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The Use of Ideal Models in Covert Rehearsal to Influence Self-Concept

By

Ricky Alan Sarkisian

B.S. (California State University, Fresno) 1969
M.B.A. (California State University, Fresno) 1970
M.A. (University of California) 1973

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

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in

Education

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GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA, BERKELEY

Approved:

William R. Watts

Martin V. Covington

Lawrence H. Stewart

Committee in Charge

.....

Made the worst of, our imagination will destroy us; made the best of, it can be used to break up long-established habits of undesirable feeling, to dissipate fears, to provide symbolic outlets for anger and fictional amends for real frustrations.

. . Aldous Huxley

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CHAPTER I

INTRODUCTION

Throughout our lives we are occasionally influenced by what may be termed "heroes" or "idols." This usually involves the conscious or unconscious imitation of a human model, one who possesses certain desirable qualities or who represents an ideal. This falls into what is often called "hero worship" since worship or admiration spontaneously and naturally evokes the desire to imitate.

More often today, hero worship has been replaced by "idol worship," that is, we often choose inferior models as objects of imitation such as movie stars, atheletes, and politicians regardless of their character or moral stature. Sometimes the external model is less than ideal, one rather unrealistic, but admirable and attractive enough to create a pattern to which we tend to conform.

In utilizing such models, the danger to be avoided is a personal attachment to the human representative of the model. In other words, the model should be a model and not the living person. It should be an idea, an image, a concept, and not a personal attachment to the inspirer of the model

(Assagioli, 1965). Often, at first, the two are connected, and rightly so. But gradually the process of introjection and identification should take place in order to dissolve the affective bond with the model and integrate the model with the dynamic, inner creative aspects of the personality.

Previous research has suggested the efficacy of symbolic modeling processes to produce changes in behavior (Bandura, 1972; Bandura and Walters, 1963). The studies have demonstrated the importance of social learning to various counseling strategies and have implied that novel patterns of behavior may emerge by associating the self with the desired behavior. Preliminary findings have shown that rather prompt and enduring behavioral changes can occur through identification with social models whether found in real life or created in the imagination. The implications could have a profound effect on counseling, especially in modifying the self-concept. Interaction with appropriate positive models could facilitate the process of introjection whereby the individual begins to believe, feel, and respond in a manner similar to the object of identification. The ease by which these changes could occur would depend to some extent on the availability of salient models and it seems plausible to suggest that these models would be more easily available through the creative potentials of the imagination.

The present study was designed to test the efficacy of interacting with an ideal model, created in fantasy, to produce positive shifts in self-perception. Three groups were utilized for the experiment: a covert rehearsal group which practiced imagining themselves as an ideal person, the person they would most like to be within themselves; a verbalization group which developed and discussed their ideal models but did not imagine themselves as their ideal person; and a control group. Measures of self-concept and real/ideal self congruence were administered at various experimental phases. The results are discussed in light of implications for counseling using covert rehearsal as a technique of rapid behavioral change.

CHAPTER II

BACKGROUND AND THEORY OF RESEARCH

Several theoretical constructs are relevant to the material discussed in the introductory chapter. These include identification and modeling, imagination, and the various covert practices which seek to unify modeling and imagination. An effort is made forthwith to explain these constructs in terms of previous research and theoretical formulations.

Identification and Modeling

Research in the identificatory processes during the last twenty years has produced a wealth of knowledge regarding the influence of models on behavior. We know that models are usually found in people, individually or in groups, but may also be found in animals, machines, inanimate objects, parts or features of people, or cartoon characters. Exposure to models may produce specific mimicry as well as generative and innovative behavior. Additionally, the identificatory processes involved in observing a model may be expressed in overt behavior as well as in conscious experience, attitude, or fantasy (Sanford, 1955). Bandura (1965) sees modeling as a

continuous process in which novel responses are acquired and existing behavioral repertoires are modified by vicarious and direct experiences with a diversity of cultural or symbolic models whose attitudes, values, and social responses are exemplified behaviorally or in verbally coded forms.

In an earlier work (Bandura and Walters, 1963), Bandura refers to actual models, symbolic models, and exemplary models. Actual models are tangible referents existing in reality, yet symbolic models may be presented through oral or written instructions, pictorially, or through a combination of verbal and pictorial devices. They are often presented via mass media, especially television, and play a major role in shaping behavior and modifying social values. Using an exemplary model involves reference to another person and one or more of his characteristics. The reference may be positive ("Look how nice Billy behaves") or negative ("If you steal things, you'll go to jail just like that man in the newspaper"). Exemplary models frequently reflect desired behavior and are therefore a means of displaying, in varying degrees of detail, the proper behavior for a specific situation.

The term "imitation" can be differentiated from "identification" in that imitation involves the reproduction of discrete responses (Bandura, 1969)

usually referring to isolated acts or skills (Lazowick, 1955). Identification, on the other hand, involves the adoption of either diverse patterns of behavior (Kohlberg, 1963; Parsons, 1955), symbolic representations of the model (Bandura and Walters, 1963; Emmerich, 1959), or similar meaning systems involving the action of the entire personality (Lazowick, 1955). An identificatory event is defined as the "occurrence of similarity between the behavior of a model and another person under conditions where the model's behavior is the determinative cue for the matching response" (Bandura, 1969). The model's behavior may manifest itself in motoric, cognitive, affective, or physiological classes of response.

Kelman (1961) sees identification as the maintenance of a satisfying role relationship, in reality or fantasy, with a significant other. Moreover, Kagan (1958) describes identification as an acquired, cognitive response within S in which he believes that some of the attributes, characteristics, attitudes, and affective states of M are part of his own personality make-up. S responds to M by imitating in actuality or fantasy the same behavior (Sanford, 1955), utilizing a subtle interaction of introjection and projection. This process effects an alteration of the ego after a pattern set by M which could be referred to as a change in personality structure

(Lazowick, 1955). This change usually involves the learning of meanings which collectively make up the individual's frame of reference. As suggested earlier, the relation between a subject's set of meanings and a model's is called identification and is essentially a mediating process.

Stotland and his co-workers (Stotland, Zander, and Natsoulas, 1961; Burnstein, Stotland, and Zander, 1961) have shown that people have a strong need to maintain cognitive consistency in their self-concepts. When there is perceived similarity between a subject and a model, the subject will introject other attributes into his self-concept to maintain cognitive or perceptual consistency. The initial perception of similarity involves the recognition of first similar attributes (FSA's) between S and M. This results in the introjection and projection of attributes along other lines called derived similar attributes (DSA's). Through a process called homologizing, the elements of an introjected M's behavior are reproduced, either in overt behavior or fantasy. Lazowick (1955) terms this process "pseudo identity:" S behaves as if he and M were one and the same person. According to Sanford (1955), introjection becomes a process whereby the object of identification "disappears inside."

In one study (Burnstein, Stotland, and Zander, 1961), S's exposed to a positive model were able to

raise their estimate of the degree to which they possessed a socially desirable attribute. They were able to change their self-concept to be more like the model (introjection) as well as their concept of the model to be more like their self-concept (projection).

Early model identification was seen by Freud as "an emotional tie with an object," typically the parent (Freud, 1938). Object choice is usually influenced by a dependency relationship (anaclitic identification) which, Freud believed, develops the superego. The child comes to resemble not only what the parent <u>is</u> but also what the parent wants the child <u>to be</u>. The child may model overt behavior, motives or parental aspirations. Mowrer's (1950) developmental identification theory postulates the child learning to perform the ego functions of his parents, fearing the loss of love should he fail. Sanford (1955) points out how this process need not necessarily result in the internalization of parental values, it may simply reinforce behavior directly.

Modeling has proven to be efficacious in transmitting new response patterns and accelerating and shortening social influence processes (Bandura, 1965). Modeling procedures are also influential in inhibiting or disinhibiting previously learned responses and eliciting behaviors which need only appropriate cues to transmit them into action.

Generally, the acquisition of a novel behavior occurs through stimulus contiguity whereas performance of the behavior is influenced by reinforcement. In addition, some behavioral repertoires are maintained by self-administered positive and negative reinforcers.

However, reinforcement does not seem to be a necessary element of modeling. Bandura (1965) presents research supporting no-trial (no-reinforcement) learning. In addition, once a person has developed an adequate verbal repertoire, increased reliance is generally placed upon symbolic models which may be in the form of written behavioral descriptions (Bandura and Walters, 1963). Investigations of symbolic modeling (Bandura and Mischel, 1965) show that matching performances can be readily obtained without the physical presence of a model provided the essential features of the model's behavior are accurately depicted verbally. For example, a psychological trainee can learn the complex skills needed to administer a test of mental abilities simply by matching the responses described in the instruction manual.

A combination of reinforcement and modeling procedures has not been shown to be a more powerful learning condition than modeling alone (Bandura and McDonald, 1963). Furthermore, exposure to a non-rewarding model may arouse discomfort or anxiety,

adding motivation to perform the actions which the situation elicits (Hartup and Coates, 1967).

In social learning theory, modeled events are acquired through symbolic representations of information conveyed by modeled stimuli (Bandura, 1972). This process explains how new response patterns are established, whereas operant conditioning analyses account primarily for previously learned matching responses. Bandura (1972) discusses four interrelated subprocesses involved in social learning and specifically, modeling phenomena. Attentional processes underscore the importance of attending to, recognizing, and differentiating the cues of M's behavior. Retention processes involve assimilation of the originally observed inputs in symbolic form, either through images or verbal codes. Motor reproduction processes use these symbolic representations to guide overt performance. Finally, social learning is transmitted into overt performance by motivational and reinforcement processes. This takes place for the most part when negative sanctions or unfavorable incentive conditions are absent. When positive incentives are introduced, observational learning is promptly translated into action.

Identification becomes a continuous process involving multiple modeling rather than a phenomenon that primarily occurs in early childhood producing

enduring and pervasive changes in personality (as Freud suggested). Bandura (1965) and others (Bronfenbrenner, 1960; Parsons, 1955) see modeling in a hierarchic progression where individuals choose behaviors from different models, never reproducing all the behavior of a single model, but rather choosing various identificatory elements from several different models. Within the same family, for example, same-sex siblings may exhibit quite different personality traits indicating that parents cannot possibly be the only models influencing the children. As the children grow older, they must draw more heavily upon older siblings, peers, and other extra-familial models for specific modes of behavior that parents do not ordinarily provide (Goslin, 1969). Additionally, individuals identify with old models in new situations (Bandura, 1972).

Under conditions of uncertainty, persons, especially when emotionally aroused, are especially likely to rely on the behavior of others for indications of how they should respond (Walters and Amoroso, 1967). In this situation, models who have demonstrated high competence are imitated to a greater degree than models lacking in this quality (Gelfand, 1962; Rosenbaum and Tucker, 1962; Mausner and Bloch, 1957; Mausner, 1954a; 1954b). Furthermore, learning to imitate a competent model occurs more

readily than learning the behavior of an incompetent model (Rosenbaum and Tucker, 1962).

Whiting's (1960) status-envy theory describes the individual's envy of a resource mediator who has the power to give a resource, withhold it, or deprive the person of a resource he already has. A resource can be anything an individual wants such as food, water, rest, information, acceptance, freedom, love, or praise. The consumption of a resource is reinforcing, in some ways providing feedback that one is displaying positive behavior. Deprivation of a resource is motivating, inspiring one to behave a certain way in order to obtain the desirable resource. An individual attempts to learn the role of another by interacting with him, believing that if he were similar to this person, he too would command the desired goal states. It is important to clarify at this point, however, that the controller, not the consumer, of resources is the envied model (Bandura, Ross, and Ross, 1963). Social power becomes the ability of a person to influence the behavior of others by controlling or mediating positive and negative reinforcements (Maccoby, 1959; Mussen and Distler, 1959; Parsons, 1955).

The more one envies the resource control of another, the more he will covertly practice that role. He fantasizes himself as the envied person,

controlling and consuming the valued resources of which he has been deprived. This covert practice enhances the individual's readiness when the time comes to act out the role. Bandura (1972) agrees that the level of observational learning can be considerably enhanced through the covert rehearsal of modeled response sequences. The retention of acquired matching responses is facilitated by symbolic modeling processes which do not require the physical presence of M. Whiting notes that covert rehearsal will not only increase S's latent skill in playing a role but also his desire to do so. As a result, he will be ready to display the desired behavior whenever an appropriate opportunity arises, seeking persistently to overtly perform these behaviors even in the face of negative reinforcement. Self-reinforcement is provided through self-punishment and self-praise.

Through sensory conditioning, symbolic models elicit in S perceptual responses which become sequentially associated and centrally integrated on the basis of temporal contiguity of stimulation (Bandura, 1969). Through a process called "chaining," re-presentation of associated stimuli and the perceptual-cognitive structures that are thus evoked may serve to guide behavior (Walters, 1968). Live and symbolic models become equally effective in an

immediate social matrix (Bandura and Mischel, 1965). The physical presence of M is not required as long as the symbolic model is accurately defined. Maccoby (1959) discusses the possibility of acquiring a repertoire of behaviors simply by practicing covertly the actions of models with whom one interacts in the social milieu.

In order to understand the nature and function of covert symbolic processes and how they operate to influence overt activity, it now becomes essential to examine the properties of fantasy and image formation.

Imagination

The Latin word imaginatio refers to two important processes: (1) formation of mental pictures (frequently referred to as "imaging") and (2) creative innovation (frequently referred to as "imagining"). It is interesting to note that the Latin word "imago" forms the root of "imagining" which in turn is derived from the same root which forms "imitari" (to imitate). The root metaphor equates imagining with imitating; i.e. imagining implies copying a model through the formation in fantasy of an object that resembles the model (Sarbin and Juhasz, 1970).

As utilized here, imagination has three important faculties. Primarily, it is the ability of the mind to create mental pictures; to visualize

experiences, thinking in symbols and images rather than words. Also, imagination allows one to expand the possibilities of the present reality by creating future possibilities. Finally, it allows one to develop insight and awareness regarding the nature of reality which would likely be more difficult to achieve by extensive thought processes. Cordner (1968) writes that the imagination has "potential for the creation of a new self . . . to be realized by utilizing its strength and power."

Horowitz (1970) categorizes mental images into four types, emphasizing the image's vividness, context, interaction with perception, and content. Images categorized by vividness include hallucinations, thought images, and unconscious images and, as they become more vivid, they are more likely to transcend covert experience, establishing themselves as external and appraised as real.

It is important to characterize images by context also so that the experience will be understandable in terms of its occurrence. Included here would be hypnagogic and hypnopompic images (those that occur in the twilight state between wakefulness and sleep), dream images and nightmares, psychedelic drug-induced images, and drug flashbacks.

When images are classified according to interaction with perceptions, we are concerned with how

closely the subjective experience resembles the perceptual objects. Illusions, perceptual distortions, synesthesias (blends of images from more than one mode of representation) déjà vu experiences, negative hallucinations, and after-images all contribute to an understanding of the psychodynamics of our perceptions.

The remaining types of images are ordered according to their characteristic content. They may have varying degrees of vividness, may occur in any of the various states of context, and may result from perceptual interactions. The more important formations include memory images (a reconstruction of a past perception), imaginary images (a content that has never been perceived before), entopic images (arising via stimulation of optic structures, i.e. "seeing stars"), body images (a hypothetical construct operating to give information about the body and its transactional relationship with the environment), and imaginary companions.

Most people are able to utilize their imagination at some time or another during normal wakefulness. Many people conceptualize thoughts by the use of visual images while others think primarily with words. Betts (1909) found that most people (approximately 95 percent) can form a visual picture in the normal waking state when given a

specific instruction. For example, when asked to imagine an automobile, most people will be able to form a quasi-visual representation of a car, some will be able to see the car in color, the shining chrome, etcetera, but only a very few will be unable to form an image.

Besides the formation of mental pictures or images, we are also able to form quasi-sensory representations of sensory, perceptual, affective, and other experiential states (Richardson, 1969). It is not only possible for someone to imagine what he has seen, but also what he has heard, tasted, smelled, touched, and emotionally felt. Brower (1947) found that while 97 percent of his subjects were able to form a visual image on specific instructions, only 59 percent were able to form an image of smell. Thus, it is easier to form visual images than it is to visualize other sensory modes.

In ordinary thought, the imaginal modes of representation interact flexibly. In extreme situations, such as psychic trauma, the different modes are less subjectively interrelated and failures in transformation from one mode to another may occur. Freud (1938) organized thought into a broad spectrum ranging from "primary process thinking" (fantastic, wish-oriented, magical thought) to "secondary process thinking" (reality-oriented, logical, comparative

thought). Between these two poles is a continuum which combines elements of both modes of thought.

Primary process thought precedes secondary processes developmentally. Although the influence of primary process thinking diminishes as one grows older, it is never entirely lost. Images are a frequent mode of representation in primary process thought but do not extend to second processes as much. Yet primary process thinking is extremely contributory to the creative processes. Because of the rapidity of thought formation and the relative absence of logical constraints, novel ideas may be generated.

Furthermore, image formation can result in gratification of prohibited desires or the attainment in fantasy of something that is not readily obtainable in reality. For example, sexual fantasies during masturbation enhance the act and provide enriched physical gratification. Fulfillment through the imagination may also be in terms of the ideal self or the expression of impulses which might be dangerous if they were discharged in reality. In one study, day-dreaming and TAT story writing were effective in reducing experimentally aroused hostility (Pytkowicz, 1964). It has also been found that under certain conditions and for some S's, visual imagery can substitute for some of

the functions of dreaming (Kawliche, 1969).

Siegler (1972) suggests that imagination is a potential skill of any individual; it provides an adoptive function for developing intellectual and emotional capacities. Skill in imaginative ability can be learned and is susceptible to training.

Imagination possesses time-binding properties which allow for the inhibition or postponement of an action pending the introspective examination of possible outcomes (Sarbin and Juhasz, 1970). The time-binding function allows one not only the opportunity to consider various alternatives, but also to rehearse for future acts. In problem solving, imagination allows time to define and formulate an area of concern, generate alternatives, decide on the best course of action, and verify the choice by overt activity (D'Zurilla and Goldfried, 1971). Thus, the time-binding function of imagery serves to construct hypothetical situations in which an individual assumes the role of an actor; he pretends to play his parts -- to rehearse, to form, to create (Sarbin and Juhasz, 1970).

Imagination also has an important place in the involvement dimension of role-taking. In definition, role-taking consists cognitively of empathy; that is, viewing another person's problem from that person's point of view. Affectively, empathy consists of

vicariously experiencing another's emotions (Flavell, 1968). Furthermore, the cognitive and affective components of empathy appear to be interrelated (Staub, 1971). Now, just as overt role-enactment can be profitable in developing insight, so can hypothetical involvement in the form of role-taking. By fantasizing "as if" situations, we place ourselves in cognitive/affective images, experiencing positive and negative empathic feedback. Such quasi-perceptual and quasi-sensorial episodes allow one to develop knowledge about himself and his environment.

Juhasz (1969) has found that those persons who perform well in overt imitation and role-taking are also those who have a good ability to form vivid, "alive," descriptive mental images. However, pre-conscious or subconscious mental blocks sometimes interfere with the imagination, thereby reducing creativity (de Mille, 1967). Defense mechanisms serve to protect us from the expression of thoughts which, if released into consciousness, would create anxiety. Imagination is a vehicle for opening up closed areas of the mind, cathartically releasing stress and anxiety, and encouraging creative absorption in people, things, and ideas. When reading 20,000 Leagues Under the Sea, for example, the visual content is supplied by the reader which is a vast improvement over pure spectatorship.

The imaginary imagery defined earlier by Horowitz (1970) and the imagination imagery discussed by Richardson (1969) describe those images which do not refer to past perceptions or experiences. They are the creative images of thought; images which give the artist an idea for a painting or a scientist the solution to a problem. Previous research (Harman et. al., 1966; Kubzansky, 1961) has indicated that creative ability is related to one's capacity for visual imagery and fantasy. Apparently, the more vivid or eidetic an image, the greater potential there is for creative innovation. During hypnosis, images become more real-looking and distinguishable than those evoked in the waking state (Graham, 1969).

The formation and communication of images can produce information, create empathic understanding, express emotions, and alter moods and attitudes (Horowitz, 1970). We have seen thus far how images, whether visual, perceptual, or sensory, can serve to expand our creative experience. They allow living in the past, the future, and the here-and-now and establish temporary conceptualizations of behavior. During the past decade, there has been a proliferation in fantasy and imagery formation as psychotherapeutic techniques. Image formation is a form of thinking and oftentimes emotions will obstruct clear and rational thought. The encouragement of thinking

facilitates attitude and behavior change and image formation, as a special form of thinking, may be a way of expressing conflicts of feelings and distortions or instabilities of self. Several covert practices have utilized this concept in the treatment of psychological disorders.

Covert Practices

Utilizing the theoretical constructs of identification and modeling, several behavior therapies have found use for imagery in treating personality dysfunctions. Central to the use of imagery is the covert practice of self displaying certain behaviors; rewarded for some, negatively reinforced for others, and also non-rewarded depending on the topic of imagination. Beyond the covert rehearsal of certain response tendencies, the client is encouraged to exhibit practiced behavior in the social milieu. By combining experiences in fantasy with in vivo situations, behavior change is likely to result.

One of the most widely used treatment methods for inappropriate avoidance reactions is systematic desensitization. Wolpe (1958) instructs clients to visualize anxiety-arousing scenes graduated in aversive properties while in a deep state of muscle relaxation. Each time anxiety becomes manifest, the client is told to discontinue the scene and re-concentrate on muscle relaxation. This

step-by-step sequence allows an individual to gradually become accustomed to a fearful situation. Systematic desensitization has been highly successful in breaking down neurotic anxiety-response habits such as agoraphobia, claustrophobia, acrophobia, fear of intercourse, fear of injections, test anxiety, and so on. More recently, it has been used to develop positive attitudes toward heterosexual dating interactions (Taylor, 1972) and stuttering (Wolpe, 1969). Imaginal desensitization procedures were also effective in reducing avoidance behavior of cockroach phobics towards crawling insects (Gaupp, 1972). Vivid imagers as measured by the Betts QMI Vividness of Imagery Scale exhibited a greater cognitive shift than weak imagers. Perloff (1970) provides further evidence of the influential role of symbolic activities in reducing anxiety in stressful situations.

Kelly (1955), in his fixed-role therapy, helps a client to develop a self-characterization of realistic and psychologically healthy personality constructs. Once the fixed-role sketch is refined, the client is asked to refer constantly to the characterization as his ideal model. The person described in the sketch is given a name and represents a model of behavior for the client.

Similarly, Assagioli (1965) has clients define

an ideal model through the use of adjective-descriptions. The client is then instructed to visualize himself in possession of the various model's qualities, allowing the visualization to be as vivid and alive as possible. The client is taught and trained to see himself in a variety of everyday situations, especially those situations which allow him to express in fantasy the traits, characteristics, and affective states of his ideal model. Assagioli has found that most images have motoric properties which tend to be translated into action.

Behavior rehearsal strategies provide the client with direct training in those performance abilities lacking in his response repertoire. In behavior therapy paradigms, this often consists of exchanges between client and counselor drawing upon situations in the client's life. Training in assertive behavior utilizes a similar approach yet covert rehearsal of desired responses has most often been applied to other techniques of behavior modification such as systematic desensitization. In a recent experiment (McFall and Lillesand, 1971), covert behavior rehearsal resulted in more dramatic changes in assertive-refusal behavior than overt behavior rehearsal. Covert practice permitted the subjects to imagine problem situations and practice new modes of responding without concern for real-life

consequences.

A further demonstration of the efficacy of covert assertive training is provided by Yarnell (1972) who utilized guided affective imagery during hypnosis to treat an excessively inhibited 22-year-old college male.

In a way, covert role-playing is a means of learning not only social actions directed toward others, but of learning reactions toward self as well (Maccoby, 1959). Williams (1973) maintains that teaching an individual self-regulating behaviors offers the key to adaptability of behavior over time and across environments.

Covert treatment methods which evoke strong responses through fantasies of contrived situations are known as imaginal flooding techniques. Wolpe (1973) describes the case of a dentist who had a fear of his patients dying in the chair and a fear of ridicule. Under light hypnosis, he was asked to imagine giving an injection to a patient, withdrawing the syringe, and seeing the patient collapse in the chair, dead. Anxiety was quite evident at first, but after repeated exposures to this imaginal scene (alternated with relaxation), the fear was eventually eliminated. In subsequent sessions, the fear of ridicule was introduced. The dentist imagined a scene in which other people were laughing

at him and pointing their fingers at him. After five sessions, there was no longer any fear present. A follow-up four years later indicated the treatment was completely successful.

Implosive therapy techniques, like flooding, expose the client to the conditioned anxiety-producing stimulus situations where the anxiety response habit is not reinforced (Stampfl and Lewis, 1967). The counselor's task is to describe in great detail the most vivid horrors imaginable in order to extinguish the conditioned anxiety response.

Cautela's (1966) covert sensitization procedure involves pairing an imagined stimulus (such as alcohol) with a verbally suggested noxious response (e.g., vomiting). Such aversive conditioning has been quite successful in the treatment of obesity (Stuart, 1967), alcoholism (Ashem and Donner, 1968; Anant, 1967), homosexuality (Cautela and Wisocki, 1969), and smoking (Primo, 1972). It also has promise for treating compulsions such as gambling, fetishism, and nail-biting.

Covert reinforcement is another technique developed by Cautela (1970) and utilizes a reinforcing stimulus presented in the imagination. The approach is based on the assumption that the manipulation of covert processes can allow conditioning to fantasy situations, readily acquired, and quickly

generalized to real environments (Krop, Calhoon and Verrier, 1971; Franks, 1967; Kimble, 1961). In covert reinforcement, the client is asked to imagine a scene opposite of the maladaptive behavior normally exhibited. The scene is interrupted several times by a reinforcing stimulus cued by the word "reinforcement." Reinforcing stimuli are agreed upon beforehand and may involve such pleasurable scenes as lying in a meadow, sexual intercourse, or fishing in a stream. Results thus far strongly support the notion that reinforcement presented in fantasy can increase response probability.

Covert procedures based on the extinction paradigm have been effective in decreasing response probability (Cautela, 1971). Covert extinction is based on the assumption that if positive and negative reinforcing stimuli maintaining certain behavior do not occur, then that behavior will decrease in probability or be eliminated. An example is provided by a young boy who displayed disruptive behavior, reinforced by the laughter of his peers and his teacher's attention. He was instructed to imagine situations in which he exhibited the disruptive behavior, but no one noticed him. The negative behavior was eliminated in three weeks.

Imagining one's self performing positive behaviors has met with a good deal of success.

Covert practices allow an individual to identify with himself in fantasy, learn from the model he visualizes, and translate rehearsed behavior into overt activity. Positive imagery allows not only for desensitization of anxiety (Wolpe, 1973; Perloff, 1970), but also the formation and expression of novel behaviors (McFall and Lillesand, 1971; Cautela, 1970; Assagioli, 1965). Imagery has also been shown to be efficacious in modifying attitudes toward the elderly (Cautela and Wisocki, 1969). Interesting enough, positive imagery has been shown to be as effective as implosive therapy in the treatment of snake phobias (Donaldson, 1971).

It seems plausible to suggest that combining the theoretical constructs of identification and positive ideal modeling with the covert experience of imagination, one can realize the capacity for behavior and attitude changes. Indeed, Susskind (1970) utilizes an Idealized Self-Image (ISI) in confidence training to enhance self-concept. By combining the concepts of identification and a "self-fulfilling prophecy," a positive shift in thinking, feeling, and behavior may occur.

Rationale for Present Study

In the foregoing discussion, we have seen how modeling and the identificatory processes can influence behavior. The influence becomes manifest

by the display of novel responses, weakening or strengthening already existing response patterns, and facilitating performance of previously learned behaviors. These effects have been observed, for the most part, in laboratory experiments employing live, video, or verbally described models which allow S's the opportunity to exhibit imitative behavior.

Some aspects of modeling theory have been integrated with behavior therapy approaches, yet the purpose is usually to reduce or eliminate conditioned anxiety-response habits. Few of the behavior strategems utilize modeling constructs to alter self-concept or create enduring changes in personality. Rather, these approaches center primarily on the elimination or causation of certain behavior to make life more bearable.

It seems possible that a behavior therapy approach integrating modeling theory with covert practice of self as an ideal person will enhance self-concept. If identification with another person enhances the acquisition of certain qualities, characteristics, and affective states, then it seems likely that identification with a model created in fantasy may do the same. Covert practices such as Assagioli's and Kelly's have suggested that there is indeed a modeling effect taking place when one

uses an imaginative conception of an ideal person.

We have discussed the time-binding and role-taking functions of imagination, emphasizing the importance of images in affect expression, attitude change, and self-acceptance. Implied throughout is the notion that imagination has strong potential for the creation of a new self, a self more congruent with one's perception of his ideal type.

Rogers' (1951) extensive experience shows that the perceived self changes markedly during counseling, and in a direction which brings it closer to the pre-counseling ideal and the post-counseling ideal. Vargiu (1971) demonstrates in three case studies how the creative properties of the imagination enhance multitudinal aspects of personality as measured by the Personal Orientation Inventory.

Bandura and Walters (1963) suggest that symbolic modeling procedures be given greater attention in studying the effects of covert rehearsal on adult social behavior. Bandura (1965) notes that "the systematic use of modeling techniques, whether singly or in conjunction with other treatment methods, is likely to accelerate substantially the successful achievement of therapeutic outcomes. Modeling procedures are utilized extensively in shaping the

behavioral repertoires of psychotherapists, but are seldom employed in modifying the behavior of clients."

Woody (1971) suggests exposure to modeled behavior which is relatively close to the current behavior of a client in counseling; the difference of the two behaviors in the direction of the desired outcome. Ideal client-models have already been shown to be effective in providing an appropriate social model for those just entering counseling (Hansen, Niland, and Zani, 1969; Myrick, 1969; Krumboltz and Thoresen, 1964). Furthermore, the practice of hypnosis has often included the presentation of symbolic models describing how clients should behave during the posthypnotic period (Rosenberg and Gardner, 1958).

Imagination has been used successfully in several counseling strategies including Jung's (1954) ACTIVE IMAGINATION; the TWILIGHT IMAGING of Progoff (1963); Jellinek's (1949) SPONTANEOUS IMAGERY; AUTOGENIC TRAINING (Schultz and Luthe, 1959); the MEDITATION of Carl Happich (1932) Leuner's (1966) INITIATED SYMBOL PROJECTION; Assagioli's (1965) PSYCHOSYNTHESIS; Gerard's (1964) SYMBOLIC VISUALIZATION; Desoille's (1966) DIRECTED DAYDREAM, Bindrim's (1966) PEAK-ORIENTED PSYCHOTHERAPY, Shorr's (1972) PSYCHO-IMAGINATION THERAPY, and

Wolpe's (1973) RECIPROCAL INHIBITION. In addition, Maltz (1960), in his best-seller, Psycho-cybernetics, describes how forming mental pictures of one's self successfully performing a certain behavior will facilitate the overt enactment of that behavior.

The aforementioned authors believe, for the most part, that the attainment of psychological health takes place not on a conscious verbal level, but within the unconscious. Covert rehearsal and symbolic visualization become activities that precede behavioral change, first experienced on the level of the imagination. The various techniques of imagination and covert rehearsal may differ in the way images are evoked, but the basic experience is the same. It is the experience of visualizing symbolic images which produces personal integration, interpersonal congruence, emotional catharsis, symptomatic relief and a sense of union with reality (Cordner, 1968). Covert processes have done more than simply provide for the relief of symptoms and prior traumas; they have produced in-depth personality changes allowing for the birth of a new being, the evolvement of a higher self.

There exists only a handful of studies, however, concerning the use of symbolic modeling processes to produce behavior change. Most studies of modeling have shown how the process of introjection causes an

observer to modify his self-concept to be more like that of the model (cf. Stotland, Zander, and Natsoulas, 1961; Stotland and Patchen, 1961), yet these studies have relied primarily on live models or models described in written form. Furthermore, reports of success using various behavior rehearsal procedures have generally been in the form of case studies or anecdotal reports.

Although reports of success with covert rehearsal are numerous, there is a general lack of statistical data identifying changes in self-concept. The purpose of this study will be to explore the likelihood that visualizing one's self in fantasy, performing desired behaviors or experiencing certain positive affective states, will enhance self-concept. As one imaginatively identifies with himself as the ideal model--possessing desired attributes, characteristics, and emotions--the qualities of this model will move into conscious awareness. Specifically the hypotheses to be tested are:

Hypothesis 1 - Covert identification with an ideal self enhances self-concept.

Hypothesis 2 - Through covert rehearsal, there is a greater congruence between real self and ideal self.

CHAPTER III

METHOD

Subjects

A total of 117 male and female eleventh-grade volunteers were recruited from a central California high school. The only incentive offered the subjects was excusal from class during assessment and treatment periods. Of the total sample, 90 made scorable responses on pre- and post-measurements and were included in the final sample of 46 females and 44 males.

Design and Procedure

Pre-treatment instrumentation. In the initial phase of the experiment, 117 students were administered a series of tests designed to measure self-concept, real/ideal self congruence, and vividness of imagery. The Tennessee Self-Concept Scale (Fitts, 1965) was chosen to assess self-concept. The test contains 100 statements about self (e.g. "I am hard to be friendly with," "I feel good most of the time") which are answered by means of a five-point scale ranging from "completely false" to "completely true."

A Q-Sort procedure developed by Dymond (1954)

and modified by Catron (1966) was introduced to obtain an index of congruence between real and ideal self (see Appendix A). The original Dymond Q-Sort consisted of 37 "good adjustment" items and 37 "poor adjustment" items. The modified version included a clarification statement on two of the items and omitted four items judged as inappropriate for a high school population ("I doubt my sexual powers," "I am sexually attractive," "I am assertive," "I dislike my own sexuality") since these items have tended to create levity during test administration. The resulting list of 70 items contains 35 "good adjustment" items and 35 "poor adjustment" items as determined by ratings obtained from six well-trained practicing clinical psychologists. The procedure for sorting the 70 items was similar to that described by Williams (1962). Subjects sorted the cards into two piles: "more like me" and "less like me." Dymond's (1954) original 100-item Q distribution included a nine-pile sorting:

Pile No.	0	1	2	3	4	5	6	7	8
No. of Cards . .	1	4	11	21	26	21	11	4	1

However, further research on her part demonstrated that the sort could be simplified by two piles: "like me" (piles 5-8) and "unlike me" (piles 0-3) without a significant loss of validity. This provided a composite picture of the well-adjusted person with 37

positive indicators appearing on the "like me" side of the distribution and 37 negative indicators appearing on the "unlike me" side.

In the present Q-Sort, any subject's resemblance to the well-adjusted person could be computed by counting the number of the 70 items which he sorted to describe himself as the hypothetically well-adjusted person would. The optimal score any one subject could obtain is, of course, 70 if he places the 35 good-adjustment items in the "more like me" pile and the 35 poor-adjustment items in the "less like me" pile. Subjects performed the Q-Sort twice; once to describe their real or perceived self and once to describe their ideal self -- the person they would most like to be within themselves.

It was also necessary to assess ability to form vivid and lively images since there are strong indications that persons characterized as vivid imagers are adept at imitation and role-taking (Sarbin and Juhasz, 1969; Sarbin, 1969; Wilson, 1968). To measure vividness and clarity of imagery, a test designed by Betts (1909) and shortened by Sheehan (1967) was used. The original test included 120 items divided into seven modalities: visual, auditory, cutaneous, kinaesthetic, gustatory, olfactory, and organic. In the final form of the revised test, five items were selected for each modality. Subjects were asked to imagine certain items and rate the clarity

of their images by use of a seven-point rating scale. The scale ranged from "perfectly clear and as vivid as the actual experience" to "no image present at all" (see Appendix B).

At the end of this test, there was an additional question which asked, "How satisfied are you with yourself?" Subjects responded by means of a seven-point Likert scale ranging from "extremely dissatisfied" to "extremely satisfied" (see Appendix C).

Ninety subjects were selected for the succeeding phases of the experiment. These were randomly assigned to one of three treatment conditions consisting of 30 subjects in each condition. Subjects were further divided according to high imagery ability, medium imagery ability, and low imagery ability according to a single general factor of vividness obtained from the imagery scale (Table 1).

Experimental treatments. Two days elapsed between the initial assessment and the experimental phase of the study. Six graduate students in education and psychology assisted in conducting the experimental treatments. The experimenters were not informed of the hypotheses to be tested, but rather were led to believe that the study was being conducted to observe group dynamics in a high school setting. They did not participate in any of the assessment periods.

TABLE 1

SUMMARY OF THE EXPERIMENTAL DESIGN

TREATMENT CONDITIONS	VIVIDNESS OF IMAGERY		
	HIGH	MEDIUM	LOW
T_1	N=10	N=10	N=10
T_2	N=10	N=10	N=10
T_3	N=10	N=10	N=10

The three treatment groups consisted of a covert rehearsal condition (T_1) utilizing ideal models, a verbalization condition (T_2) which discussed ideal models but did not practice covert rehearsal, and a control condition (T_3) which participated in weekly discussion groups centered around school, home, and social problems. Subjects were told that they were part of an experiment designed to measure changes in self-concept after exposure to certain techniques and methods of self-improvement. They were informed that participation in the study was completely voluntary and they could withdraw at any time.

In the covert rehearsal condition, the experimenter provided the following instructions:

> Close your eyes and think through what you would really and realistically like to be. Let a mental picture of yourself as this person come from within you. Examine this image, getting to know it as well as you can. See yourself that way. Be sure this ideal person possesses those characteristics you wish to attain, bearing in mind your present problems. Just spend the next few minutes imagining yourself as this ideal person, the person you would most like to be (three minute pause).
>
> Now open your eyes and draw an image or symbol of your ideal person using the crayons and paper in front of you. Don't worry about your artistic abilities, just draw a picture of your ideal person. After you have finished, write down on the same paper any words that would help describe your ideal person (twenty minute pause, experimenters helping S's clarify their drawings).

Now that you've drawn and described your ideal person, ask yourself these questions: (1) Is the person right for you? (2) Is your ideal person realistic, is it someone you can actually become? (3) Can you give a first name to this person? Just make one up that sounds right for the person you have described (ten minute pause).

We will now learn the technique of covert rehearsal. We know that if you can practice a certain behavior in your imagination, it might make things a lot easier when the time comes for you to actually perform a certain way. You would actually be rehearsing a certain behavior in your mind beforehand. Let us learn how to rehearse ourselves in the role of our ideal person.

Close your eyes and visualize yourself as your ideal person. See your face, your eyes, your posture, your expression, your clothes, all embodying the qualities of that person . . . spend all the time you need to do this, then become that person; feel what it is like to be it. Visualize yourself in a number of everyday situations in your own life, possessing and acting out the qualities and attitudes of your ideal person (fifteen minute pause).

Now open your eyes. Spend at least ten minutes each day imagining yourself as your ideal person. Just go somewhere comfortable, close your eyes, and form a picture of yourself acting in a positive, successful way. Keep your drawing and refer to it daily. Make changes in your ideal person as they occur to you. If you are in an uncomfortable situation, ask yourself, "what would my ideal person do in this situation?" Be sure and take time each day to close your eyes and think of yourself as your ideal person, about ten minutes.

> You can also use covert rehearsal for specific situations. If you want to ask a girl out, for example, but are kind of nervous about it, you simply imagine yourself asking her out before you actually do so. Form a picture of yourself dialing the phone, using all the right words, and being very comfortable and relaxed throughout the situation. Are there any questions?

Following these instructions, the experimenters met with the covert rehearsal group every other day. These meetings lasted 45 minutes and provided an opportunity to practice covert rehearsal in a relaxed, informal setting. Time was allowed for questions about the technique and checks were made to insure that the participants were practicing covert rehearsal on a daily basis.

For subjects in the verbalization condition, the same instructions for construction of an ideal model were used, omitting an explanation of covert rehearsal. Subjects drew and defined their ideal person and were then provided with these additional instructions:

> For the next few weeks, I want each of you to think of your ideal person and how you could become more like him or her. Make changes in your ideal person as you go along, refining and clarifying this person's qualities until it becomes a representation of what you would most like to be within yourself. We will meet every other day to discuss your ideal person in small groups. If you have had successes acting like your

ideal person, feel free to share them with your group. Do you have any questions?

The verbalization group then met every two days in small groups (6-9 people in each group) with the experimenters facilitating the discussion. Ample opportunity was provided to modify their ideal persons and reflect on these changes.

Subjects in the control condition also met every two days and were assigned to small groups (6-9 people) to discuss various personal, school, and home problems. Each small group discussion was guided by an experimenter and usually lasted about 45 minutes. Participants were encouraged to express feelings that were of personal significance with the assurance that what they said would remain confidential.

Post-treatment measures. Treatment lasted exactly three weeks and was immediately followed by re-administration of the Tennessee Self-Concept Scale, the Q-Sort (real sort and ideal sort), and the subjective question, "How satisfied are you with yourself?" These measures were taken again after a second three weeks had elapsed. There was no experimental manipulation

during this second period. Instead, the follow-up assessment was primarily concerned with measuring stability of change (see Table 2).

TABLE 2

PHASES OF THE EXPERIMENT

TREATMENT GROUP	PHASE 1 (3 weeks) Pre-test of self-concept, real/ideal self congruence, and vividness of imagery	PHASE 2 (3 weeks) Experimental Treatments	PHASE 3 Post-test of self-concept and real/ideal self congruence	PHASE 4 Follow-up assessment of self-concept & real/ideal self congruence
T_1 - Covert Rehearsal High - Im Medium - Im Low - Im	Tenn. Self-Concept Scale, Q-Sort, Betts Scale, & Subjective Question	Covert Rehearsal of Ideal Models	Tenn. Self-Concept Scale, Q-Sort, and Subjective Question	Tenn. Self-Concept Scale, Q-Sort, & Subjective Question
T_2 - Verbalization High - Im Medium - Im Low - Im	Same	Discussion of Ideal Models	Same	Same
T_3 - Control High - Im Medium - Im Low - Im	Same	Group Discussion of Personal Problems	Same	Same

CHAPTER IV

RESULTS AND DISCUSSION

Results

Six separate three-way analyses of variance were performed on the data with two analyses for each dependent variable, one comparing pre-test results with the post-test data and another comparing the post-test with the follow-up assessment. The dependent measures of self-concept, real/ideal self congruence, and subjective estimate of self-satisfaction were adjusted by covarying the IQ scores for each subject. The G factor from the General Aptitude Test Battery was used as a measure of intelligence. The G score correlates .89 with the Wechsler Adult Intelligence Scale full scale IQ scores (United States Department of Labor, 1970). Table 3 shows significant correlations between intelligence and measures of self-concept and real/ideal self congruence. However, this relationship did not continue with the subjective question data nor was there any significant relationship between intelligence and imagery ability which is surprising since it seems logical to assume that verbal IQ would have an effect on image formation (Horowitz, 1970). We may conclude, however, that intelligence

TABLE 3

Correlation of IQ with the Self-Concept Measure, Real/Ideal Self Congruence Index, and Subjective Question at each Experiment Phase

	Self-Concept Measure	Real/Ideal Index	Subjective Question
Pre-test	.27*	.34**	.12
Post-test	.37**	.43**	.18
Follow-up	.36**	.43**	.15

* p = .01

** p = .001

plays an important part in determining self-concept and role relationships between the real and ideal self.

Experimental effects on self-concept

It will be recalled that the Tennessee Self-Concept Scale was used in the pre-test, post-test and follow-up phases as a measure of self-concept. For purposes of this experiment, the total P score from this scale was used as the criterion variable. This score is the most important single score on the Tennessee profile since it reflects the overall level of self-esteem. P combines perceptions of physical self, moral-ethical self, personal self, family self, and social self in terms of identity (what S is), self-satisfaction (how S accepts himself), and behavior (how S acts). The covariance adjusted self-concept means are shown in Table 4.

The interaction effects of treatment conditions with the experimental phases ($F=147.61$, $df=2/81$, $p=.01$) are shown in Figure 1. Post hoc procedures using Scheffe' (1959) revealed significant self-concept improvements in the covert rehearsal group between the pre- and post-test evaluations (362.57 - 319.47 = 43.10) and the post-test vs. follow-up contrast (374.00 - 362.57 = 11.43). The verbalization group also produced a significant difference between the pre- and post-test measures (334.00 - 323.53 = 10.47) but failed to do so for the post-test/follow-up

TABLE 4

Covariance Adjusted Means in Each Treatment Group for the Self-Concept Measure

Treatment Group		Vividness of Imagery			
		High	Medium	Low	$\bar{X}$
T_1	Pre-test	339.90	302.80	315.70	319.47
	Post-test	374.20	348.40	365.10	362.57
	Follow-up	380.10	366.50	371.40	374.00
T_2	Pre-test	336.70	319.60	319.30	323.53
	Post-test	344.70	328.30	329.00	334.00
	Follow-up	349.00	331.30	330.00	336.77
T_3	Pre-test	330.30	325.90	299.40	318.53
	Post-test	329.30	325.40	298.30	317.67
	Follow-up	329.60	329.50	303.70	320.93

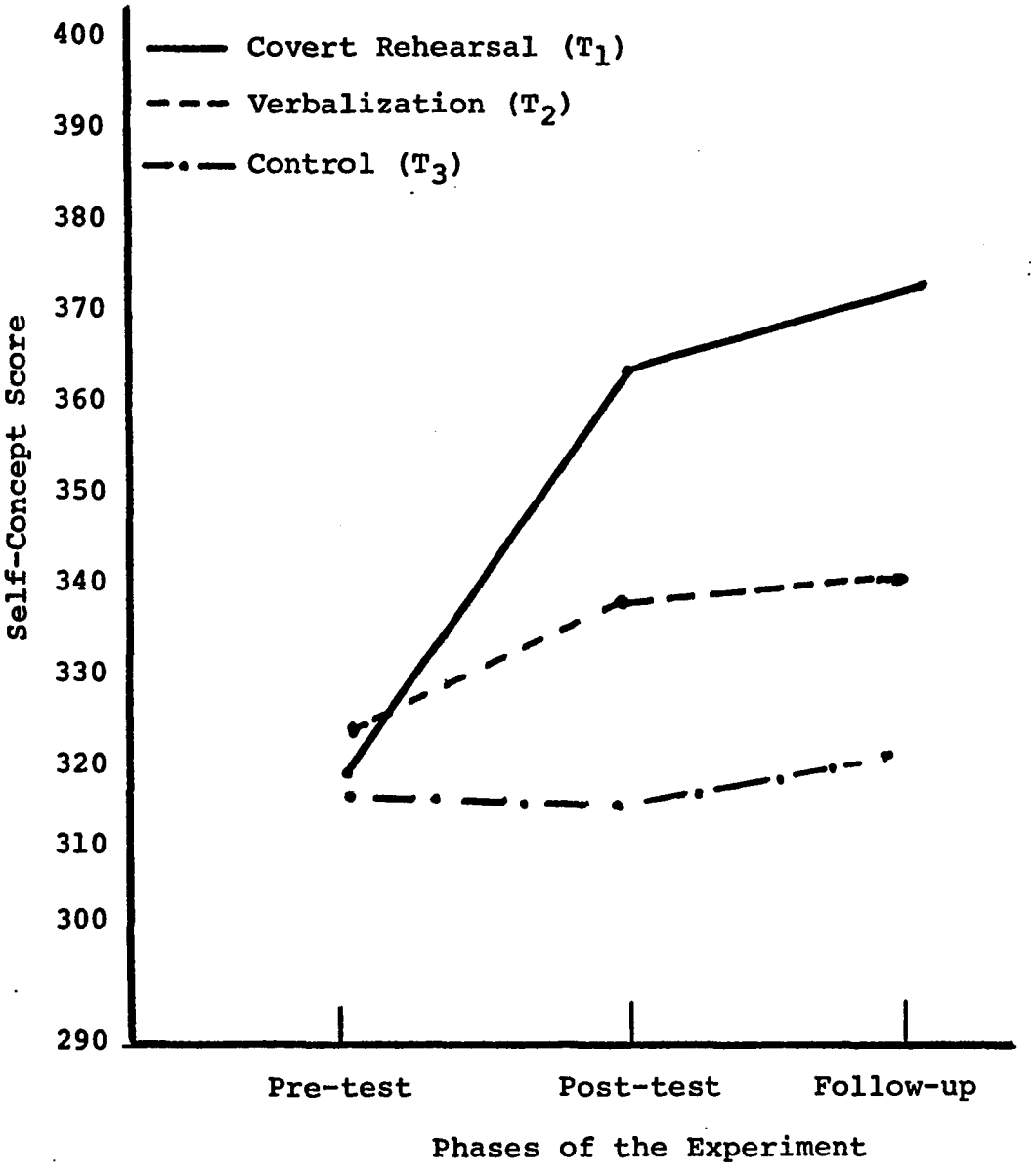


Figure 1. Interaction effects of treatment conditions with experimental phases for the self-concept measure.

comparison (336.77 - 334.00 = 2.77). Nevertheless, there was a persistence of change for the verbalization group and a continued increase for the covert rehearsal group by the conclusion of the experiment. There was no significant difference between the three groups at the outset of the experiment. In addition, the control group remained essentially the same throughout the experimental phases indicating that the increases observed in the other treatment groups were not a mere function of maturation, the Hawthorne effect, reactive measures, or regression. At the post-test and the follow-up assessment, the covert rehearsal group was significantly higher in self-concept than the other two groups, and the verbalization group was somewhat higher than the control group.

In Figure 2, effects of ability to form vivid and clear images over time can be seen. Results for the pre-test/post-test analysis ($F=5.57$, $df=2/81$, $p=.01$) and the post-test/follow-up differences ($F=11.01$, $df=2/81$, $p=.01$) led to post hoc confidence intervals showing significant differences in self-concept scores between high, medium, and low imagers. The high imagers possessed higher self-concepts than their medium and low counterparts.

Experimental effects on real/ideal self congruence

Congruence scores between real and ideal self

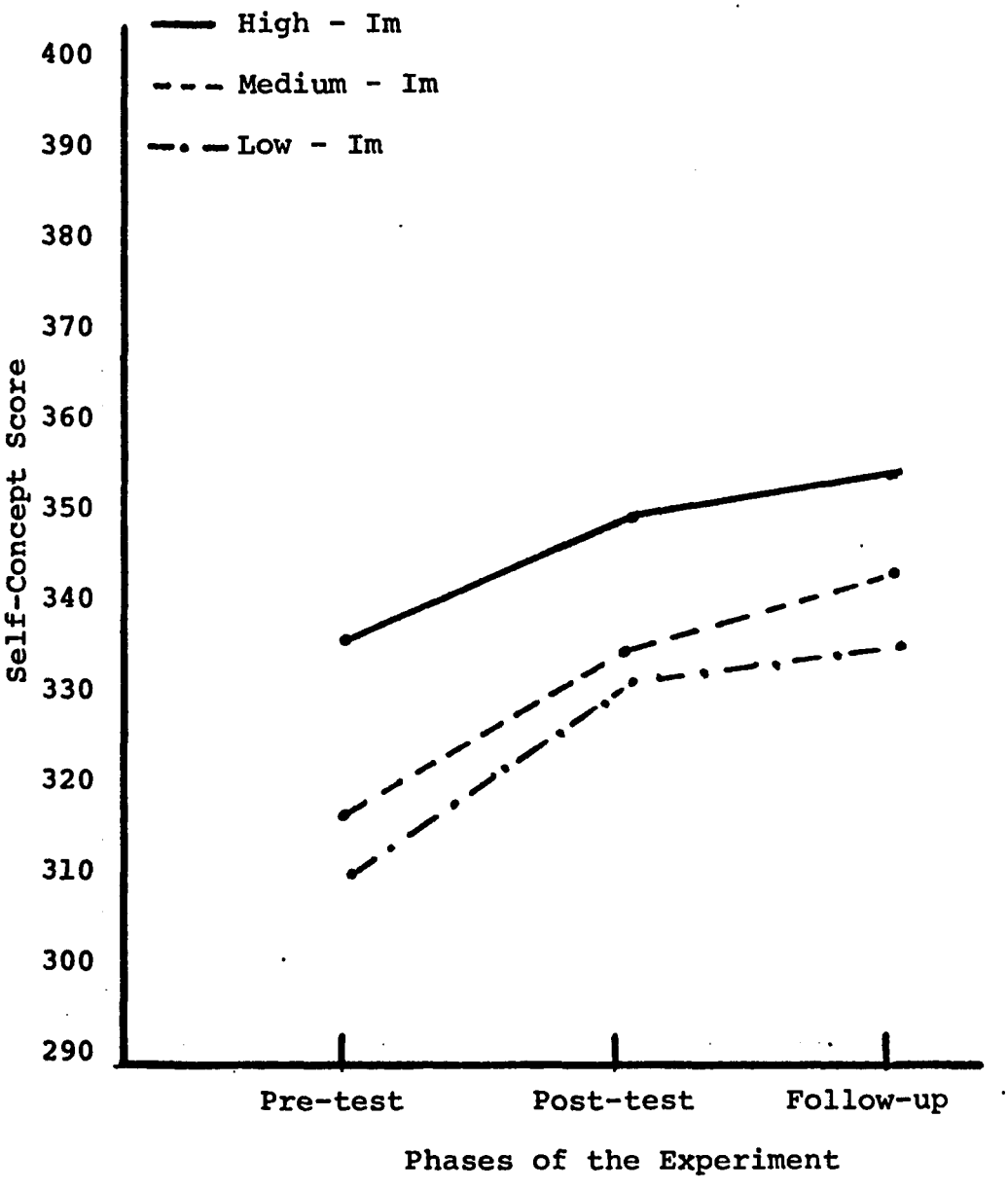


Figure 2. Interaction effects of vividness of imagery with experimental phases for the self-concept measure.

were derived by counting the number of Q-sort statements which were sorted into the same piles ("more like me" and "less like me") for the concepts being compared (NOTE: The Q-Sort is constructed in such a way that greater congruence between real and ideal self can only occur via an ascending real self rather than a descending ideal self. Only Dymond's (1954) positive adjustment items are considered in scoring S's "more like me" pile, whether it be the real sort or the ideal sort. Because of this, the highest attainable score would be 70 with the proper 35 positive adjustment items in the "more like me" stack for both the real sort and ideal sort. This can only occur by the real self ascending to a position of complete positive adjustment in congruence with an ideal self which also was sorted to indicate complete positive adjustment. Specifically, there would be the same 35 positive adjustment items appearing in the "more like me" pile for the real sort and the ideal sort. Each positive adjustment item that did not appear in the "more like me" pile for both sorts would reduce the congruence index by two. Congruence thus becomes a condition whereby positive adjustment items coincide in the two sorts. Perfect congruence would not be obtained simply because a subject had, say, placed the same five positive adjustment items in both sorts. True, this would be complete congruence

between those five items but complete positive adjustment between real and ideal self could only result from having the same 35 positive adjustment items in both sorts. Dymond calls this perfect congruence.).

An analysis of variance was performed on the covariance adjusted congruence indices (see Table 5). The interaction effects of treatment conditions with the three experimental phases are illustrated in Figure 3. Pre/post differences were significant at the .01 level ($F=14.39$, $df=2/81$) as were post/follow-up differences ($F=7.75$, $df=2/81$). There was no difference between the three groups at the pre-test stage, yet both the covert rehearsal and verbalization group were significantly different from the control group at the post-test and follow-up stages. In addition, a 95% Scheffe' post hoc confidence interval constructed around the difference between covert rehearsal and verbalization at the post-test stage was not significant ($57.80 - 54.33 = 3.47$) but was significant at the follow-up stage ($60.20 - 55.67 = 4.53$). Significantly higher congruence scores were obtained by the covert rehearsal group throughout the experiment, yet the verbalization group obtained higher indices only at the end of the first three weeks. The control group remained essentially the same throughout the six weeks.

TABLE 5

Covariance Adjusted Means in Each Treatment Group for the Real/Ideal Self Congruence Index

Treatment Group		Vividness of Imagery			
		High	Medium	Low	$\bar{X}$
T_1	Pre-test	56.40	43.60	44.40	48.13
	Post-test	63.20	56.00	54.20	57.80
	Follow-up	63.40	59.00	58.20	60.20
T_2	Pre-test	49.60	51.80	47.80	49.73
	Post-test	56.00	54.00	53.00	54.33
	Follow-up	56.60	56.00	54.40	55.67
T_3	Pre-test	40.80	47.80	38.40	45.67
	Post-test	49.20	48.20	42.40	46.60
	Follow-up	49.40	49.60	42.20	47.07

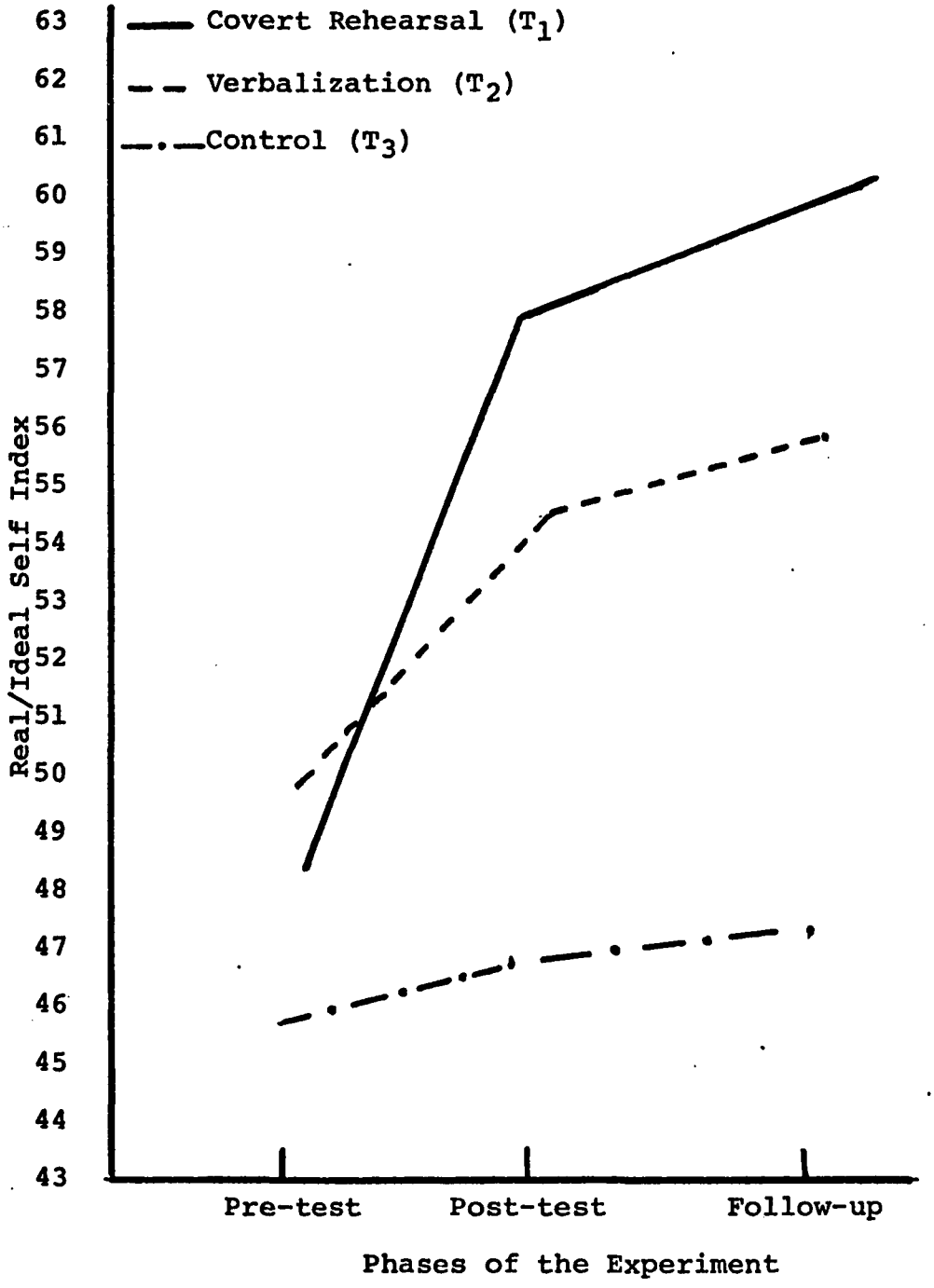


Figure 3. Interaction effects of treatment conditions with experimental phases for the real/ideal self congruence index.

Vividness of imagery produced significance only for the post/follow-up analysis (F=7.49, df=2/81, p=.01) as shown in Figure 4. Post hoc comparisons demonstrated that those with high ability to form vivid mental images concluded the experiment with greater real/ideal self congruence scores than the medium and low imagers.

The findings in Figure 3 suggest important changes in real/ideal self congruence for the covert rehearsal group during the first three weeks of the experiment and continued changes, although not as great, during the final three weeks. However, the verbalization group also produced higher congruence indices than the control group during the first three weeks, the change remained stable during the second three weeks, yet the covert rehearsal group was significantly higher in real/ideal self congruence by the end of the study.

Experimental effects on self-satisfaction

Respondents used a 7-point Likert scale to answer the question, "How satisfied are you with yourself?" Table 6 shows the covariance adjusted means for each treatment condition. There is a highly significant difference at the post-test stage (F=18.58, df=2/81, p=.01) between covert rehearsal and verbalization (5.97 - 5.27 = .70)

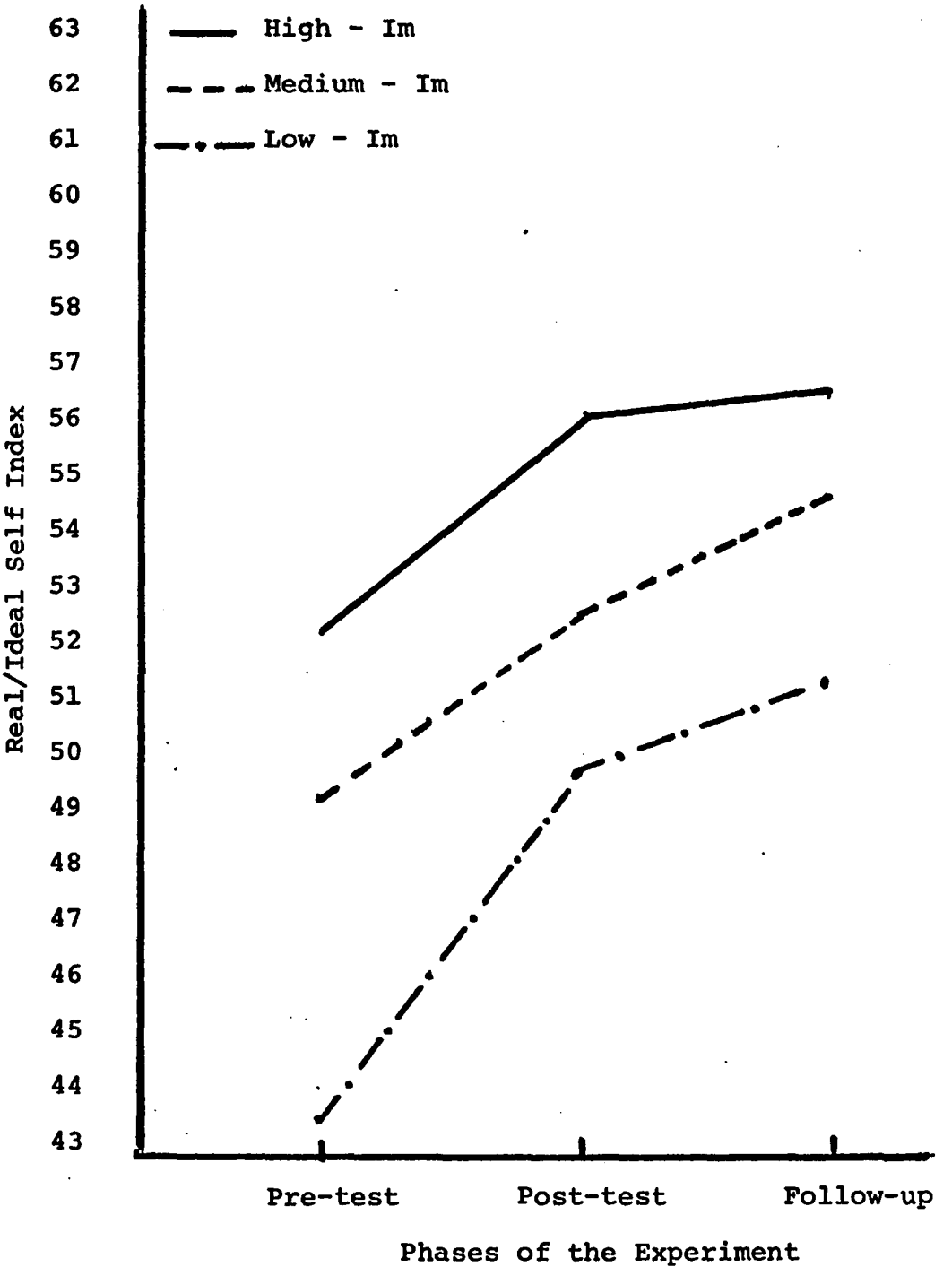


Figure 4. Interaction effects of vividness of imagery with experimental phases for the real/ideal self congruence index.

TABLE 6

Covariance Adjusted Means in Each Treatment Group for the Subjective Question

Treatment Group		Vividness of Imagery			
		High	Medium	Low	$\bar{X}$
T_1	Pre-test	5.00	4.50	4.30	4.60
	Post-test	6.10	5.90	5.90	5.97
	Follow-up	6.00	6.20	6.40	6.20
T_2	Pre-test	5.00	4.50	4.50	4.67
	Post-test	5.10	4.80	5.00	4.97
	Follow-up	5.50	4.80	4.90	5.07
T_3	Pre-test	4.80	4.90	4.70	4.80
	Post-test	5.30	5.60	4.90	5.27
	Follow-up	5.30	5.70	5.30	5.43

and between covert rehearsal and control conditions (5.97 - 4.97 = 1.00) at the post-test phase (Figure 5). Post hoc procedures revealed no other significant differences.

There were significant differences between the pre- and post-test for the High-Im, Medium-Im, and Low-Im groups although there was no significant difference between these groups at either the post-treatment assessment or the follow-up assessment (see Figure 6). The results obtained from this measure are similar in part to those obtained from the self-concept measure. Participants in the covert rehearsal group were able to raise their subjective estimate of self-satisfaction during the first three weeks of treatment. However, the self-concept measure supported further change during the second three weeks whereas the subjective measure of self-satisfaction did not. A reason for this may be the simplicity of the subjective rating scale and the possibility that S's merely placed their "X" in approximately the same place each time.

There was no significance for the Treatment X Imagery interaction for any of the dependent variables. This is contrary to what would normally be expected; i.e. that imagery ability would be an important variable in covert rehearsal. Perhaps ability to form vivid and clear images is more importantly related

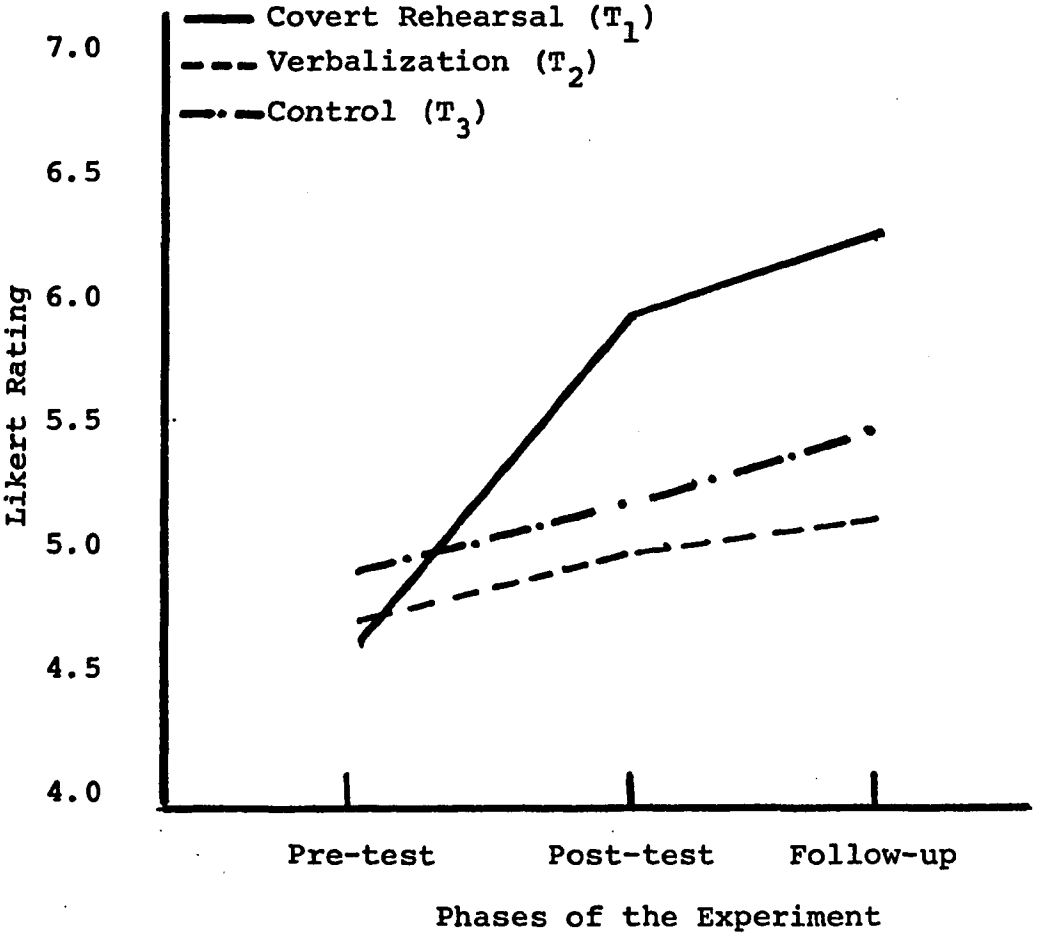


Figure 5. Interaction effects of treatment conditions with experimental phases for the subjective question self-rating.

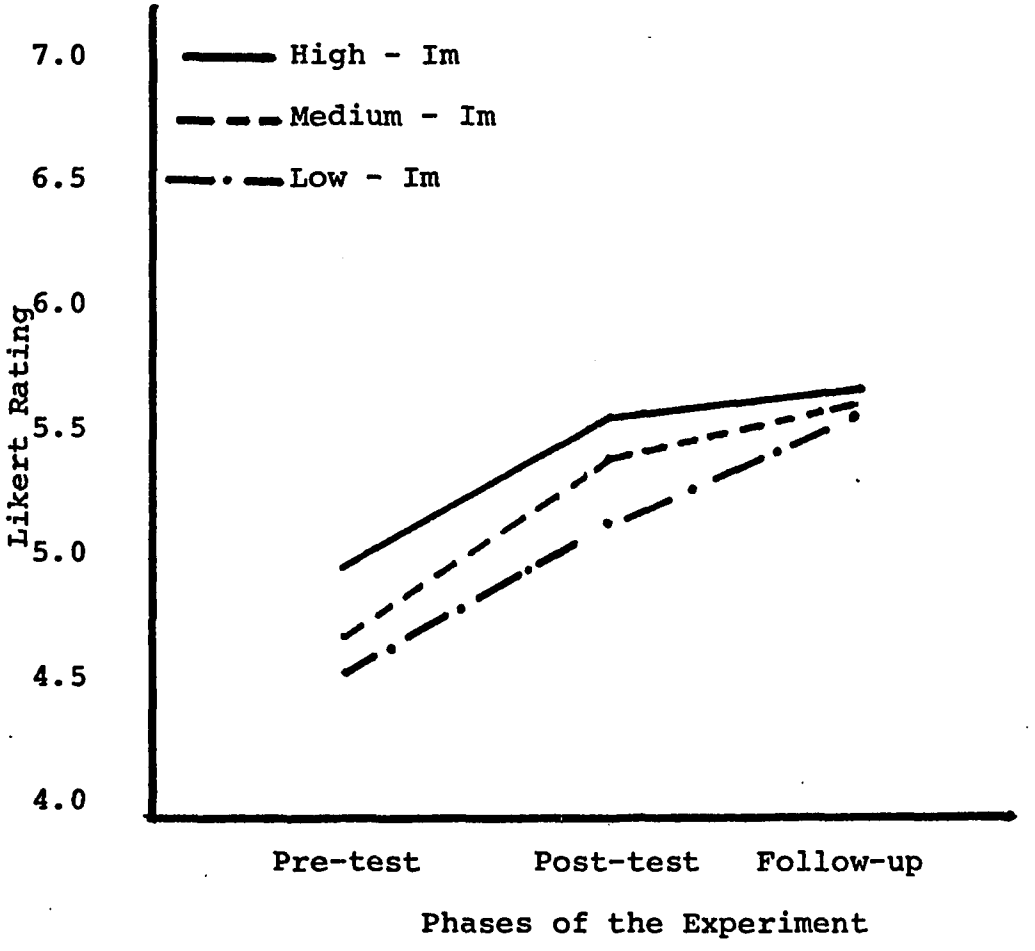


Figure 6. Interaction effects of vividness of imagery with experimental phases for the subjective question self-rating.

to other variables such as past sensory experience or quality of environmental manipulation. Further research seems necessary to clarify this.

Discussion

The results of the present investigation provide strong support for the efficacy of ideal models in covert rehearsal to influence self-concept. Subjects exposed to covert rehearsal treatment displayed a higher self-concept and greater congruence between real and ideal self during subsequent phases of the experiment. These changes persisted for an additional three weeks after the treatment ended. Subjects in the verbalization group also experienced some positive change in self-concept and real/ideal self congruence during the treatment phase of the experiment (first three weeks) but the changes were not as great as those for the covert rehearsal group. Moreover, the changes in the verbalization group did not persist during the second three weeks of the experiment, but rather remained the same. The control group remained unchanged throughout the study.

Data obtained from the experimental manipulation confirm the hypothesis that covert identification with an ideal self enhances self-concept (Hypothesis 1). Although changes in self-concept were reported for both the covert rehearsal group and the verbalization group, the covert rehearsal group reflected

much higher and persistant changes than the verbalization group. It seems likely, however, that identification with an ideal self in either group became the primary reason for the changes. It could very well be that covert rehearsal facilitated introjection of the ideal model's qualities, although this is only speculation. We can observe, nevertheless, how the covert rehearsal group moved their mean self-concept from a pre-test percentile of 20 to a post-test percentile of 70. Subsequent to this, a three week no-treatment phase resulted in an even higher follow-up percentile of 80. It is of interest to note that Fitts' (1965) populations used in norming the Tennessee Self-Concept Scale reported self-concept scores falling around the 40th percentile. The reason for the lower pre-treatment percentile obtained in this study is not clear although it may have been due to a lack of comprehension regarding the measuring instrument. If this is true, then the higher self-concept scores obtained in subsequent experimental phases may have resulted in part from a more thorough understanding of what was being asked on the self-concept scale. However, since the control group remained at or near the 20th percentile throughout the investigation, we are forced to look for a more salient explanation. A partial answer is provided by Fitts (1965) whose

norm group reports a mean self-concept score of 345.57 with a standard deviation of 30.70. If one standard deviation is substracted from the norm group score, the norm group then becomes much more similar to the group used in this study.

Whether the covert rehearsal group practiced the technique during the second three weeks is not known although their continued practice of covert rehearsal could certainly have caused the continued change. This makes sense when one considers that the verbalization group did not reflect a continued change past the first three weeks of the experiment. Although the verbalization group developed ideal models in exactly the same way as the covert rehearsal group, their model interactions took place overtly in conscious activity. This appears to have been less efficient in integrating the ideal models' qualities with the self-concept of the subjects in the verbalization group.

The major conclusion is that covert rehearsal of ideal models allows for rapid and enduring changes in self-concept. Subjects were able to significantly alter their self-concept during a three-week period and then were able to continue the process for another three weeks (at a slower rate, however). It seems plausible to suggest that similar identificatory processes took place during either overt or covert

modeling. Previous research has demonstrated the effectiveness of modeling as a means of behavioral change and the present results confirm the positive effect of covert modeling processes in enhancing the self-concept. Further support for this conclusion is found in the subjective ratings regarding the degree of self-satisfaction in S. Again, the covert rehearsal group was able to raise their mean estimate of self-satisfaction during the first phase of the experiment and stabilize this change over the second phase. Neither the verbalization group nor the control group experienced any significant changes in subjective self-satisfaction.

In retrospect, it seems likely that several factors coalesced to confirm Hypothesis 1. S's who increased their self-concept apparently established a gratifying role relationship with their ideal model (Kelman, 1961). Lazowick's (1955) "pseudo identity" was seen in those subjects who perceived their self-concept more in alignment with their ideal self, responding to M by identification with M's desirable qualities and affective states (Kagan, 1958; Sanford, 1955). This can be explained by Whiting's (1960) status envy theory which reminds us that deprivation of a resource is a motivating variable. S's who perceived disparity between themselves and what they would like to be were

perhaps motivated to establish a closer alignment between their perceived self and their ideal model. The covert rehearsal group was, of course, given a technique to facilitate this alignment and the results confirm the technique's effectiveness. As certain behaviors were rehearsed in the imagination, subjects were able to obtain positive reinforcement by subsequent success experiences in their personal and social environments.

There is also support for Hypothesis 2 which states that there is a greater congruence between real and ideal self through covert rehearsal. The covert rehearsal group concluded the experiment with higher congruencies between real self and ideal self than the verbalization and control groups. The congruence score used in the study is essentially an adjustment index; an indicator of how well-adjusted S is. Major positive shifts in the covert rehearsal group and the verbalization group occurred during the initial phase of the experiment. Evidently, these shifts were cognitive in nature, perhaps generated by an awareness of ideal model qualities. During the second phase of the experiment, only the covert rehearsal group continued to increase the congruence between real and ideal self in a direction of positive adjustment whereas the verbalization group stabilized. The persistence of change in the covert rehearsal

group demonstrates again that ideal models in covert practice become perceptually integrated with S's self-concept. This is also true to some extent with the verbalization group although the results are not nearly as impressive. We find again that covert rehearsal produced the greatest change in the dependent variable while overt ideal modeling was only somewhat effective in accomplishing this. The relationship between real and ideal self was the same in each treatment group during pre-treatment assessment. Thus, random procedures prevented systematic bias in the experiment, however, the repeated measures design may have caused the participants to become more familiar with the Q-sort at each subsequent assessment. If this occurred, then a greater understanding of ideal self qualities may have resulted. Moreover, the familiarity could have been precipitated by the ideal model exercise where experimenters met with the covert rehearsal and verbalization groups to assist in clarifying subjects' ideal models. It has been found that an experimenter can unwittingly communicate to his subjects what he wants them to do (Rosenthal, 1966), yet this is unlikely here since E's were unaware of the investigation's true purpose. Nevertheless, a study by Rosenthal (1955) found that in spite of the usual precautions taken by therapists to avoid imposing

their values on clients, clients who improved changed some values in the direction of the therapists' values. It is possible that although E's were not communicating the purpose of the study to the subjects, they may have unknowingly conveyed their own values and beliefs regarding ideal model qualities. One other possibility is that subjects in the covert rehearsal and verbalization conditions undergoing pre-treatment assessment may have been led to believe through their test-taking that they were going to change their self-concept during the modeling exercises. Hence, the self-concept scale and the Q-Sort may have been reactive measures; indications of the true purpose of the investigation (Campbell, 1957), although this is unlikely since the covert rehearsal group changed more.

A second aspect of the present design which calls for some comment is the brief duration between each experimental phase (three weeks). Since the study was designed to investigate the effectiveness of covert ideal modeling as a short-term counseling strategy, a longer period did not seem justified. We would do well to remember, however, that although reinforcement is not needed (Bandura, 1965), certain eliciting cues may be necessary in subsequent weeks to more fully integrate these changes in the form of generalized overt behavior (Bandura, 1972). On the

other hand, behavior rehearsal and flooding procedures (Wolpe, 1973) suggest that initial behavior change is long lasting if provided reinforcement in the form of repeated success experiences.

The results also suggest that ability to form clear and vivid mental images affects self-perception. High imagers reported higher self-concepts than medium imagers and medium imagers possessed higher self-concepts than low imagers. In the real/ideal self congruence analysis, high imagers also obtained higher indices than the other groups by the conclusion of the experiment. The subjective ratings of self-satisfaction yielded no differences between high, medium, and low imagers. The correlation between imagery ability and self-concept is not explainable from available research although it seems interesting to consider the possibility that vividness of imagery may be related to identification; i.e. that the process of modeling may be facilitated by high imagery ability. Some of the cognitive processes that occur during identification take place on a covert level and by increasing the activity of covert processes during modeling, we can accelerate behavior change. Our self-concept is composed to some extent by interactions with significant others and we choose either consciously or unconsciously certain people as models. This same process is

replicated through covert modeling where we again choose a significant other, this time ourself as an ideal person, with whom to interact. While this is happening, we begin to shift our behavior and self-perceptions more towards our ideal self.

If imagery ability is related to self-concept, and the present study suggests that it is, then the self-concept may be positively manipulated through the increased use of covert processes. It is common knowledge that many persons will rehearse a certain behavior before the actual performance (i.e. a job interview), sometimes without a conscious awareness that they are doing so. Furthermore, previous research has shown that imitation and role-taking are influenced by one's facility with mental imagery (Juhasz, 1969) and if the process of covert rehearsal is utilized in a context of ideal models, then it is highly likely that personality and behavior change will result. The present experiment provides support for such change taking place; change which can occur in a relative short period and which is enduring.

CHAPTER V

CONCLUSION

The purpose of this study was to examine variables of self-concept and real/ideal self congruence to see if they could be positively influenced by covert modeling procedures. It was found that subjects practicing covert rehearsal of self as an ideal person experienced greater positive shifts in self-concept and real/ideal self congruence than a verbalization group interacting overtly with ideal models and a control group having no model interactions.

The implications for counseling are obvious. Clients with negative or low self-concepts could construct an ideal person with the help of a counselor. Once the ideal person is defined, covert rehearsal of this model would begin. By continued interaction in fantasy with the ideal model, positive shifts in self-concept should result. Initial changes may result from the basic ideal model construction since the treatment groups that used ideal models, whether covertly or overtly, both reported significant changes in self. It should be remembered, however, that the covert rehearsal group obtained the

more elegant changes in self-concept as well as real/ideal self congruence.

Covert rehearsal may not only be used for global changes in self, but for specific behaviors as well. In practicing assertive responses, for example, a client would choose a desired assertive behavior, imagine himself displaying that behavior, and then seek to experiment with that behavior in the social milieu. Covert rehearsal of the specific behavior would be a special form of modeling in that one identifies with a categorical component of self as an ideal person.

Certain maladaptive behavior and anxiety response tendencies could be also influenced by covert rehearsal. During covert rehearsal, one imagines self displaying only positive, successful behaviors. The reinforcement for maladaptive behavior is removed during covert rehearsal so that the client begins to "feel" through mental imagery what it is like to act differently. As he continues to imagine himself acting differently and more positively, it becomes easier for him to believe that it may be possible to act in reality in the same manner. Cautela's (1973) description of covert extinction indicates that there is a generalization of modeled events in fantasy to external situations.

Covert rehearsal would be quite appropriate in

settings which preclude long-term counseling. Since behavior change is facilitated so quickly by covert practice, clients can be instructed in the technique early in the counseling relationship. As counseling proceeds, refinements and modifications in the ideal model or the specific behavior to be acquired can be accomplished.

Perhaps the most important application of covert rehearsal comes back to the enhancement of self-concept. By choosing various desirable elements and qualities of personality and then incorporating these characteristics into an ideal model construct, some change in self-concept should result. This change will be enhanced by regular interactions with the ideal model in the imagination.

Hopefully, further research will examine the effects of covert rehearsal of self as an ideal person on specific populations such as obese persons, homosexuals, the handicapped, or the disadvantaged. The high school population used in this study provided numerous and diverse applications of covert rehearsal and brought the awareness that many uses of the technique can be made by counselors. May the future bring increased utilization of covert processes in helping people achieve personal growth and orientational congruence.

APPENDIX A

LIST OF 70 Q-SORT ITEMS

(From Dymond, 1954; Catron, 1966)

Item No.	Statement
2	I put on a false front
4	* I make strong demands on myself
5	* I often kick myself for the things I do
6	I often feel humiliated
9	* I have a warm emotional relationship with others
11	* I am responsible for my troubles
12	* I am a responsible person
13	I have feelings of hopelessness
15	* I can accept most social values and standards
16	I have few values and standards of my own
18	It is difficult to control my aggression
19	* Self-control is no problem to me
22	* I usually like people
23	* I express my emotions freely
25	I want to give up trying to cope with the world
26	* I can usually live comfortably with the people around me
27	* My hardest battles are with myself
28	I tend to be on my guard with people who are somewhat more friendly than I had expected
29	* I am optimistic
32	I usually feel driven
33	* I am liked by most people who know me
36	I feel hopeless
37	* I can usually make up my mind and stick to it
38	My decisions are not my own
40	I am a hostile person
41	* I am contented
42	I am disorganized
43	I feel apathetic (that is, I don't get excited about anything)

44	*	I am poised
47	*	I am impulsive
49		I don't trust my emotions
50		It's pretty tough to be me
51	*	I am a rational person (that is, I think before I act)
52		I have the feeling that I am just not facing things
53	*	I am tolerant
54		I try not to think about my problems
55	*	I have an attractive personality
56		I am shy
59		I am no one. Nothing seems to be me
61	*	I am ambitious
62		I despise myself
63	*	I have initiative
64		I shrink from facing a crisis or difficulty
65		I just don't respect myself
67	*	I take a positive attitude towards myself
69		I am afraid of a full-fledged disagreement with a person
70		I can't seem to make up my mind one way or another
71		I am confused
72	*	I am satisfied with myself
73		I am a failure
74	*	I am likable
75	*	My personality is attractive to the opposite sex
76		I am afraid of sex
77		I have a horror of failing in anything I want to accomplish
78	*	I am relaxed, and nothing really bothers me
79	*	I am a hard worker
80	*	I feel emotionally mature
83		I really am disturbed
84		All you have to do is just insist with me, and I give in
85		I feel insecure within myself
86		I have to protect myself with excuses, with rationalizing
88	*	I am intelligent
90		I feel hopeless
91	*	I am self-reliant
94	*	I am different from others
95		I am unreliable
96	*	I understand myself
97	*	I am a good mixer

98	*	I feel adequate
99		I am worthless

* The 35 items starred with an asterisk have been judged in Dymond's 1954 study to be "positive adjustment" items. The remaining 35 unstarred statements are "poor adjustment" items.

Items 43 and 51 were altered by Catron for purposes of clarification. The additional phrases are presented here within parentheses. Catron also eliminated the following items, judging them inappropriate for a high school population:

Item No.		Statement
7		I doubt my sexual powers
35	*	I am sexually attractive
68	*	I am assertive
100		I dislike my own sexuality

APPENDIX B

THE BETTS QMI VIVIDNESS OF IMAGERY SCALE

INSTRUCTIONS FOR DOING THE TEST

The aim of this test is to determine how vivid or clear you are able to imagine things. The items of the test will bring certain images to your mind. You are to rate the vividness of each image by using the following rating scale:

	Rating
Perfectly clear and as vivid as the actual experience	1
Very clear and comparable in vividness to the actual experience	2
Moderately clear and vivid	3
Not clear or vivid, but recognizable	4
Vague and dim	5
So vague and dim as to be hardly recognizable	6
No image present at all	7

For example, if your image is 'vague and dim,' you give it a rating of 5. Record your answer in the brackets provided after each item. A copy of the rating scale will be printed on each page. Please do not turn to the next page until you have completed the items on the page you are doing, and do not turn back to check on other items you have done. Complete each page before moving on to the next page.

* * * * * * * * *

An example of an item on the test would be one which asked you to consider an image which comes to your mind's eye of a red apple. If your image was moderately clear and vivid, you would check the rating scale and mark '3' in the brackets as follows:

Item	Rating
5. A red apple	(3)

Now turn to the next page when you have understood these instructions and begin the test. Close your eyes each time you try and form a mental image of an item.

Think of some relative or friend whom you see often, consider carefully the picture that rises before your mind's eye. Classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item	Rating
1. The exact contour of face, head, shoulders, and body.	( )
2. Body posture.	( )
3. The rate and speed of walking; length of step.	( )
4. The different colors worn in some familiar outfit.	( )

Think of seeing the following, considering carefully the picture which comes before your mind's eye; classify the image suggested by the following question as indicated by the degree of clearness and vividness specified on the Rating Scale.

Item	Rating
5. The sun as it is sinking below the horizon.	( )

RATING SCALE

The image aroused by an item of this test may be:

Perfectly clear and as vivid as the actual experience	1
Very clear and comparable in vividness to the actual experience	2
Moderately clear and vivid	3
Not clear or vivid, but recognizable	4
Vague and dim	5
So vague and dim as to be hardly recognizable	6
No image present at all	7

* * * * * *

Think of each of the following sounds, considering carefully the image which comes to your mind's ear, and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rating
6.	The whistle of a locomotive	( )
7.	The honk of an automobile	( )
8.	The mewing of a cat	( )
9.	The sound of escaping steam	( )
10.	The clapping of hands in applause	( )

Think of 'feeling' or touching each of the following, considering carefully the image which comes to your mind's touch, and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rating
11.	Sand	( )
12.	Linen	( )
13.	Fur	( )
14.	The prick of a pin	( )
15.	The warmth of a hot bath	( )

RATING SCALE

The image aroused by an item of this test may be:

Perfectly clear and as vivid as the actual experience	1
Very clear and comparable in vividness to the actual experience	2
Moderately clear and vivid	3
Not clear or vivid, but recognizable	4
Vague and dim	5
So vague and dim as to be hardly recognizable	6
No image present at all	7

* * * * * *

Think of performing each of the following acts, considering carefully the image which comes to your mind's arms, legs, lips, etc., and classify the images suggested as indicated by the degree of clearness and vividness specified on the Rating Scale.

Item		Rating
16.	Running upstairs	( )
17.	Springing across a gutter	( )
18.	Drawing a circle on paper	( )
19.	Reaching up to a high shelf	( )
20.	Kicking something out of your way	( )

Think of tasting each of the following, considering carefully the image which comes to your mind's mouth, and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rating
21.	Salt	( )
22.	Sugar	( )
23.	Oranges	( )
24.	Jelly	( )
25.	Your favorite soup	( )

RATING SCALE

The image aroused by an item of this test may be:

Perfectly clear and as vivid as the actual experience	1
Very clear and comparable in vividness to the actual experience	2
Moderately clear and vivid	3
Not clear or vivid, but recognizable	4
Vague and dim	5
So vague and dim as to be hardly recognizable	6
No image present at all	7

* * * * * * *

Think of smelling each of the following, considering carefully the image which comes to your mind's nose, and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rating
26.	A stuffy room	( )
27.	Cooking cabbage	( )
28.	Roast beef	( )
29.	Fresh paint	( )
30.	New leather	( )

Think of each of the following sensations, considering carefully the image which comes before your mind, and classify the images suggested as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rating
31.	Fatigue or tiredness	( )
32.	Hunger	( )
33.	A sore throat	( )
34.	Drowsiness	( )
35.	Feeling stuffed from a big meal	( )

RATING SCALE

The image aroused by an item of this test may be:

Perfectly clear and as vivid as the actual experience	1
Very clear and comparable in vividness to the actual experience	2
Moderately clear and vivid	3
Not clear or vivid, but recognizable	4
Vague and dim	5
So vague and dim as to be hardly recognizable	6
No image present at all	7

* * * * * * *

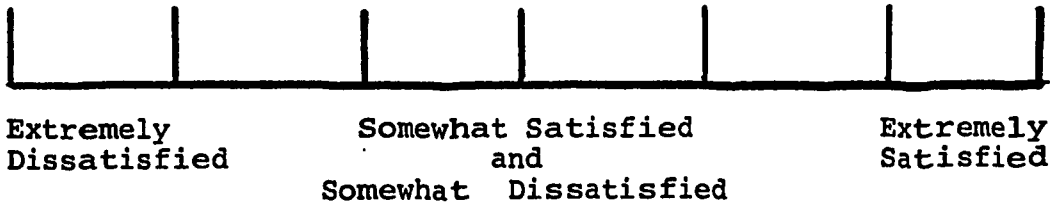
APPENDIX C

SUBJECTIVE ESTIMATE OF SELF-SATISFACTION

CONSIDER THE FOLLOWING QUESTION:

HOW SATISFIED ARE YOU WITH YOURSELF?

(place an X on the line below)



STOP AND WAIT FOR FURTHER INSTRUCTIONS

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