attitude or orientation. A final post-experimental form was used to determine to some degree the subject's insight or level of understanding of covert procedural goals, i.e., "experiment wiseness," as well as the confederate deception.

Eleven subjects stated that they were aware of the potential confederate influence on their evaluation responses during the word association judgment task procedure. These Ss, however, were relatively evenly distributed among all treatment groups (Table 3.13).

Two subjects expressed suspicion of the ostensibly peer status of the confederate prior to or during the word

TABLE 3.13.--Treatment Group Distribution of "Aware" Ss.

Treatment Variable	Group	Aware Ss
Anxiety reduction	Relaxation	7
	Control	4
Self-evaluation reinforcement	Above	3
	Control	4
	Below	4
Self-reinforcement	SR	6
	NSR	5

association judgment task. These Ss had both been assigned to the interpersonal anxiety reduction control group and the self-evaluation reinforcement below average group. One was in the SR and one in the NSR self-reinforcement group.

Summary

The formulated research hypotheses were tested via analysis of variance procedures with the following results.

It was found that interpersonal anxiety reduction group (relaxation-control) differences were not significant with respect to (a) positive self-evaluations, and (b) evaluation disagreements. The relaxation group, however, administered significantly more frequent self-rewards than the control group, and also reported a greater degree

of relaxation following the anxiety reduction treatment procedure.

No significant differences were shown for self-evaluation reinforcement groups (above-control-below) with respect to either (a) positive self-evaluations, or (b) self-reinforcements.

Overt self-reinforcement groups (SR-NSR) were found not to differ significantly with respect to positive self-evaluations.

No independent variable interactions reached a significant level.

CHAPTER IV

DISCUSSION

Conclusions

Results of this study relate to two of the identified components of the self-control process, self-evaluation and self-reinforcement.

Self-Evaluation

It was revealed that neither the interpersonal anxiety reduction, selective self-evaluation reinforcement, nor the available overt self-reinforcement treatments significantly influenced subsequent self-evaluation responses in terms of proportion of positive judgments. Nor did the interpersonal anxiety reduction treatment significantly affect self-evaluation response independence in terms of the proportion of subject-confederate judgment disagreements. Thus, no evidence is provided which would support (a) the Aronfreed hypothesis that critical self-evaluation "habits" are a function of the individual's level of interpersonal anxiety, (b) the hypothesis that self-evaluation propensities are amenable to change via differential verbal and nonverbal interpersonal reinforcement of self-evaluations or judgments during interview-like interaction experiences, (c) the suggestion that overt

self-reinforcement conditions influence significantly self-evaluation responses, or (d) the possibility that self-evaluative response independence is enhanced by a reduction of interpersonal anxiety.

Self-Reinforcement

Self-reinforcement rates were found not to be influenced by differential reinforcement of self-evaluations, but were significantly affected by an interpersonal anxiety reduction. Evidence is then provided which supports the idea that self-reinforcement response frequency can be altered by changes in anxiety level as well as various direct external reinforcement manipulations which have been demonstrated in previous studies. More particularly, self-reinforcement frequencies were shown to be amenable to change in a situation where the SR administration was overt, i.e., under the direct observation and potentially strong influence of another unfamiliar person, and where doubts related to the suitability or appropriateness of many of the SRs administered were likely to be established because of the apparent evaluation judgment differences between the subject and confederate.

Since the interpersonal anxiety reduction treatment differentially influenced the self-evaluation and self-reinforcement responses, it is felt that the present study provides additional support for the idea that

self-evaluations and self-reinforcement responses are significantly independent and subject to differential influences. While SRs depend largely upon SEs, the functional relationship seems not to be absolute as it would appear that each may be separately affected by other variables and thus independently manipulated. Further support, then, is provided for the idea that separate efforts may be required to alter both self-evaluation and self-reinforcement habits of clients whose self-control responses appear inappropriate, as well as the idea that SR rate differences are not necessarily a function of corresponding variations in self-evaluations.

Limitations

The findings of the pesent study should be viewed in light of various methodological characteristics which tend to qualify potential interpretations. These characteristics relate to the treatments, sample, design, and measures.

Treatments

The interpersonal anxiety reduction treatment was successful in effecting significantly greater relaxation than the control experience as evidenced by self-report measurement data. It is likely, however, that the control subjects were allowed some opportunity to achieve a significant degree of relaxation by closing their eyes,

reclining in a soft chair, and listening to a repetitious and rather monotonous tape recording in a quiet, somewhat dimly lit room. Therefore, it is felt that the group level of anxiety difference achieved was minimal and thus not as great as desired or required to examine thoroughly the potential influence of that variable on self-evaluation response habits which are apparently easily influenced by external interpersonal feedback.

The self-evaluation reinforcement treatment procedure was limited in its potency primarily by its brief duration. Verbal and non-verbal interviewer reinforcement has been repeatedly shown to alter interviewee verbal behavior, and thus there is ample support for the use of this reinforcement source. In the present case, however, it is felt that the reinforcement exposure was too short to maximize its potential effectiveness or impact on self-evaluative verbal behavior. In addition, it is possible that the potential effectiveness of the self-evaluation reinforcement treatment was significantly inhibited by the interpersonal anxiety reduction treatment which preceded it. If relaxation tends to reduce or minimize the feedback impact of others, and if increased relaxation was in any way accomplished in the anxiety reduction treatment, then it would seem to follow that the self-evaluation reinforcement treatment effects would have been limited as a result of the proximity and order of the treatments.

The use of poker chips as reinforcers may have limited the potency of the overt self-reinforcement availability treatment. However, while the chip had no intrinsic reinforcing power, i.e., it could not be kept or exchanged for candy, money, grade points, etc., but derived its reward power solely from a symbolic quality, it was apparent that its administration was not taken lightly and was based upon genuine efforts to assess the "rewardability" of each word association response. It could also be argued that covert self-reinforcing responses were always available and may have interfered with or contaminated the differential effectiveness of the overt SRs used. While that possibility certainly exists, it is felt that the overt self-reinforcement response increased focus and attention on the reinforcement response and thus enhanced its reinforcing strength. The potency of the self-reinforcement, of course, was somewhat less important to the present study than the actual frequency of the overt SR response irrespective of its reward potency.

One general difficulty with the self-evaluation and self-reinforcement relationship aspects of this study related to the judgment criteria or interpretation. It was supposed that subjects would view word association responses which were judged as being "popular" or one of the most frequently given by their peer group, college students, as positive or desirable and thus worthy of

reward, while those that were judged as being "unpopular" or uncommon by their peer group would be perceived as undesirable and not worthy of reward. This assumption, however, was not completely accurate as some subjects rewarded themselves for associations which they felt deviated significantly and were thus uncommon. Consequently, for some subjects a "Yes" evaluation indicating that they felt their response was among the five most frequently given responses by other college students was in fact a negative rather than a positive self-evaluation. While the number of subjects who reported such an evaluative set was not great, the data from these Ss as well as those who might have responded similarly but did not mention it likely reduced the possibility of achieving or detecting significant treatment effects.

Sample

It is felt that several characteristics of the sample may have significantly affected the study results. First, subjects were all volunteers and thus likely differed in some undetected systematic way from the college population in general. Secondly, subjects ranged from age 19 to 35 and from sophomores to first year graduate students, thus including wide-ranging characteristics of motivation, interest, maturity, and sophistication. Normally, such a situation would make little difference since a random assignment procedure was used, but in this

particular study it is felt that with the relatively small number of Ss and proportionately large number of cells, the range of subject characteristics might well have influenced certain group differences and interactions. In addition, subjects were chosen and treatments administered during the latter weeks of the spring quarter, and thus there is some reason to suspect that motivation and concentration levels were marginal at best.

Design

Precision in the present study could have been increased by selecting a larger sample and using a randomized blocks design which would take into consideration individual anxiety levels and prior self-evaluation response tendencies. The design used, however, did minimize the introduction of systematic bias into the study and provided a reasonably rigorous assessment of treatment effects.

Measures

The paradigm typically used to explore self-evaluation and reinforcement has relied upon the measurement of SE and SR frequencies during an extinction phase of the experimental procedure in which no other external sources of either reward or punishment have been present. That is, SE and SR rate change has been demonstrated only in situations where no additional outside sources of

reinforcement and/or feedback regarding the adequacy of either the subject's task performance or his self-evaluative or reinforcing responses exist. Self-evaluation and self-reinforcement patterns are certainly important in situations devoid of objective criteria for the appropriateness of behavior as well as immediate sources of subjective external personal evaluation. However, exploration of the capacity of self-reinforcement and self-evaluation rates or habits to be maintained in the face of continued personal criticism is also warranted. Thus, the measures of this study, quality and independence of self-evaluations and frequency of self-reinforcers, were gathered during the presence of continued influence of the confederate. Consequently treatment influences on self-evaluation and self-reinforcement response habits which might exist during an "extinction" period (one devoid of further influences) would not show up in this study using these measurement circumstances.

As mentioned above, there is some question regarding the consistent directionality of the evaluative criteria as revealed in post-experimental interviews. Several subjects evaluated their conforming judgments negatively rather than positively, and thus the number of "Yes" evaluations may have been an unreliable or invalid reflection of the quality of the subject's self-evaluation habits.

Implications

One alternative to the possible conclusion that self-evaluation response habits are resistant to change or at least relatively unaffected by anxiety level changes and/or direct personal verbal and non-verbal self-reinforcement experiences is that self-evaluation changes did occur but were tenuous and rather easily further altered by the subsequent external personal evaluation source (confederate). Another alternative is that while changes in self-evaluation habits may have occurred as the result of the treatments, they were not detected by the measurement techniques used. Since these are plausible alternative explanations, the present results can only be viewed most tentatively. While the Aronfreed proposition is not supported by these results, it is felt that as a result of the various methodological limitations neither do they provide strong contradictory information. The argument remains compelling, and a definitive conclusion will require further investigation.

The following general suggestions are offered as possible guides for future studies:

(a) use self-evaluation incidence measures with more clearly established directionality (positive-negative poles) to assess the effect of anxiety reduction and interpersonal self-evaluation reinforcement;

(b) measure self-evaluation changes due to anxiety reduction and interpersonal self-evaluation reinforcement in the absence of further interpersonal feedback influences;

(c) attempt to effect greater anxiety level differences between the anxiety reduction treatment and control groups (perhaps compare relaxation treatment group with "heightened" anxiety group), and provide multiple and perhaps longer periods of interpersonal self-evaluation reinforcement experiences;

(d) manipulate anxiety reduction and self-evaluation reinforcement variables in independently conducted studies; and

(e) identify and select from pools of subjects with "high" levels of interpersonal anxiety and more extreme positive and negative self-evaluation response sets.

While present evidence does not support the hypothesis that overt self-reinforcement availability might enhance or strengthen self-evaluation response habits, it is felt that this general idea (SR conditions alter SE response quality, consistency, etc.) warrants further investigation. This study did not provide for a comparison of "controlled" or measurable overt and covert SR conditions, but merely contrasted overt self-reinforcement (chip-taking) with no self-reinforcement (no chip-taking). Future investigation might attempt to compare "public" and "private" objective and concrete self-reinforcement

as well as more highly structured overtly stated and covertly thought self-reinforcement responses.

The anxiety reduction treatment used in this study failed to affect self-evaluation independence. The conclusion that self-evaluation independence is not influenced by interpersonal anxiety level, however, is again limited by the above discussion regarding the anxiety reduction treatment weakness, measures used as well as measurement conditions, and sample characteristics. It is apparent that overt self-evaluations are significantly influenced by others' evaluations as evidenced by the observation that on the average, subjects agreed with approximately 75% of the confederate's positive evaluations and 57% of his negative evaluations. One implication is that very potent self-evaluation "insulating" experiences will likely be required to enhance self-evaluation independence. An additional suggestion for future research might be to investigate relative differential influences of various treatment experiences on overt and covert self-evaluative response independence.

The results of this study do not support the assumption that self-evaluation habits can be altered by direct selective verbal and non-verbal reinforcement. Attitudes about oneself (self-concept), however, are typically rather long-standing habits and require somewhat lengthy counseling experiences before significant change

is achieved. The expectation that changes in general self-evaluative habits will occur immediately subsequent to a brief (20 to 30 minutes) evaluation reinforcement interview session, then, is perhaps unrealistic. It is suggested that future research investigate the use of longer and more frequent treatment sessions perhaps extending for a period of weeks. Such a situation would provide a more reasonable opportunity for the achievement of measurable changes. In addition, for purposes of maximum generalizability of altered evaluation habits, the use of multiple interviewers and the focusing on a greater variety of self-evaluations is suggested.

Self-reinforcement rates have been demonstrated to be alterable by a variety of direct variables when measured during the acquisition stage (performance feedback and/or contingent reinforcement is administered), or more typically during the immediately following extinction stage (no additional source of influence or performance feedback is provided) of Kanfer's experimental paradigm. The results of the present study provide some evidence identifying an additional affective SR variable (anxiety reduction) as well as support for the idea that SR changes can be effected and maintained to some degree in the presence of evaluative performance feedback which is predominantly negative in nature. It would appear, then, that interpersonal anxiety reduction experience might

facilitate appropriate SR responses and thus aid behavior maintenance even in certain situations where the individual's behavior conflicts with the judgments of others who are willing to express those judgments. Such a situation is certainly of crucial importance in dealing with behavior generalization to environmental social conditions which are not supportive, but rather punitive.

Further research might incorporate a task with relatively objective success criteria in order to investigate whether the impact of SRs is significantly maintained in "punitive" situations (contrary evaluative feedback) as it appears to be in acquisition and extinction situations. An additional necessary study should investigate whether the interpersonal anxiety reduction treatment similarly affects self-administration of various reinforcers which have intrinsic reinforcing potential.

Considerably more data are necessary before the conclusion that self-reinforcement responses are not dependent upon self-evaluations can be confirmed. The results of this study, though tentative, do support that notion, however, and would seem to justify further substantiation efforts.

APPENDICES

APPENDIX A

INTERPERSONAL ANXIETY REDUCTION TREATMENT AND CONTROL SCENES

APPENDIX A

INTERPERSONAL ANXIETY REDUCTION TREATMENT AND CONTROL SCENES

Relaxation

1. Arguing with a clerk who short-changed you.
2. Returning merchandise to the store.
3. Arriving at class 20 minutes late.
4. Eating in front of strangers.
5. Trying out for a part in a play (chair in a band).
6. Asking a stranger for a date.
7. Forgetting your date's name when introducing her.
8. Being turned down for a date.
9. Being called irresponsible.
10. Being unprepared for an oral examination.
11. Being watched while working by others (an expert).
12. Meeting your date's parents.
13. Meeting your fiancee's parents.
14. Speaking in front of a large group.
15. Being asked a question in class.
16. Giving your opinion in class.
17. Being called on in class and forgetting your answer.
18. Saying something serious and being laughed at.
19. Being talked about behind your back.
20. Having your opinion criticized.
21. Having your appearance criticized.
22. Having your college application rejected.
23. Having your loan application rejected.
24. Being denied admission to a club.
25. Being the center of attention.
26. Being told you will never be a success.
27. Being fat.
28. Failing a test (paper, job).
29. Getting a traffic ticket.
30. Paying a fine.
31. Being reprimanded by your boss (teacher, wife, parent).
32. Getting sick and vomiting at a restaurant.
33. Running out of gas on a busy street.
34. Wearing informal clothes to a formal event.
35. Wearing formal clothes to an informal event.

36. Burning a hole in your neighbor's new couch.
37. Burning a hole in your date's new dress.
38. Swearing in public.
39. Being accused of shoplifting.
40. Being caught shoplifting.
41. Singing a solo in front of a group.
42. Being told you have bad breath.
43. Being told you have body odor.
44. Having stomach growl loudly in a crowded room.
45. Passing gas in a quiet room full of strangers.

Control

1. Taking your clothes to the cleaners.
2. Watching a taxi pass by on the street.
3. Watching a fly on the wall.
4. Finding an old lottery ticket.
5. Tying your shoes.
6. Looking through the telephone book.
7. Eating at McDonald's.
8. Combing your hair.
9. Replacing a burned out light bulb.
10. Washing a car.

APPENDIX B

SELF-EVALUATION REINFORCEMENT TREATMENT FORM

APPENDIX B

SELF-EVALUATION REINFORCEMENT

TREATMENT FORM

SELF-EVALUATION QUESTIONNAIRE

Instructions

Listed below are several categories of individual characteristics, each composed of 10 items. Under each category please choose only five characteristics on which you rate yourself as falling above and five on which you rate yourself as falling below the average based on college student norms. Check each item evaluation in the spaces provided. The differences between some items chosen as above and below average are likely to be slight. Do your best and try to be as objective as possible.

	Evaluation	
Physical	Above	Below
Posture		
Build		
Dexterity		
Coordination		
Athletic Ability		
Strength		
Endurance		
Eyesight		
Health		
Attractiveness		
Cognitive		
Concentration		
Memory		
Creativity		
Mechanical Ability		
Reading Rate		
Intelligence		
Imagination		
Abstract Reasoning		
Talent (Musical, Dramatic)		
Comprehension		

	Evaluation	
Interests	Above	Below
Politics		
Athletics		
Economics		
Law		
Dramatics		
Business		
Art		
Science		
Religion		
Literature		
Personal		
Self-controlled		
Persevering		
Patient		
Self-confident		
Aware		
Energetic		
Orderly		
Resourceful		
Serious		
Flexible		
Social		
Outgoing		
Kind		
Trusting		
Responsible		
Independent		
Cheerful		
Assertive		
Friendly		
Sympathetic		
Witty		

APPENDIX C

PROCEDURE EVALUATION FORMS

APPENDIX C

PROCEDURE EVALUATION FORMS

Procedure Evaluation Form A

Please use this form to evaluate the counseling procedure which you have just experienced. We would like for you to be as objective as possible.

Inappropriate _____ Appropriate

Inefficient _____ Efficient

Unnatural _____ Natural

Useless _____ Useful

Unpleasant _____ Pleasant

Difficulties and/or observations:

Immediately prior to the procedure I experienced:

Severe Anxiety _____ No Anxiety

Immediately following the procedure I experienced:

Severe Anxiety _____ No Anxiety

Presently I am experiencing:

Severe Anxiety _____ No Anxiety

Procedure Evaluation Form B

Please use this form to evaluate the counseling procedure which you have just experienced. We would like for you to be as objective as possible.

Inappropriate _____ Appropriate

Inefficient _____ Efficient

Unnatural _____ Natural

Useless _____ Useful

Unpleasant _____ Pleasant

Difficulties and/or observations:

The counselor seemed:

Anxious _____ Relaxed

Uncomfortable _____ Comfortable

Unfriendly _____ Friendly

Uninterested _____ Interested

Unenthusiastic _____ Enthusiastic

Cold _____ Warm

I felt:

Anxious _____ Relaxed

Uncomfortable _____ Comfortable

Cold _____ Warm

Procedure Evaluation Form C

Please respond to the following question.

How many words were in the association list?

How many of your associations were among the 10 most popular?

How many of your associations did you reward?

How many of your associations did the recorder judge as being popular responses?

What was the purpose of your task?

What was the purpose of the recorder's task?

What was the relationship between the last task and the previous counseling procedures?

APPENDIX D

WORD ASSOCIATION TASK

RECORDING FORM

APPENDIX D

WORD ASSOCIATION TASK RECORDING FORM

Word	Association	Confed Eval	S Self-Eval	SR
Switch				
Can				
Novel				
Deplete				
Wild				
Churn				
Queen				
Key				
Natural				
Person				
Loyal				
Prefer				
Abhor				
Farce				
Limp				
Hip				
Bulge				
Youth				
Moss				
Kazoo				
Joker				
Mask				
Rust				
Trifle				
Ripe				
Color				
Quote				
Salute				
Across				
Beast				
Vital				
Depend				
Placid				
Voice				
Harsh				
Overcome				
Tilt				
Impress				
Upset				

Word	Association	Confed Eval	S Self-Eval	SR
Balance				
Dig				
Sauce				
Grape				
Impeach				
Term				
Envy				
Ordeal				
Jar				
Feel				
Tape				

Total Positive Self-Evaluations_____

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