No. 2011

ABSTRACT

AN EXPERIMENTAL STUDY INVESTIGATING THE EFFECTS OF MODEL RACE AND MODEL AGE-REFERENT GROUP UPON THE VOCATIONAL INFORMATION-SEEKING BEHAVIORS OF MALE BLACK ELEVENTH-GRADERS

By

David B. Stugart

The general purpose of the study was to investigate the effectiveness of a specific procedure for eliciting vocational-educational planning behaviors among eleventh-graders. The specific purpose was to compare the effects of two distinct characteristics of a social model, i.e., (1) race of the model, and (2) age of the model, upon the acquisition and performance by male, adolescent blacks of a model's information-seeking behaviors.

The setting for the study was Pontiac Central High School in Pontiac, Michigan. The school is a large, urban high school with approximately equal numbers of blacks and whites in the student body. In the eleventh grade, approximately 40 per cent of the young men are blacks. The sample consisted of 105 male, eleventh-grade blacks.

Subjects were randomly assigned to five treatment groups, using a table of random permutations. The four

experimental treatment groups were: black peer model, white peer model, black adult model and white adult model. The fifth group was an active control group. The models were presented in booklets, with pictures and a written narrative explaining the model's activities.

All treatments were administered in one day by utilizing the entire eleventh-grade boys' gym class, including blacks and whites. While only the blacks were of interest in the study, this procedure reduced potential Hawthorne effects.

The experimental treatment consisted of the exposure of the subjects in treatment groups 1-4 to different (in age and race) models performing identical information-seeking behaviors. Control subjects were exposed to no model, merely reading a general occupational information booklet which appeared superficially identical to the "model" booklets. After the exposure period, each subject received materials which would be helpful in implementing the modeled behaviors.

After an interval of twelve days, each subject in treatment groups 1-4 completed two exercises (VPS--Vocational Planning Strategies, and PST--Perceived Similarities Test). Control subjects received the same VPS exercise, but necessarily were given an exercise other than the PST, which would have been meaningless to them. Similarly, after the twelve-day period, measures of the

frequency of performances of the modeled information-seeking behaviors (FISB) were collected for all subjects. The VPS measure yielded data on both the total number of vocational planning strategies and the number of modeled vocational planning strategies suggested. Thus, four criterion measures were used.

The basic hypothesis of interest was that the variables of race and age of a social model, taken independently or in various combinations, would influence the behavior of subjects who observed the model's behavior. That is, subjects similar to a model in race and age would more frequently imitate the model's acts than would subjects exposed to dissimilar models, or no models at all. Also of interest were the effects of a similarity induction procedure, intended as a means of inducing the subjects in different groups to perceive themselves as similar or dissimilar to the models they saw.

A number of hypotheses were tested, some using a multivariate analysis of covariance technique, with grade-point average as the covariate, and some using an analysis of variance procedure.

The principal conclusion of the study was that a treatment based on a rewarded model produced more vocationally-relevant behaviors than did control procedures. Differences due to age and race of the model were not obtained. Differences in all subjects' perceptions of

self and model were found, although differences in perceived similarity to the models were not found across the treatment groups. These and previous findings were examined, and the implications for future research were discussed.

AN EXPERIMENTAL STUDY INVESTIGATING THE EFFECTS OF MODEL RACE AND MODEL AGE-REFERENT GROUP UPON THE VOCATIONAL INFORMATION-SEEKING BEHAVIORS OF MALE BLACK ELEVENTH-GRADERS

By

David Benjamin Stugart

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Personnel Services
and Educational Psychology

1970

Dedicated to

my wife Jackie, for her strength and compassion, for always being there when most needed, and for giving us Lisa and Erica, who unselfishly accepted a part-time father for far too long

ACKNOWLEDGMENTS

The completion of a doctoral degree follows a long path of unique pitfalls and gratifications known to relatively few people. Those few know as well that they are indebted to many others who have helped them along that path. The author wishes to acknowledge the contributions of the following people to the completion of this study.

Dr. Richard Johnson, who served as chairman of my research and program committees throughout my doctoral program, and who provided knowledgeable and supportive guidance on the research.

Dr. Maryellen McSweeney, committee member, who gave unselfishly of her statistical prowess, of her time, and her encouragement throughout the entire study.

Dr. Gregory Miller, committee member, who offered support and provided the opportunity to initiate and then carry through the entire doctoral program.

Dr. Andrew Barclay, committee member, who offered technical assistance on the research and who also served as cognate adviser for the academic program.

Dr. Jay Allen, former member of the program committee, who gave his constant and undiluted support in the early stages of this program.

Dr. Garth Errington, principal, and other staff members who provided the setting for the study at Pontiac Central High School.

My friends, especially Art Dell Orto and Ken LaFleur, who always extended a helping hand and had time to listen with a sensitive ear to the problems of a friend.

TABLE OF CONTENTS

Chapter Page

APPENDICES

Appendix

LIST OF TABLES

CHAPTER I

THE EXPERIMENT AND ITS BASES

This research experiment was conceived and developed through the fusion of findings reported in previous studies. It deals with concepts developed in the fields of psychology, learning, education and vocational development. Synthesis of the data has suggested hypotheses related to the utilization of the tenets of imitative behavior (modeling) and a specific behavior response category, vocational information-seeking.

The general purpose of this study is to test the effectiveness of a specific procedure for eliciting vocational-educational information-seeking behaviors among eleventh-graders. More specifically, it tests the various effects of two distinct characteristics of a social model, i.e., (1) race of the model, and (2) peer versus adult referent-group association, upon the acquisition and performance by male, adolescent blacks of a model's information-seeking activities.

Conclusive evidence that learning can occur through the observation of social models is abundantly

available. This evidence is presented in brief in a later section of this chapter, followed by a more comprehensive review in Chapter II.

The sections which follow utilize supportive theoretical and empirical data taken from research literature relevant to this study. First is a discussion of vocational development and counseling theory, followed by an analysis of social model learning theory. With this foundation, subsequent sections integrate pertinent literature and research to generate the rationale for this study. Citation of the hypotheses to be tested, followed by an overview of the next four chapters, conclude this chapter.

Theory

This section deals with theoretical propositions and research data related specifically to this study. Attention is given to: vocational development and counseling theory; learning theories concerning modeling and imitation; modeling of information-seeking behaviors; perceived similarity to a model; race of the model; and peer versus adult referents as models.

Vocational Development and Counseling Theory

Social scientists long have concerned themselves with the perplexing problems inherent in the practice of vocational counseling. Some (Super, 1957; Roe, 1956; &

Holland, 1959) have, in fact, developed rather comprehensive theories of vocational development, which might be put to the test by industrious counselors in our school systems and employment agencies. A most interesting aspect of vocational development is the role within it of counseling. Wrenn (1962) has noted that perhaps we never complete the process of vocational choice. Rather, we make several choices, each time utilizing more information about the vocational world and ourselves. The vocational counselor today thus faces the problem of how to best help his client collect and interpret vocational-educational data, so the client may make those many career decisions in a meaningful manner.

How, then, do counselors meet this responsibility? In essence, they do so by attempting to change the behavior of their clients. Obviously, the client doesn't need to see a counselor, if his behavior is satisfactorily meeting his unique needs. Stefflre (1965) summed it up in this manner:

> Counseling is a form of purposeful intervention into the lives of clients. The purpose of the intervention includes the changing of behavior--in the broadest sense. . . . The client as well as the counselor expects differences to result from the counseling, although the client's overt desire for change may be unexpressed and minimal. Being concerned with changing the ways in which the client behaves, the counselor will presumably act from some theoretical base which includes a point of view on how change is best accomplished (p. 259).

Stefflre states in no uncertain terms that theorists of the "behavioral" school have the most specific and explicit plan for enacting behavior changes in clients:

> They (behavioral counselors) diagnose the situation to determine the responses to be extinguished and those to be encouraged. By a form of conditioning, they set about systematically to induce more appropriate responses. Most self-conscious and aware, this position knows what it is trying to change and how it hopes to accomplish its goals (p. 260).

In essence, this behavioral approach to counseling posits that behavior is modified by the environment, or, more explicitly, behavior is learned. Krumboltz (1966), the leading exponent of the "behavioral counseling" approach, contends that it is far more useful to state goals in terms of overt behavior changes. Krumboltz and Schroeder (1965) found that specific differences in information-seeking behaviors occurring as a function of counseling techniques could be observed and measured. Thus, a framework is available by which one can test the effects of specific counseling procedures in terms of changes in behaviors external to the process of counseling. The evidence emphasizes the successful utilization of a technique which assists the vocational counselor in his function of helping his client to reach more reliable career decisions. This technique underscores the value of the client obtaining facts about the world of work and/or education.

This is, however, only a beginning. It seems imperative that vocational counselors need to find ways to

assist their clients in making decisions relative to their vocational development. It is suggested that one way to do so is to use behavioral counseling techniques. An objective of this study, then, is the further exploration of a specific behavioral counseling technique which might profitably be used to facilitate the learning of information-seeking behaviors by male, adolescent blacks. The next section deals with that technique, which employs social model learning theory principles.

Theories of Modeling and Imitation

Researchers in the past several years have initiated and stimulated a substantial amount of work dealing with the learning theory concepts of "imitation" and "modeling." Obviously, the roots of these concepts are anchored in both the near and distant history of mankind. Historically, it was Aristotle, according to LaPiere and Farnsworth (1936), who has the distinction of being the first to use the term "imitation" in some of his observations concerning human behavior. Bagehot (1873), Tarde (1903), and Ross (1912), however, are given credit for first giving prominence to the notion in their writings (Young, 1932).

As for the term "model," it was Bernard (1926) who used that term in his discussions of the concept of imitation. He used "model" to describe the fact that children

usually fixate to some degree upon one person at a time in the process of learning by human example. Both terms have developed a degree of synonymity in recent research, as have other phrases, such as observational learning, vicarious learning, indirect learning, identification and matched dependent behavior.

More recently, Miller and Dollard (1941) proposed their viewpoint of observational learning as instrumental conditioning. They say the observer learns matching responses as a result of either witnessing the reinforcement of the model or being reinforced himself for imitating. The failure of this notion, it seems, lies in its inability to account for observational learning which occurs in the absence of reinforcement. Such learning does occur, as will be noted presently in more recent research.

In what is called the "sensory feedback" theory of imitation, Mowrer (1960) suggests that the model's behavior develops positive value for the observer as a consequence of repeated associations of the specific behavior with rewards administered by the model to the observer. The idea is that one can later reproduce the previously positively rewarding experiences by matching the model's behavior.

Of recent and perhaps most stimulating and research-inspiring interest is the stimulus contiguity and mediational theory developed and being nurtured by Bandura (1965) and his associates. Bandura postulates that

sensory images aroused by the modeling stimuli are converted to structured, perceptual responses through contiguous association. In addition, the observer acquires verbal representations of the model's behavior, and they become associated with the perceptual images. Verbalization of the matching responses may facilitate the later reproduction of the model's behavior through response-produced cues which become discriminative stimuli for later overt reproductions of the model's behavior.

Research evidence has demonstrated the effectiveness of using social models who perform desired behaviors in enhancing certain types of learning (Bandura & Walters, 1963; Bandura, Ross & Ross, 1963; Krumboltz & Schroeder, 1965; Krumboltz & Thoresen, 1964, 1967, 1968). Bandura and his associates have shown in several studies that aggressive behavior can be promoted in young children through various modeling procedures. Krumboltz and his coworkers have found in numerous experiments that they can utilize models to produce increased information-seeking behaviors of high school students.

An important component which has received much attention in most modeling experiments is that of the role of reinforcement, of either the model or the observer, along the lines suggested by Miller and Dollard (1941). According to Bandura (1965), neither type of reinforcement is essential for such learning to occur. He found that

the consequences to the model did not affect acquisition of responses, although they did influence actual performance of those responses. Therefore, if one wishes to improve his chances of inducing a subject to actually perform a model's acts, it would seem desirable to expose him to a model who receives rewards for his behavior. Studies by Rosekrans and Hartup (1967), Resnick (1967), and Rosenbaum et al. (1962), lend support to this thesis, finding that the higher the probability of reinforcement, as perceived by the observer, the more likely are the acts of the model to be imitated (performed).

To summarize the studies which test the general concept, the evidence indicates that observation of a social model facilitates the learning of modeled responses. "Live," or physically-present models have been found to be not significantly more effective than symbolic models (using audio tapes, video tapes, filmed human models, filmed cartoons, slides, etc.), according to Bandura, Ross and Ross (1963), and Walters, Llewellyn-Thomas and Acker (1962). In fact, film-mediated models have been shown to be even more effective, in some studies.

Much of the relevant experimentation has been directed at identifying specific model characteristics which promote imitation. Some of the variables suggested include: model competence (Luchins, 1944; Rosenbaum & Tucker, 1962; Resnick, 1967), models of high prestige

(Maccoby, 1959; Krumboltz, Varenhorst & Thoresen, 1967), observer's perceived similarity to the model (Stotland & Patchen, 1961; Stotland, Zander & Natsoulas, 1961; Burnstein, Stotland & Zander, 1961; Rosekrans, 1967a; Thoresen & Krumboltz, 1968), and sex of the model (Bandura, Ross & Ross, 1961; Hartup, 1962; Hicks, 1965; May, 1966). The range of variables which have been investigated is indeed encompassing, as is evident in the recent comprehensive review of research of model learning by Bandura (1969).

In summary, a fundamental assumption of social model learning theory (at least for Bandura) is that behavior may be learned by simply exposing the observer to a model. Bandura and others have demonstrated that such learning does occur. Also, these and other researchers have proposed and demonstrated the effectiveness of reinforcement of the model's behavior. It is one of the purposes of this study to investigate the use of these "modeling theory" postulates to increase the information-seeking behaviors of subjects as yet not used in such experiments, i.e., male, adolescent blacks.

Promoting Information-Seeking Behaviors

Previous reference has been made to some of the highly-encouraging work of Krumboltz and Schroeder (1965) in regard to the development of specific information-seeking behaviors, the dependent variable in this study.

These authors developed their concepts of this specific, vocationally-oriented behavior from the proposal by Gelatt (1962) that one of the principal goals in guidance is to help students to learn how to arrive at reliable, sound decisions. A logical assumption concerning this prescribed rubric is that a good decision is more likely to result from gathering information which is relevant to that decision. The next step is to introduce this notion as a learning process which can profitably be applied to vocational decision-making. Using this line of reasoning, Krumboltz and his coworkers have employed the learning theories of imitation and modeling as useful paradigms in vocational counseling.

A brief summary of these experiments will suffice here. In the studies by Krumboltz and Schroeder (1965), Krumboltz and Thoresen (1964), Krumboltz, Varenhorst, and Thoresen (1967), Thoresen and Krumboltz (1968), and Thoresen, Krumboltz, and Varenhorst (1967), the criterion measures were: (1) the frequency of information-seeking behaviors outside the experimental setting, and (2) the variety of information-seeking behaviors outside the experimental setting. Each study used reinforcement procedures in the form of rewarding the model, reinforcing the experimental subject, or both conditions. In each study the criterion measures were taken either two or three weeks following the initial experimental counseling

session and were based on self-reports of the subjects. A random selection of the self-reports was investigated for validation purposes, in each case finding no serious invalidation of the self-reported behaviors. The model was presented either by video or audio tapes of a counseling session in which a student model was reporting his information-seeking behaviors to a counselor.

The results of these studies suggest these findings: (1) symbolic social modeling either in individual or group form and either in audio or video presentation is more effective than active and inactive control procedures, (2) vicarious reinforcement (through reinforcing the model) is an effective means of presenting reinforcement to the subject, and (3) model characteristics of sex and level of prestige and success are not always consistently effective in the modeling procedures for all students.

From the foregoing, it is reasonable to conclude that the technique of reinforcement of symbolically-presented models is quite successful in inducing the learning of specific model behaviors. Again, this notion will be tested for the first time with the subjects unique to this study, male, adolescent blacks.

Perceived Similarity

Previous research on imitative behavior (Stotland & Patchen, 1961; Stotland, Zander & Natsoulas, 1961;

Burnstein, Stotland & Zander, 1961) has demonstrated that the degree to which an observer perceives himself as similar to a model has a significant effect upon the acquisition of responses. Stotland and his associates have tested the hypothesis that initial perceived similarity can lead to perceiving or producing additional similarities. Various inventive procedures were developed and utilized to induce feelings of similarity to the model. In each of the experiments, the findings were that observers who perceived themselves as similar in background and personal characteristics to the model were more likely to imitate the model's acts than were those who saw themselves as dissimilar to the model.

More recently, Rosekrans (1967b), building upon the work noted above, suggested the hypothesis that perceived similarity to a social model's personal characteristics, background and reference group identity should also influence the extent to which children imitate instrumental behaviors. Rosekrans developed a "perceived similarities test" which showed a similarity induction procedure to be quite effective. The results again substantiated the notion that high perceived similarity to the model results in greater imitation than does low similarity. In addition, the significance of reference group identity as an important modeling variable was established.

Alternative conclusions have been applied to this phenomenon. Kagan (1967) contends that it is the

distinctiveness of a model which first causes an observer to attend to it and then to learn by imitation. This seems to suggest that similarity may be sufficient to gain the subject's attention, but some other variable is responsible for the learning that takes place thereafter. Thoresen and Krumboltz (1968) have suggested the possibility that model cues serve as "attention-getters," as has Bandura (1969).

At this time, however, there is much evidence that specific characteristics of social models do affect the behaviors of observers, in the direction of imitating the model. Thoresen and Krumboltz (1968) suggest that maximum model effectiveness might be achieved when the model and subject are quite similar on some characteristics, but quite different on others. This suggests that certain model characteristics might be effective with one population, but not with another. Further, certain combinations of cues might produce imitation in some clients, but not in others. An analysis follows of one such cue, one of the independent variables in this study, the effect of the race of the model upon imitative behavior.

Race of the Model

The genesis of this study emerged, in part, from the strained American social climate of the late 1960s. Racial violence, civil rights laws, job discrimination, open housing, burning, looting and other militant expressions of long-repressed feelings of oppression--these

all are terms descriptive of the temper of the time. A major role in this smoldering social conflict has been and is being played by the American Negro in his social, educational and vocational relationships with whites. That the role of the vocational counselor in the school, in employment centers and in youth opportunity programs is crucial to the outcome of this racial struggle should be apparent.

In a penetrating review of the modern counselor's role with his culturally deprived clients, Calia (1966) emphasizes the urgent need for attention to this problem:

> The Federal Government's recent "War on Poverty," as exemplified by the "1964 Economic Opportunities Act" and the appropriation of huge sums of money for its implementation, portends changes of great moment in the field of education. Guidance and counseling will not be unaffected, as evidenced by the government's ambitious plans for staffing its programs and services. School counselors will be required, increasingly, to assist in the improvement of conditions among disadvantaged children and their families. Counselors, inexperienced in the ways of the poor, are likely to be perplexed and ineffectual in their initial encounters with these strange and formidable clients (p. 100).

It is evident that counselors must meet these special problems with imaginative techniques and methods. The consensus of concerned social scientists (Tyler, 1964; Riessman, 1964) is that the counselor can no longer rely upon "talk" as the principal weapon in his arsenal, when confronted by a Negro youth who feels he has no respectable place in the world of work in this country.

Further, in a stinging indictment of counseling as traditionally practiced, Kvaraceus (1957) comments:

> Guidance and counseling theory currently favors middle-class mentality. For most Negro students, the counseling approach is much too passive, verbal, intuitive, symbolic and seldom accommodates to the realities of the Negroes' past, present or future. It may be necessary to engage in more aggressive counseling. Most student personnel workers . . . have slavishly followed counseling principles that accommodate more practicularly to middle-class homes and to middle-class intellectuality (p. 16).

One of the purposes of this study is to investigate the effectiveness of meeting this challenge by utilizing a combination of the concepts of modeling and perceived similarity. More specifically, this means the obvious similarity of race. Aside from the conspicuous indications provided by frequent acts of racial violence, there is experimental evidence that race is a potential source of influence on the outcomes of interpersonal interactions. Hyman (1954) conducted a study in which Negro and white interviewers each interviewed a random sample of Negroes on problems of discrimination. Negro interviewers obtained significantly more information than did whites. Pettigrew (1964), Shane (1960), and Silberman (1964) all have spoken about the possible retarding effects of the counselor's race in the areas of education, counseling and testing. In a recent study of this hypothesis, Banks, Berenson and Carkhuff (1967) found that all of the Negro counselees in their study said they would return to see the inexperienced Negro counselor employed in the experiment, while none

wanted to return to either of three white counselors of varying degrees of experience and training.

Several writers (Riessman, 1962; Harleston, 1967; Barnett, 1967; Smith, 1967) have suggested the need of Negro youth for suitable social models, most of them advocating that these roles be filled by Negroes. Barnett has proposed that Negro students who know of Negroes who did achieve success and status may be encouraged to move away from constricting poverty, unskilled jobs, inadequate salaries, unemployment, perpetual dependency and, thus, more poverty.

To sum up, it appears that a great need exists for discovering new techniques for the vocational development of culturally deprived individuals. The technique which has been suggested, and which is of concern in the present study, is the use of Negro models for Negro students, which is tested against the use of white models for Negroes.

One independent variable of interest remains to be discussed, that of the employment of either peers or adults as models for adolescents.

Peers Versus Adults as Models

The research literature dealing specifically with the difference between peers and adults as models for adolescents is meager indeed. A great deal of material based upon observational and descriptive accounts can be

found (and it will be relied upon), but little evidence is available by way of specific experimental analyses of this variable among adolescent subjects.

In our attempts to assist someone toward more satisfactory vocational development, it is important to remember the significance of other people who influence his perceptions and thinking. Johnson, Stefflre and Edelfelt (1961) suggest that a very significant part of a youngster's world is composed of his peers, and thereby his behavior may be largely a product of their thinking, rather than of advice-rendering adults with whom he has contact. Ausubel (1968) notes that, as an adolescent becomes increasingly resistant to adult authority, the approval or disapproval of his peers comes to be the most powerful influence upon his behavior. He synthesizes the findings that conforming tendencies are greater among lower-class adolescents (Tuma & Livson, 1960), and among members of groups with few stable ties outside their group (Sherif & Sherif, 1964), to form his conclusion that peer group influence is highest among individuals from lower socioeconomic backgrounds. This would, of course, include many Negro youngsters in some of the schools throughout this country.

Ausubel argues convincingly about the impact of peer groups, and one might extrapolate from the following viewpoint to the purposes of this study:

> . . . alienation from adult society, coupled with the accompanying resentment and prolonged frustrations of his needs for adult volitional independence and adult earned status, has two serious consequences, namely, the generation of aggressive anti-adult attitudes and the compensatory formation of distinctive peer groups with distinctive standards, status-giving activities, and training functions of their own. The aggressive anti-adult orientation not only promotes further retaliatory rejection of adult standards, but also makes it more difficult for adolescents to identify with adults, to obtain any attributed status from such identification, and currently, to accept adult values implicitly (p. 431).

The few experimental investigations of the influence of peer models as opposed to adult models have suggested that adult models are more, or at least equally, effective. Bandura and Kupers (1964) found that adults generally served as more powerful models than peers in transmitting self-reinforcing responses to children aged 7-9. Jakubczak and Walters (1959) found that 8-to-10-year-olds responded more strongly to suggestions from adults than peer models. Bandura, Ross and Ross (1961) successfully utilized an adult model to produce imitated aggression in nursery school children. In a similar vein, Hicks (1965) found that a male peer model elicited the most imitative aggression from both male and female subjects, but after six months, only exposure to the male adult seemed to have had any enduring effect. Again, the subjects were children.

Most of these studies, however, are confounded by other variables, making any clear-cut conclusion difficult. It is crucial to consider, as Rosekrans (1967b) points out,

that status varies with age in age-graded societies, and researchers have demonstrated that the status of the model facilitates imitation (Lefkowitz, Blake & Mouton, 1955). It is logical to suggest, then, that results which find adults to be superior to peers as models for children likely are manifestations of status effects, not similarity effects. This seems to have strong implications for the subjects in this study, who may differ markedly in their conceptualizations of status from the younger children used in the studies cited. This is especially significant when considering Ausubel's viewpoint that adolescents aggressively reject adult standards.

Most of the studies done to date with modeling procedures have not been directly concerned with this variable. Therefore, a further purpose of this study is to investigate the relative effectiveness of peer models versus adult models for male, adolescent blacks.

Research Hypotheses

The general hypothesis of this study is that subjects exposed to models perceived as similar in race and/or age will perform and acquire more information-seeking responses than will subjects exposed to models perceived as dissimilar, or subjects exposed to no model.

The specific research hypotheses follow. (Criterion measures are described later. "Student" below refers to the male, adolescent blacks used in the sample.)

1. Students exposed to black models will:
   (a) perform a greater frequency of information-seeking behaviors (ISB),
   (b) suggest more vocational planning strategies,
   (c) suggest more modeled vocational planning strategies, and
   (d) perceive themselves as more similar to the model

   than will students exposed to white models.
2. Students exposed to peer models will:
   (a) perform a greater frequency of information-seeking behaviors (ISB),
   (b) suggest more vocational planning strategies,
   (c) suggest more modeled vocational planning strategies, and
   (d) perceive themselves as more similar to the model

   than will students exposed to adult models.
3. Students exposed to any of four model-rewarded treatments will:
   (a) perform a greater frequency of information-seeking behaviors (ISB),
   (b) suggest more vocational planning strategies, and

(c) suggest more modeled vocational planning strategies,

than will control students not exposed to a model.

4. There will be no significant interaction effect between the race and the age-referent group of the model.

5. There will be differences in the treatment means on three of the criterion measures.

6. Students exposed to a black peer model will:

(a) perform a greater frequency of ISB,

(b) suggest more vocational planning strategies, and

(c) suggest more modeled vocational planning strategies

than will students exposed to a white peer model.

7. Students exposed to a black peer model will:

(a) perform a greater frequency of ISB,

(b) suggest more vocational planning strategies, and

(c) suggest more modeled vocational planning stragegies

than will students exposed to a black adult model.

8. Students exposed to a black peer model will:
   (a) perform a greater frequency of ISB,
   (b) suggest more vocational planning strategies, and
   (c) suggest more modeled vocational planning strategies
   than will students exposed to a white adult model.
9. Students exposed to a black peer model will:
   (a) perform a greater frequency of ISB,
   (b) suggest more vocational planning strategies, and
   (c) suggest more modeled vocational planning strategies
   than will students exposed to no model.

Definition of Terms

Vocational Planning Strategies (VPS): This term refers to the student's knowledge of methods of obtaining vocational and educational information. The criterion measure will test for acquisition of the modeled behaviors, as well as the total number of VPS known by each student.

Information-Seeking Behaviors (ISB): This term refers to the actual performance of methods of obtaining vocational and educational information. The criterion measure will test for total performances of ISB for the duration of the study.

Overview

In Chapter II, a relatively comprehensive review of the pertinent literature concerning modeling is presented. In Chapter III, methodology is discussed, including descriptions of the sample; treatment materials; modeled behaviors; administrative procedure; statistical hypotheses, design, and analysis. Chapter IV is devoted to the analysis of the results. In Chapter V, conclusions and future research suggested by this study will be discussed, concluding with a final summary of the study.

CHAPTER II

REVIEW OF RELEVANT LITERATURE CONCERNING THEORIES OF MODELING

Organization

Inasmuch as this study is constructed around a nucleus of theories, hypotheses and research on the subject of modeling, it seems imperative that a selective review of related literature be provided. This is the purpose of Chapter II.

The two major organizational divisions of this chapter proceed chronologically from historical to recent contributors to the psychology of learning via modeling. References are made to selected theorists who propounded notions which have stimulated research and scientific rumination leading to current interest in modeling as a means of manipulating human behavior.

Development of A Theory (I): Modeling in Retrospect

This section deals with several contributors through whom the early development of theories of imitation and modeling can be readily traced. In chronological perspective, they range from the earliest recorded

reference to imitative behavior through the mid-twentieth century.

Aristotle

To Aristotle we can attribute the first learned commentary on the belief in the concept of imitation. Although he may not have been the first to recognize and identify this phenomenon, he was the first to suggest the importance of imitation in man's development. Aristotle claimed man to be the most imitative of living creatures, and through imitation he learns his earliest lessons in life (Butcher, 1922). It seems certain that Aristotle saw imitative behavior making an early appearance in the development of the child, and that he considered some form of "copying" essential to human learning.

Tarde

Perhaps most widely known among early twentieth century social thinkers for his viewpoints on imitation was Gabriel Tarde. Tarde remains well-known as an exponent of the magnitude of imitation in the socialization of man. Indeed, he wrote that "society is imitation" (1903), and emphasized the nature of culture as a distinct variable in the development of human behavior. Tarde viewed imitation as being highly crucial in the task of transmitting culture from generation to generation, as well as from one society to another.

Ross and Wissler

Soon to follow came E. A. Ross (1912) and Clark Wissler (1923), both of whom offered theories which largely substantiated and supported Tarde's earlier proposals. Ross reiterated the view which emphasized the impact of imitation in the transmission of social patterns. Wissler professed the same belief. He suggested that, without the function of imitation, men would likely be left without a culture. In fact, he said that a culture "must be perpetuated by the imitation of the older by the younger members of the group."

While Ross, Wissler, Tarde and perhaps Aristotle might have seen imitative tendencies to be essentially of an "innate" order, several other theorists have stressed imitation as a "learned" behavior. Further, they have noted that such learning is the result of a system of rewards and punishments, which in some manner affect behavior.

Thorndike

Among this group, E. L. Thorndike (1940) has done much to foster the notion of associating imitative behavior with the learning process. He conducted many experiments with animal subjects, the results leading to his conclusion that imitative habits are not learned automatically and simply through mere observation of an act being performed by another being. Thorndike instead suggested that

societal conditions, especially those in the family and social structure, are crucial to the learning of imitative behavior. This is achieved, he says, through tendencies toward behavior which is approved and away from responses which are ridiculed. Thus, we can see in Thorndike's theory the idea of a learning process based on societal rewards and punishments.

Jersild

Another proponent of the theory that individuals learn by imitation is A. T. Jersild, who didn't believe that imitation is instinctive in nature. As Miller and Dollard choose to point out, Jersild is quite correct in his feeling that imitative responses may be fixed by such secondary rewards as parental praise (1941). Jersild (1933) made this point in reference to the situation in which a child receives positive reinforcement in response to his return of a smile, reproducing a sound, or speaking a word, similar to such expressions made by his parents.

Dewey

Considering his viewpoints in perhaps the broadest sense, John Dewey (1930) might also be considered a member of this group which denies instinct as the precursor of imitative acts. Basically, Dewey's comments seem to emphasize the importance of the social context of imitative behavior. He outlines his belief by suggesting that

similarities among humans in thinking and acting result primarily from the sameness of the conditions in which they are reared. Dewey makes no direct connection, however, between imitative acts and a mechanism of rewards and punishments.

Bernard

Other vanguard theorists must include L. L. Bernard. Bernard (1926) provided significant progress by introducing his concepts of the role of the "model," from whom the copier takes cues. In his relatively complete (and certainly appealing) theory, Bernard takes note of concepts which sound remarkably like those espoused by Miller and Dollard, to whom more complete reference will be made later. For instance, Bernard's "suggestion imitation" has the ring of the mechanism Miller and Dollard describe as "matched-dependent behavior." Also, his "purposive imitation" is similar to their "copying." He indicates a strong belief in the crucial part played by the social setting in the emergence of imitative behavior. In order for his theory to be more complete, Bernard could have gone a step further and recognized reinforcement principles and their role in this type of learning. Failing to do so, however, does not detract seriously from the meaningful contributions he has made to modern conceptualizations of the imitative process.

LaPiere and Farnsworth

Ten years after Bernard adapted the term "model" to the study of imitative behavior, LaPiere and Farnsworth (1936) concurred with the idea and even went so far as to suggest dropping the term "imitation." In its place, they would substitute "learning by human example." Such learning (modeling), they contend, is advantageous because it limits the range of trial and error acts and thereby increases the possibility of a successful response. Particularly important to LaPiere and Farnsworth is that the "copier" must bring something with him to the copying situation, if he is to successfully emulate the model. That something they describe as "previously acquired habits of action." By this they mean the observer must already have the elements of behavior in his repertoire before he can put them together in a synthesis of the model's behavior. They would contend, then, that until one has learned each individual bit of behavior which is involved in the model's performance, it is a waste of time to try to imitate him. Of course, training can be of utmost importance.

LaPiere and Farnsworth were quick, too, to note that adults attempt to pattern their behavior upon that of other people. They point to the example of the "fireside talks" of President Franklin Roosevelt, whose easy, familiar delivery was soon attempted by a host of radio

announcers around the country. Similarly, when Hitler rose to power in Germany, aspiring politicians the world over began to imitate his charismatic gestures, his aggressive, authoritative voice and his clipped, abrupt incantations.

These authors make some indirect reference to reinforcement principles, too, although a diligent search is necessary. In this regard, they suggest that the selection of models is determined in part by short-term results, i.e., getting attention, a piece of candy, a new dress, etc. In another context, they speak of a mother expressing approval or a father administering punishment and interpret these acts in terms of encouraging or discouraging certain behaviors of a child. Unfortunately, they fail to bring these views together in what might be recognized as a valid theory of reward and punishment, as related to the process of imitation. Their theory stands, however, as a firm foundation for much of the progress in modern research in the past few years regarding imitation and modeling.

Miller and Dollard

As have many other investigators, Neal Miller and John Dollard have applied their own unique conceptualizations to the theory of imitation. In their detailed discussion of the principles of imitation, they describe this phenomenon as a process by which "matched," or similar acts are evoked in two people and connected to appropriate

cues (1941). In order for this to occur, conditions must be favorable to the learning of such responses.

An extremely important prerequisite to one person's matching of another's behavior is that the "matcher" must be regularly rewarded for doing so. Further, if such rewarding transpires, a secondary tendency to match may be developed, whereby the imitation process becomes, in turn, the derived drive of imitativeness. To Miller and Dollard, the concept of reward is as essential to the learning process as oxygen is necessary for human life. Indeed, they say quite explicitly, "without reward, people fail to learn."

Miller and Dollard have described three factors which bear upon imitative behavior: "same," "matched-dependent," and "copying" behavior. "Same" behavior is relatively simplistic. It is merely the chance occurrence of two people performing the same act in response to independent stimulation by the same cue. Each person learns by himself to make the response, for his own anticipated rewards and drive satisfaction.

"Matched-dependent" behavior tends to occur when one person (the model) is either older, more intelligent, more skilled, etc., than the other (the imitator). The important factor here is that one person is unable to respond to a specific cue in the process of drive reduction, which he achieves instead by taking another cue

from a model and imitating the model's response. Thus, the follower is dependent upon the model to read and interpret cues which he himself is unable to discriminate. Miller and Dollard claim that our society is so organized that such situations are regular occurrences. Many of us are dependent upon the older, the brighter, the scientist, the space technician. Thus, certain types of imitative behavior are certainly not exclusive to childhood.

In the case of "copying," one person learns to model his behavior on that of another. This, of course, sounds very similar to the behavior just discussed. The fundamental difference between the two processes is that in matched-dependent behavior, the imitator responds only to the cue from the leaders, while in copying, he responds also to the cues of sameness and difference produced by stimulation from his own and the model's responses. Also, it appears essential that the imitator know when his response is within an acceptable range of similarity to the response being matched. Thus, he must have some criteria for discrimination. This may begin with another person who rewards and punishes according to similarity. However, the imitator must eventually come to respond independently to the cues of sameness and difference. The model, in this case, acts as a critic until independent discrimination is achieved.

One of the outcomes of concentrated training in copying, in which we are directed to compare ourselves with

others, is that we tend to look at and scrutinize the behavior and personalities of others, thereby noticing individual differences. In this manner, much of our culture is transmitted and diffused. It is certainly obvious that our society rewards conformity and punishes those who deviate too far from the behavioral standards of the majority.

Miller and Dollard perceive imitation as being critical to many of the processes of socialization. They mention especially its importance in maintaining social conformity and discipline, noting that individuals require training in many instances, so that they will find it satisfying to do what others are doing and they will be distressed when they are not. Such desired conformity to societal patterns is achieved, in part, say the writers, by techniques of imitation learned by individuals early in life. They use this notion as a springboard from which to project their views of the conditions which facilitate imitative behavior.

In what may be a rather simplistic view of the various social conditions which foster imitation, Miller and Dollard see these conditions in terms of an hierarchy based upon specialized skills and social statuses. They speak of four classes of persons who are imitated by others: (1) superiors in an age-grade hierarchy, (2) superiors in a hierarchy of social status, (3) superiors in an intelligence ranking system, and (4) superior

technicians in any field. They do attend to another dimension of the question, that of sex differences, but they do not consider it as one of the principal tenets of their reasonably comprehensive "hierarchies," as outlined above. Certainly it would be difficult to argue with their concept of imitation of superior persons in the categories mentioned. However, as a result of research conducted during the past few years, a number of other variables pertinent to the imitative process have been identified. Therefore, it seems logical at this point to make a transition in time to review the results of these recent experiments, to distinguish the current perspective of the problem.

Development of A Theory (II): A Current Perspective of Modeling

A review of more timely research concerned with imitative behavior quickly reveals the dynamic, thought-provoking status of the subject. The outcome of this stimulating condition has been the elicitation of several variables which appear to have some bearing upon imitation in human behavior. For instance, only a partial list would include factors such as: (1) sex of the model, (2) sex of the subject, (3) reality cues of the model, (4) the subject's perceived similarity to the model, (5) the relative competence of the model, (6) the fact of reinforcement of the model, (7) the probability of

reinforcement of the subject, (8) prior failure of the subject, (9) prior successes of the subject, (10) the characteristics of the task to be performed, and (11) live versus symbolic models.

Many of the variables suggested above have received valid experimental treatment. Many need to be validated, in terms of reliability, through replication. Others, of course, are yet to be specifically identified. A review of several studies will provide a bit of the flavor of work being done, with an eye toward categorizing them for simplified interpretation of the results.

Modeling and Aggression

Research concerning modeling has been conducted predominantly with children and some young adults, with many experiments being done with nursery and pre-school children. The topics are as far-ranging as the list of variables presented above, with many variations in treatments, subjects and conditions. Suggestive of some of the more stimulating studies are those dealing with aggression, and the modeling of aggressive responses in children. Walters (1966) has observed that child and social psychologists have been much concerned with the problems of social control and violence in the last few years. Others have frequently observed that aggressive parents are more likely to have aggressive children. Also, we now know that a youngster's peers often serve as social

models, often leading them to adopt standards of violent, aggressive behavior. In addition, the almost universal availability of television and motion pictures permits an even broader-ranging opportunity for exposure to models for persons of all ages.

Several studies by Bandura and his associates give us the most comprehensive view of laboratory studies in this area. These experiments primarily deal with the exposure of children to live or film-mediated models. In one of these, Bandura and Huston (1961) had nursery school children participate in a "game" involving three conditions: a model exhibiting functionless responses incidental to the game; a model whose incidental responses included aggression against dolls; and an entirely non-aggressive model. The results showed 90 per cent of the "aggression-exposed" children displayed aggressive acts in performing the "game." Not a single control group child showed any aggression.

Next, Bandura, Ross and Ross (1961) attacked the question of whether the model needs to be present in order for the expected responses to occur. Two groups of nursery school children were exposed to an adult model. One group watched the model physically and verbally attack a large inflatable doll; the second group saw only nonaggressive behavior with a tinker-toy set. After exposure, steps were taken to induce frustration, then the children were

placed in a room which contained several toys. A few of these could be utilized for acts of a violent nature. Control subjects were placed in the same situation, without prior exposure to a model. Again, aggression-exposed children exhibited substantially more imitated aggression than those in either of the other conditions.

These same experimenters (1963) compared the influence of a live aggressive model with that generated by a model showing aggression in a film. They also introduced the variable of a human versus a cartoon model, using a procedure similar to that described in the previous study. Again, all children exposed to aggressive models demonstrated more post-exposure aggression than did controls. It was also discovered that exposure to human models showing aggression in movies was the most effective means of eliciting and shaping aggressive response patterns.

Similar results have been reported in studies by Lovaas (1961) and by Mussen and Rutherford (1961). Lovaas found that day-care center children, after seeing an aggressive cartoon film, selected a response which involved a doll striking at something rather than one of manipulating a ball-in-a-cage apparatus. Mussen and Rutherford also employed cartoon films and then found increased tendencies toward aggression, which was measured by questioning the children about their desire to break a balloon held before them.

Effects of Consequences to the Model

Naturally, the types of studies described involved situations in which aggressive behavior was not only permitted, but even induced, and also notable is the fact that testing occurred almost immediately after exposure. In addition, we find that in real life and in commercial movies including aggressive acts, there is usually some system of rewards and punishments in operation, i.e., the aggressor is often punished. Therefore, it is very interesting to examine studies which observe the consequences of aggression, as they are assessed to the model following his actions.

Bandura, Ross and Ross (1963) used four conditions to study this phenomenon. These included aggressive model rewarded, aggressive model punished, no exposure to a model and model expressive, but not aggressive. Children in groups one and two viewed a film of an adult exercising a substantial amount of physical and verbal aggression to obtain objects possessed by another male adult. In the model-rewarded condition, the aggressor succeeded and was subsequently shown enjoying his success. In the model-punished condition, aggression met with obvious punishment at the hands of the intended victim. In the testing situation which followed, children who saw the rewarded aggressive model displayed more aggression imitating the model, both physically and verbally, than children who

were in the model-punished or control groups. It appeared that generalized aggression, not exactly imitative of the model, was more predominant under the model-rewarded condition than for the children in the other groups.

Performance versus Acquisition

Another significant outcome produced by Bandura's research (1965) is that failure to reproduce a punished model's behavior in a subsequent test situation doesn't necessarily mean that learning via observation has not occurred. The subjects in this experiment were also nursery-school children, assigned to one of three conditions: model rewarded, model punished, model neither rewarded nor punished. Following exposure, the children were observed for 10 minutes while they engaged in unstructured play. In this time interval, children exposed to a rewarded model and to the control condition showed many more imitative responses than those who saw the model being punished. However, the next step was to provide all the children with an incentive to imitate the model's acts, and this completely eliminated any differences between the three groups. Those who had seen the model punished and had subsequently not imitated now displayed as much imitative behavior as the other two groups. This demonstrates that, while imitative "performance" of model behavior may not follow exposure, learning or "acquisition" through observation may still be taking place.

Similar evidence has been obtained by Walters and his coworkers (1963, 1964, 1966) in analyses of deviation. In brief, they found that, when a prohibition against a certain behavior is removed, children who previously saw a model punished for violating the prohibition and then wouldn't imitate, subsequently could reproduce the model's deviant act nearly as exactly as children who had seen the model rewarded or escape with no consequences. In another recent study, Phillips (1968) confirmed Bandura's original finding that nonreinforced imitation does indeed occur, and that mere observation of a model who is not reinforced may be sufficient to induce imitative learning.

It is obvious that laboratory studies have graphically depicted how the presentation of aggressive models may lead to the acquisition and performance of imitative responses. These findings are illustrative of those obtained by other researchers on widely-ranging topics pertinent to theories or hypotheses of imitation and modeling. For additional insights into other research, the next section presents brief examinations of significant outcomes reported by other authors.

Competency of the Model

Several studies considered collectively warrant the conclusion that factors that lead the subject to believe that he is incompetent, or that the model is more competent than he, are associated with increased susceptibility to

social influence. Resnick (1967), Rosenbaum et al. (1962), Maley (1967) and Rosenbaum and Tucker (1962) all found evidence that competent models generally provide more effective stimuli for matching behavior than do incompetent models. In the Rosenbaum and Tucker study, the effect of information concerning the competence of a model on learning of imitative and nonimitative behavior was examined in two experiments. The subjects predicted the outcomes of a series of fictitious horse races after exposure on each trial to the prediction and correctness of the prediction made by a simulated partner (a confederate of the experimenter). In each experiment, the results for training to imitate indicated that, the greater the model's competence, the greater is the facilitation of acquisition of the imitative response.

Similarly, Luchins (1944) had previously shown that only a few subjects will agree blindly with a model's incorrect choice, but they rather agree on a "rational" basis. Of course, Asch (1967) demonstrated in the 1950s the effects of group pressure in similar experiments, wherein the subject is confronted with the obviously incorrect choices of everyone else in the group, all confederates of the experimenter, prior to making his own response. Of the 123 subjects put to the test, under group pressure the minority subjects changed their decisions to conform to the misleading majority's wrong judgments in nearly 40 per cent of the cases.

Probability of Reinforcement

Another variable dealt with by several researchers is that of probability of reinforcement of the subject for imitated responses. Rosekrans and Hartup (1967), Resnick (1967), Rosenbaum et al. (1962), and O'Connell (1963) have reported results indicating that a subject who anticipates relatively low probabilities of being rewarded for imitating will be less likely to reproduce the model's behavior. Rosekrans and Hartup found that subjects exposed to an inconsistently rewarded model produced less imitative aggression than subjects exposed to a consistently rewarded model. The former subjects did imitate more, however, than did those exposed to a consistently punished model. O'Connel had similar results, with the number of imitative responses very significantly higher in the high reinforcement than in the low reinforcement condition.

Cues in the Learning Situation

There is some evidence that cues other than those provided by the model himself may be of significance in learning by imitation. Wilson (1958) examined the learning of incidental cues by preschool children. He hypothesized that the process of learning to perform an imitated response in an appropriate situation, in the absence of the model, is essentially that of learning secondary cues. Preschool children, utilizing a model's

response as a primary cue for the performance of the identical response, did learn a secondary or "incidental" cue for the performance of that response. This was achieved without the use of specific instructions about what was to be done.

McDavid (1964) took another approach to the same notion, emphasizing the importance of pointing out cues in the learning situation to the learner. He construes his results as evidence that direction of the imitator's attention to cues in the physical environment is an important aspect of imitation and observational learning. Further, he contends that the element of ambiguity in associating social and nonsocial cues is also highly critical to learning. Since this kind of fragmentary association between behavior and pertinent environmental cues is probably typical of imitation in the normal course of child-rearing and social influence, McDavid's theory may have significant bearing upon the process of observational learning at all age levels.

Previous Experiences of the Subject

Numerous studies provide substantial evidence that factors which the individual brings with him to the modeling situation are very important. Kanareff and Lanzetta (1960), Rosenbaum et al. (1962), and Walters and Amoroso (1967) all report upon the influence of prior experiences. For instance, Kanareff and Lanzetta studied

the effects of success and failure experiences upon the extinction of an imitative response. They demonstrated that the experience of failure, as opposed to success, in a task performed previous to the modeling condition, leads to facilitation of the acquisition of a matching response in a criterion task. Walters and Amoroso also found that prior failure leads to greater susceptibility to the model's influence. Rosenbaum and his coworkers confirm this thesis, too, but have added another dimension. They found that there may be an interaction between prior failure and the probability of reinforcement for imitating. Their results show that low probability of reward, coupled with a previous failing, instead tends to facilitate non-imitation. It would appear, then, that the increased anxiety resulting from failure is not sufficient to instigate imitative performance. It is possible, however, that acquisition may be taking place but the performance of the response is being repressed, as suggested previously by Bandura (1965). With the introduction of an incentive to perform, it is likely that we should find that the response indeed has been acquired.

Generalizability of Imitated Responses

It seems appropriate to conclude this selective review of the literature concerning imitation and modeling by noting that some researchers have suggested that

imitative responses are not limited to specific situations in which they have been learned.

For example, Hartup (1964) analyzed the patterns of imitative behavior in young girls and boys. His results confirmed the hypothesis that the frequency with which the child chooses to imitate is generalized across models. The data indicate that children's responses to situations containing the potential for imitation are not entirely situation specific. Baer and Sherman (1964) found they could elicit an imitative response, without reinforcement, which was completely different from three other responses strengthened directly. They attributed this outcome to generalization along a dimension of similarity between the child's responses and the model's responses. That is, the child may be responsive to the stimulus of similarity between responses per se.

Additional support for the hypothesis of generalizability of imitation may be found in the work of Maley (1967), who studied the effects of accuracy of a model upon college males. He showed that the influence of the success or failure of the model on a subject is generalizable to new situations. Finally, Bandura, Grusec and Menlove (1967) demonstrated that children previously fearful of dogs, after watching a model interact nonanxiously with a dog, displayed stable and generalized reduction in avoidance behavior in other similar situations.

Conclusion

This concludes the selective review, analysis and discussion of the literature which relates to the theories of learning by imitation, or modeling. An effort has been made to present a panoramic perspective of the topic, bringing into focus its early foundations and developmental stages, as well as the current research. By way of intention, some of the material covered does not relate specifically to the research at hand; this for the simple reason that it is important to understand what is now being done in terms of the scope of what has already been achieved. This technique is intended to lend relevance and viability to the present study, as well as to augment this attempt to further contribute to a rapidly growing body of knowledge.

With this conclusion, then, attention next will be given to the problems of methodology and procedure, in Chapter III.

CHAPTER III

DESIGN OF THE STUDY

Sample

The sample consisted of 105 male blacks in the eleventh grade at Pontiac Central High School in Pontiac, Michigan. These subjects consisted of the total population of male blacks in the school's eleventh grade, excluding those who were absent and those with unusual class assignments. Pontiac Central is a large, urban high school with approximately equal numbers of blacks and whites in the student body. In the eleventh grade, approximately 40 per cent of the young men are blacks.

In the interests of increasing the precision of the experimental design, an attempt was made to form randomized blocks, using grade-point average (GPA) as a blocking variable. When this effort was unsuccessful, due to a procedural error, the experimenter decided to utilize GPA as a covariate and analyze the partially blocked data in a multivariate analysis of covariance design (see Appendix A). GPA means and ranges for each treatment are reported in Table 3.1.

TABLE 3.1.--Means and Ranges of GPA, for Treatment Groups.

Treatment Group	Mean	Range
1 (N=21)	1.93	0.87 - 3.29
2 (N=21)	1.80	1.00 - 3.29
3 (N=21)	1.92	0.75 - 3.86
4 (N=21)	1.94	0.62 - 3.43
5 (N=21)	1.92	0.43 - 3.71
Total (N=105)	1.90	0.43 - 3.86

Subjects thus were randomly assigned to five treatment groups: black peer model, white peer model, black adult model, white adult model and active control (see Appendix A for procedure). The assignment of subjects in the experimental design is presented in Table 3.2.

TABLE 3.2.--Cell Frequencies, by Treatment Groups.

Treatments				
1	2	3	4	5
Black Peer Model	White Peer Model	Black Adult Model	White Adult Model	Control
21	21	21	21	21

Treatments

Treatments 1-4 presented the modeling procedure to subjects assigned to those treatments. The fifth group was an active control section, in which the subjects were exposed to no models.

Treatment 1

Subjects in this group were exposed to a black peer model performing specific information-seeking behaviors, accompanied by a written narrative explaining in detail the model's activities.

Treatment 2

Identical to Treatment 1, but presenting a white peer model.

Treatment 3

Identical to Treatment 1, but presenting a black adult model.

Treatment 4

Identical to Treatment 1, but presenting a white adult model.

Treatment 5

Subjects in this active control group were exposed to no model in their treatment booklets, but they were not aware that their materials were different, as control group subjects received materials which were superficially

identical to those received by others. Control subjects, however, merely read some prepared general occupational information during the treatment session.

Treatment Materials

Booklets (See Appendices B, C, D, E, F)

Five booklets were designed, each uniquely representative of one of the five treatments. Each booklet (except for control subjects) incorporated line drawings prepared by a commercial art student and a written narrative describing the model's behaviors. Thus, symbolic models were presented performing five specific information-seeking behaviors. Peer models were shown in a high school setting, and adult models were shown performing identical behaviors in a community college setting. The two situations were described in a manner which made them as congruent as possible.

The narrative also presented vicarious reinforcement procedures, by telling the subject how the model was rewarded for performing each of the specific behaviors. For example, the model was shown checking out a book containing occupational information from the school library. A descriptive excerpt followed, pointing out how the information had enabled the model to make better vocational planning decisions.

Therefore, all booklets for the experimental treatment groups (1-4) were essentially identical except for the age and/or race of the model who was pictured and described.

Control subjects' booklets contained only general written material concerning occupational information. This material was abstracted from various sections of the Occupational Outlook Handbook.

In an effort to control for sources of variance other than the treatment effects, all booklets had identical covers, so all subjects appeared to receive the same kind of booklet.

Materials Packet

Each student received the following materials in a prepared packet.

1. A post card, which could be used to obtain a list of sources of vocational and educational information (Appendix G).
2. A form which could be used to request an appointment with a counselor (Appendix H).
3. A list of books on reserve in the school library, dealing with vocational planning (Appendix I).
4. Information about the availability in the Counseling Office of a pamphlet on government training programs (Appendix J).

5. A form which could be used to express an interest in the possibility of taking an aptitude test (Appendix K).

Modeled Behaviors

The following specific behaviors were performed by the models, and thoroughly explained in the narrative.

1. Signing a form requesting an appointment with a counselor.
2. Checking out a book about vocational planning, from several on reserve in the library.
3. Mailing a post card for a list of sources of vocational and educational information.
4. Signing for a personal copy of a pamphlet on government training programs, at the Counseling Office.
5. Signing and depositing at the Counseling Office a form stating the student's interest in the possibility of taking an aptitude test.

Treatment Administration

Administration of the treatments was conducted in the following manner.

1. Arrangements were made to utilize the entire eleventh-grade boys' gym class, including blacks and whites. This reduced potentially confounding effects, e.g., Hawthorne effect, reactive arrangements, which might result from

using only the blacks, or only a sample of the blacks in the class. All treatments were administered in one day, by taking over all eleventh-grade boys' gym classes for one day.

2. Each student received a booklet corresponding to the treatment to which he was assigned (Appendix A). White students received only control booklets. Fifteen minutes were allotted to the assignment and distribution process.
3. Students were instructed to follow directions on the second page. Approximately 20 minutes were allowed for exposure to the booklets. All subjects had a minimum of 20 minutes to read the booklets. Subjects were monitored by teachers during this period, to avoid interaction by the subjects.
4. After the exposure period was terminated, each student received a packet containing materials which would be helpful in implementing information-seeking behaviors.
5. After an interval of twelve days had elapsed, each student in treatment groups 1-4 completed two exercises (Vocational Planning Strategies--VPS, and a Perceived Similarities Test--PST). Control subjects received the same VPS

exercise, but necessarily were given an exercise other than the PST, which would have been meaningless to them.

6. Similarly, after the twelve-day period, the measures of the frequency of performances of the modeled information-seeking behaviors were collected.

Criterion Measures

Frequency of Information-Seeking Behaviors (FISB)

FISB is a measure of the total number of modeled information-seeking behaviors performed by each subject during the twelve-day experimental period following administration of the treatments. It was obtained through a tally of those responses. These raw data are reported in Appendix N.

Vocational Planning Strategies-Modeled (VPSM)

VPSM is an open-ended, hypothetical situation type of paper-and-pencil test of the subjects' knowledge of the modeled methods of obtaining vocational and educational information. Subjects exposed to models should be able to demonstrate "acquisition" of the modeled behaviors here (Appendices L and N).

Vocational Planning Strategies-Total (VPST)

VPST is a tally of all vocational planning strategies suggested by the subjects on the paper-and-pencil measure (Appendices L and N).

Perceived Similarities Test (PST)

PST is a 5-point scale, including 10 items which test each subject's (not control subjects) feeling of similarity to the model he observed. Thus, each subject rates himself and the model on the 10 items. Example of item: To Play Basketball. Scale points range from "Like very much" to "Don't like at all" (Appendix M).

Statistical Hypotheses

(In all hypotheses, "M" will be used to specify the population means.)

Null hypothesis 1.--There is no difference between the means of subjects exposed to black models and subjects exposed to white models on measures of vocational planning strategies and information-seeking behaviors.

$$Ho1: \quad M1 + M3 - (M2 + M4) = 0$$

Null hypothesis 2.--There is no difference between the means of subjects exposed to peer models and subjects exposed to adult models on measures of vocational planning strategies and information-seeking behaviors.

$$Ho2: \quad M1 + M2 - (M3 + M4) = 0$$

Null hypothesis 3.--There is no difference between the means of subjects exposed to a model and control subjects on measures of vocational planning strategies and information-seeking behaviors.

$$Ho3: \quad M1 + M2 + M3 + M4 - (4)M5 = 0$$

Null hypothesis 4.--There is no interaction effect between race and age of the model.

$$Ho4: \quad (M1 - M3) - (M2 - M4) = 0$$

Null hypothesis 5.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to a white peer model on measures of vocational planning strategies and information-seeking behaviors.

$$Ho5: \quad M1 = M2$$

Null hypothesis 6.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to a black adult model on measures of vocational planning strategies and information-seeking behaviors.

$$Ho6: \quad M1 = M3$$

Null hypothesis 7.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to a white adult model on measures of vocational planning strategies and information-seeking behaviors.

$$Ho7: \quad M1 = M4$$

Null hypothesis 8.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to no model on measures of vocational planning strategies and information-seeking behaviors.

$$Ho8: \quad M1 = M5$$

Null hypothesis 9.--There is no difference between the means of the five treatment groups on measures of vocational planning strategies and information-seeking behaviors.

$$Ho9: \quad M1 = M2 = M3 = M4 = M5$$

The following hypotheses apply specifically to the Perceived Similarities Test dependent variable, and they will be analyzed separately in a repeated measures ANOVA design (Table 3.3).

Null hypothesis 10.--There is no "treatment group-by-perception" interaction.

TABLE 3.3.--Repeated Measures Design, with Four Factors, for Analysis of Perceived Similarities Test Data

Treatment Groups		Items									
		1	2	3	4	5	6	7	8	9	10
		S*-M**	S-M	S-M	S-M	S-M	S-M	S-M	S-M	S-M	S-M
	Subjects										
1	1 . . 21										
2	22 . . 42										
3	43 . . 63										
4	64 . . 84										

*"S" refers to subject's self-rating on the item.
**"M" refers to subject's rating of the model on the item.

Null hypothesis 11.--There is no difference in perception of self and model.

Null hypothesis 12.--There is no difference across treatments in combined perception scores obtained on the perceived similarities measure.

Statistical Analysis

The analysis to be used for hypotheses 1-9 is a multivariate analysis of covariance. There were five levels of the independent variable of treatments, as previously described in this chapter under "Sample," and grade-point average was used as a covariate. The dependent variables were Vocational Planning Strategies-Modeled (VPSM), Vocational Planning Strategies-Total (VPST), and Frequency of Information-Seeking Behaviors (FISB).

The experimenter notes that hypotheses are to be tested as multiple comparisons, holding constant the experiment-wise error rate (.12), and recognizing that the last four comparisons are not orthogonal. The experimenter contends that the orthogonality requirement usually applied to planned comparisons serves no useful purpose. Davis (1969) has suggested that there is no reason to treat planned comparisons differently than post hoc comparisons. Both are defined in the same way, and test procedures are identical. The same problems of interpretation apply to each. Thus, orthogonality should apply equally to both planned and post hoc comparisons. Researchers have been

willing to test dependent comparisons under post hoc methods, so they should as well be willing to do the same with planned comparisons.

Hypotheses 10-12 will be analyzed by using a two-way analysis of variance (ANOVA) of the Perceived Similarities Test data in a four-factor, repeated measures design. This design (Table 3.3) allows the experimenter to test for main effects and interactions which are of interest.

The 3600 computer was used to analyze the data.

Summary

The purpose of this study was to investigate the information-seeking behaviors of a sample of male, adolescent blacks. The sample consisted of 105 eleventh graders in an urban high school. Subjects were randomly assigned to five groups: black peer model, white peer model, black adult model, white adult model, and an active control group.

Five booklets were developed by the experimenter to transmit the treatment effects. The first four presented pictures and a narrative of the different models performing five information-seeking behaviors, and the fifth booklet presented general occupational information with no model. Subjects all received the booklet treatments on the same day, and all received a packet of materials related to the modeled behaviors.

After a twelve-day interval had elapsed, a measure of vocational planning strategies was obtained for all subjects, and a measure of perceived similarities to the models was obtained for subjects exposed to models. Also, performance measures of information-seeking behaviors were collected at that time.

The data analyses were accomplished by using multivariate analysis of covariance for hypotheses 1-9, and analysis of variance for hypotheses 10-12, employing the 3600 computer to test twelve different hypotheses.

The results of the study are reported in Chapter IV.

CHAPTER IV

ANALYSIS OF THE RESULTS

In this chapter, the hypotheses will be restated and discussed in terms of their statistical outcomes. Hypotheses 1-4 were tested at the .02 level of significance and hypotheses 5-8 at the .01 level, with an overall experiment-wise error rate of .12 for these analyses. Hypothesis 9 was tested at the experiment-wise error rate of .12.

Hypotheses 10-12, concerned with the perceived similarities data, were analyzed separately, using a four-factor, repeated measures analysis of variance design, and were tested at the .01 level of significance.

Differences Between Experimental Treatment and Control Groups

Null hypothesis 3.--There is no difference between the means of subjects exposed to a model and control subjects, on measures of vocational planning strategies and information-seeking behaviors.

$$Ho: \quad M1 + M2 + M3 + M4 - (4)M5 = 0$$

The F-ratio for the multivariate test of equality of mean vectors, as reported in Table 4.1, is significant at $p < .001$. Inspection of the table of means indicates that the modeling procedure produced significantly more responses than did control procedures on the measures of vocational planning strategies and information-seeking behaviors.

TABLE 4.1.--Multivariate F-Ratio for Differences Due to the Effects of Exposure to A Model.

D.F. = 3 and 87 F-Ratio = 5.7324

$p < .001$

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	18.1727	8.0264	0.0058
Modeled Strategies	13.3192	14.9162	0.0003
InfoSeeking Behaviors	2.0965	4.3683	0.0395

D.F. for Hypothesis = 1 D.F. for Error = 89

Means for Hypothesis 3

These means and all tabled means related to hypotheses 1-9 which follow are actual means, rather than adjusted means. This procedure was followed as a result of finding a relatively minimal relationship between the covariate and the scores on the dependent variables. Thus, the actual means are as meaningful as the adjusted means for this data (see Appendix O).

The means for this hypothesis are presented in Table 4.2. These means represent the average of the combined responses of subjects in treatment groups 1, 2, 3, and 4, compared to the responses of subjects in treatment 5 (control), on the criterion measures: (1) Total Strategies--the total number of ways of finding vocational-educational information suggested by subjects in each treatment group, (2) Modeled Strategies--the number of ways suggested which correspond to the behaviors performed by the models in finding vocational-educational information, and (3) InfoSeeking Behaviors--the total number of actual performances by subjects of the five modeled behaviors.

TABLE 4.2.--Means for Hypothesis 3.

Variable	(T1+T2+T3+T4)/4	T5 (Control)
Total Strategies	2.6309	1.6190
Modeled Strategies	1.4048	0.5238
InfoSeeking Behaviors	0.4048	0.0476

As shown in the table, the means of the treatment groups exposed to models were higher than the control group means, on all three of the dependent variables. Thus, the modeling treatment proved to more effective than the active control procedure for eliciting imitative responses.

Differences in Black Peer Model and Control Groups

Null hypothesis 8.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to no model, on measures of vocational planning strategies and information-seeking behaviors.

Ho: M1 = M5

The F-ratio for the multivariate test of equality of mean vectors, as presented in Table 4.3, is significant at $p < .0005$. Inspection of the table of means indicates that the black peer model treatment produced more responses than did the control procedures on the measures of vocational planning strategies and information-seeking behaviors.

TABLE 4.3.--Multivariate F-Ratio for Differences in Black Peer Model and Control Groups.

D.F. = 3 and 87 F-Ratio = 6.6479

p < .0005

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	28.6686	12.6622	0.0007
Modeled Strategies	13.5970	15.2273	0.0002
InfoSeeking Behaviors	2.3997	5.0000	0.0279

D.F. for Hypothesis = 1 D.F. for Error = 89

Means for Hypothesis 8

The means for this hypothesis are presented in Table 4.4. The table includes means which represent the response frequencies for subjects in treatment group 1 and subjects in the control group (5), on the vocational planning strategies and information-seeking measures. Comparison of the means for these two groups indicates that the means of the black peer model treatment group were higher than the control group means, on all three dependent variables. Thus, the black peer model treatment was a more powerful elicitor of imitative responses than was the control procedure.

TABLE 4.4.--Means for All Treatment Groups.

Variable	Treatments				
	T1	T2	T3	T4	T5
Total Strategies	3.2857	2.2857	2.4286	2.5238	1.6190
Modeled Strategies	1.6667	1.2381	1.4286	1.2857	0.5238
InfoSeeking Behaviors	0.5238	0.3809	0.4286	0.2857	0.0476

Treatment Differences Related to Race of the Model

Null hypothesis 1.--There is no difference between the means of subjects exposed to black models and subjects exposed to white models, on measures of vocational planning strategies and information-seeking behaviors.

$$Ho: \quad M1 + M3 - (M2 + M4) = 0$$

The F-ratio for the multivariate test of equality of mean vectors, presented in Table 4.5, is not significant. This result indicates that black models and white models produced approximately equivalent frequencies of responses by subjects, on measures of vocational planning strategies and information-seeking behaviors. The means for hypothesis 1 are presented in Table 4.6.

TABLE 4.5.--Multivariate F-Ratio for Differences Due to the Effects of the Race of the Model.

D.F. = 3 and 87 F-Ratio = 0.8055

$p < .4942$

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	2.8117	1.2419	0.2682
Modeled Strategies	1.3743	1.5391	0.2181
InfoSeeking Behavior	0.4962	1.0340	0.3120

D.F. for Hypothesis = 1 D.F. for Error = 89

TABLE 4.6.--Means for Hypotheses 1, 2, and 4.

Variable	Treatments					
	T1+T3	T2+T4	T1+T2	T3+T4	T1-T3	T2-T4
Total Strategies	2.8571	2.4048	2.7857	2.4762	0.4285	0.1190
Modeled Strategies	1.5476	1.2614	1.4524	1.3571	0.1190	0.0238
InfoSeeking Behaviors	0.4762	0.3333	0.4524	0.3571	0.0476	0.0476

Treatment Differences Related to Age of the Model

Null hypothesis 2.--There is no difference between the means of subjects exposed to peer models and subjects exposed to adult models, on measures of vocational planning strategies and information-seeking behaviors.

$$Ho: \quad M1 + M2 - (M3 + M4) = 0$$

The F-ratio for the multivariate test of equality of mean vectors, presented in Table 4.7, is not significant. This result indicates that peer models and adult models produced approximately equivalent frequencies of responses by subjects, on measures of vocational planning strategies and information-seeking behaviors. The means for hypothesis 2 are presented in Table 4.6.

TABLE 4.7.--Multivariate F-Ratio for Differences Related to Age of the Model.

D.F. = 3 and 87 F-Ratio = 0.6063

p < .6127

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	3.6016	1.5907	0.2106
Modeled Strategies	0.3601	0.4033	0.5271
InfoSeeking Behaviors	0.1366	0.2846	0.5951

D.F. for Hypothesis = 1 D.F. for Error = 89

Interaction Effect Between Age and Race of Model

Null hypothesis 4.--There is no interaction effect between race and age of the model.

Ho: (M1 - M3) - (M2 - M4) = 0

The F-ratio for the multivariate test of equality of mean vectors, presented in Table 4.8, is not significant. This result indicates that race and age of the model combined did not produce an effect above that produced by the two variables acting independently. The means for hypothesis 4 are presented in Table 4.6.

TABLE 4.8.--Multivariate F-Ratio for Interaction Effect Between Age and Race of the Model.

D.F. = 3 and 87 F-Ratio = 0.6272

p < .5994

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	4.0437	1.7860	0.1849
Modeled Strategies	0.2358	0.2641	0.6086
InfoSeeking Behaviors	0.0042	0.0087	0.9259

D.F. for Hypothesis = 1 D.F. for Error = 89

Differences Between Black Peer Model and White Peer Model Groups

Null hypothesis 5.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to a white peer model on measures of vocational planning strategies and information-seeking behaviors.

Ho: M1 = M2

The F-ratio for the multivariate test of equality of mean vectors, as presented in Table 4.9, is not significant. This result indicates that the black peer model treatment and the white peer model treatment produced approximately equal frequencies of responses by subjects, on measures of vocational planning strategies and

information-seeking behaviors. The means for hypothesis 5 are presented in Table 4.4.

TABLE 4.9.--Multivariate F-Ratio for Differences Between Black Peer Model and White Peer Model Groups.

D.F. = 3 and 87 F-Ratio = 0.0552

p < .9829

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	0.0038	0.0017	0.9676
Modeled Strategies	0.0995	0.1115	0.7393
InfoSeeking Behaviors	0.0186	0.0389	0.8442

D.F. for Hypothesis = 1 D.F. for Error = 89

Differences in Black Peer Model and Black Adult Model Groups

Null hypothesis 6.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to a black adult model, on measures of vocational planning strategies and information-seeking behaviors.

Ho: M1 = M3

The F-ratio for the multivariate test of equality of mean vectors, as presented in Table 4.10, is not significant. This result indicates that the black peer model treatment and the black adult model treatment produced

approximately equal frequencies of responses by subjects, on measures of vocational planning strategies and information-seeking behaviors. The means for hypothesis 6 are presented in Table 4.4.

TABLE 4.10.--Multivariate F-Ratio for Differences Between Black Peer Model and Black Adult Model Groups.

D.F. = 3 and 87 F-Ratio = 0.8613

$p < .4645$

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	0.0322	0.0142	0.9053
Modeled Strategies	1.1537	1.2920	0.2588
InfoSeeking Behaviors	0.3200	0.6668	0.4164

D.F. for Hypothesis = 1 D.F. for Error = 89

Differences Between Black Peer Model and White Adult Model Groups

Null hypothesis 7.--There is no difference between the means of subjects exposed to a black peer model and subjects exposed to a white adult model, on measures of vocational planning strategies and information-seeking behaviors.

Ho: M1 = M4

The F-ratio for the multivariate test of equality of mean vectors, presented in Table 4.11, is not significant.

This result indicates that the black peer model treatment and the white adult model treatment produced approximately equal frequencies of responses by subjects, on measures of vocational planning strategies and information-seeking behaviors. The means for hypothesis 7 are presented in Table 4.4.

TABLE 4.11.--Multivariate F-Ratio for Differences Between Black Peer Model and White Adult Model Groups.

D.F. = 3 and 87 F-Ratio = 0.2254

$p < .8786$

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	0.0259	0.0114	0.9152
Modeled Strategies	0.4573	0.5122	0.4761
InfoSeeking Behaviors	0.0002	0.0004	0.9838

D.F. for Hypothesis = 1 D.F. for Error = 89

Overall Differences Between Treatment Groups

Null hypothesis 9.--There is no difference between the means of the five treatment groups on measures of vocational planning strategies and information-seeking behaviors.

Ho: M1 = M2 = M3 = M4 = M5

The F-ratio for the multivariate test of equality of mean vectors, presented in Table 4.12, is significant at $p < .0419$. Inspection of the table of means (Table 4.4) indicates that there were differences between the means of the five treatment groups on measures of vocational planning strategies and information-seeking behaviors. It will be recalled that the purpose of performing this omnibus "F" test was to check the outcomes of tests of hypotheses 1-8, which may have lost power in the use of the extremes of the "F" tables. These findings are consistent with the results of tests of hypotheses 3 and 8, which indicated specific differences between treatments.

TABLE 4.12.--Multivariate F-Ratio for Differences Between Treatment Groups.

D.F. = 12 and 230.5 F-Ratio 1.8482

$p < .0419$

Variable	Between Mean Squares	Univariate F	p Less Than
Total Strategies	7.1828	3.1725	0.0174
Modeled Strategies	3.8279	4.2868	0.0033
InfoSeeking Behaviors	0.6848	1.4268	0.2317

D.F. for Hypothesis = 4 D.F. for Error = 89

Means for Hypothesis 9

The means for hypothesis 9 are presented in Table 4.4. These means represent the response frequencies of subjects in all five treatment groups on the vocational planning strategies and information-seeking measures. Again, the means indicate that there were differences between treatments which did not occur as a result of chance alone.

Perceived Similarities Data

The three hypotheses which follow relate to the perceived similarities data, and were analyzed using a four-factor, repeated measures design. They were tested at the .01 level.

Treatment Group-By-Perception Interaction Effects

Null hypothesis 10.--There is no "treatment group-by-perception" interaction.

The "F" presented in Table 4.13 for treatment-by-perception interaction (T x P) is not significant. This result indicates that the combination of treatment and perception did not produce an effect above that produced by the two variables acting independently. That is, directional differences in the way individuals perceived self and model did not vary according to treatments.

TABLE 4.13.--Analysis of Variance for Perceived Similarities Data.

Source	Sums of Squares	DF	Mean Squares	F
Treatment (T)	3.84	3	1.28	.26
Perception (P)	87.77	1	87.77	41.99*
T x P	8.10	3	2.70	1.29
Items (I)	110.85	9	12.32	
Subjects:T (S:T)	389.02	80	4.86	
T x I	59.16	27	2.19	
P x I	64.63	9	7.18	
T x P x I	38.78	27	1.44	
P x S:T	167.33	80	2.09	
I x S:T	933.79	720	1.30	
I x P x S:T	509.39	720	0.71	
Total	2372.66	1679	1.41	

*Significant < .01.

Differences in Perception of Self and Model

Null hypothesis 11.--There is no difference in perception of self and model.

The "F" presented for the perception variable (P) in Table 4.13 is significant at $p < .01$. Inspection of the means indicates that subjects did not perceive themselves as being similar to the models, on the Perceived Similarities Test measure.

Means for Hypothesis 11

Since only two means are pertinent to this hypothesis, they are reported here, and not in table form. The mean for all subjects on "self" ratings was 2.139. The mean for all subjects on "model" ratings was 2.596. It should be noted that while differences in means do indicate differences in perception for the total sample, equality would not necessarily indicate agreement in perception on a person-to-person basis.

Differences in Combined Perception Scores Across Treatments

Null hypothesis 12.--There is no difference across treatments in combined perception scores obtained on the perceived similarities measure.

The "F" presented for treatment effects (T) in Table 4.13 is not significant. This result indicates that the combined perception scores for self and model are

approximately equal across the four treatment groups exposed to models.

Means for Hypothesis 12

The means for hypothesis 12 are presented in Table 4.14. These means refer to combined "self" and "model" scores for subjects in each of the four treatment groups.

TABLE 4.14.--Means for Hypothesis 12.

Variable	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Combined Perception Scores	2.438	2.348	2.379	2.307

Summary

All proposed hypotheses were analyzed, using multivariate analysis of covariance and an analysis of variance procedure. The overall experiment-wise error rate for hypotheses 1-8 was set at .12. Hypothesis 9 was tested at the experiment-wise error rate of .12. Hypotheses 10-12 were tested at the .01 level. The following hypotheses were supported by the data. (Numbering sequence does not apply to specific hypotheses in previously stated order.)

1. The mean scores of the experimental treatment groups were higher than the mean scores of the control group on the measures of vocational planning strategies and information-seeking behaviors.
2. The mean scores of the black peer model treatment group were higher than the mean scores of the control group on the measures of vocational planning strategies and information-seeking behaviors.
3. There was a difference in perception of self and model for subjects exposed to models in treatments.

The following hypotheses were not supported by the data.

1. There was no difference between subjects exposed to black models and subjects exposed to white models on the vocational planning strategies and information-seeking behaviors measures.
2. There was no difference between subjects exposed to peer models and subjects exposed to adult models on the vocational planning strategies and information-seeking behaviors measures.

3. There was no interaction effect between race and age of the model.
4. There was no difference between subjects exposed to a black peer model and subjects exposed to a white peer model on the vocational planning strategies and information-seeking behaviors measures.
5. There was no difference between subjects exposed to a black peer model and subjects exposed to a black adult model on the vocational planning strategies and information-seeking behaviors measures.
6. There was no difference between subjects exposed to a black peer model and subjects exposed to a white adult model on the vocational planning strategies and information-seeking behaviors measures.
7. There was no "treatment group-by-perception" interaction, on the perceived similarities measure.
8. There was no difference across treatments in combined perception scores obtained on the perceived similarities measure.

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION, IMPLICATIONS FOR FUTURE RESEARCH

Summary

The general purpose of the study was to investigate the effectiveness of a specific procedure for eliciting vocational-educational planning behaviors among eleventh-graders. The specific purpose was to compare the effects of two distinct characteristics of a social model, i.e., (1) race of the model and (2) age of the model, upon the acquisition and performance by male, adolescent blacks of a model's information-seeking behaviors.

The setting for the study was Pontiac Central High School in Pontiac, Michigan. The school is a large, urban high school with approximately equal numbers of blacks and whites in the student body. In the eleventh grade, approximately 40 per cent of the young men are blacks. The sample consisted of 105 male blacks in the eleventh grade.

Subjects were randomly assigned to five treatment groups, using a table of random permutations. An attempt to form randomized blacks was unsuccessful. The four experimental treatment groups were: black peer model,

white peer model, black adult model and white adult model. The fifth group was an active control group. The models were presented in booklets, with pictures and a written narrative explaining in detail the model's activities and resultant rewards for those activities.

All treatments were administered in one day by utilizing the entire eleventh-grade boys' gym class, including blacks and whites. While only the blacks were of interest in the study, this procedure reduced potential Hawthorne effects.

The experimental treatment consisted of the exposure of subjects in treatment groups 1-4 to different (in age and race) models performing identical information-seeking behaviors. Control subjects were exposed to no model, merely reading a general occupational information booklet which appeared superficially identical to the "model" booklets. After the exposure period, each subject received a packet containing materials which would be helpful in implementing the modeled information-seeking behaviors.

After an interval of twelve days, each subject in treatment groups 1-4 completed two exercises (VPS--Vocational Planning Strategies, and PST--Perceived Similarities Test). Control subjects received the same VPS exercise, but necessarily were given an exercise other than the PST, which would have been meaningless to them.

Similarly, after the twelve-day period, measures of the frequency of performances of the modeled information-seeking behaviors (FISB) were collected for all subjects. The VPS measure yielded data on both the total number of vocational planning strategies and the number of modeled vocational planning strategies. Thus, four criterion measures were used: VPST, VPSM, FISB and PST.

The basic hypotheses investigated were:

1. There is a difference between the means of subjects exposed to black models and subjects exposed to white models on measures of vocational planning strategies (VPS) and information-seeking behaviors (ISB).
2. There is a difference between the means of subjects exposed to peer models and subjects exposed to adult models on measures of VPS and ISB.
3. There is a difference between the means of subjects exposed to a model and control subjects on measures of VPS and ISB.
4. There is an interaction effect between race and age of the model.
5. There is a difference between the means of subjects exposed to a black peer model and subjects exposed to a white peer model on measures of VPS and ISB.

6. There is a difference between the means of subjects exposed to a black peer model and subjects exposed to a black adult model on measures of VPS and ISB.
7. There is a difference between the means of subjects exposed to a black peer model and subjects exposed to a white adult model on measures of VPS and ISB.
8. There is a difference between the means of subjects exposed to a black peer model and subjects exposed to no model on measures of VPS and ISB.
9. There is a difference between the means of the five treatment groups on measures of VPS and ISB.
10. There is a "treatment group-by-perception score" interaction, for scores on the perceived similarities test.
11. There is a difference in perception scores of self and model on the perceived similarities measure.
12. There is a difference across treatments in combined perception scores obtained on the perceived similarities measure.

Hypotheses 1-9 were tested using a multivariate analysis of covariance technique, with grade-point average

as the covariate. Hypotheses 10-12 were tested using an analysis of variance technique.

Hypotheses 3, 8, 9, and 11 were supported by the data. Inspection of the means for hypotheses 3, 8, and 9 indicated that there was a difference in the expected direction due to the experimental treatment procedures on the variables of VPSM, VPST and FISB. The results of hypothesis 11 indicated there was a difference in perception of self and model for subjects exposed to models in treatments.

Hypotheses 1, 2, 4, 5, 6, 7, 10, and 12 were not supported by the data. The null hypothesis was not rejected in these cases.

Conclusions

1. The modeling treatment was shown to elicit greater frequencies of ISB, VPST and VPSM than the control procedure.
2. The black peer model was shown to elicit greater frequencies of ISB, VPST and VPSM than the control procedure.
3. Differences across treatment groups were shown on the variables of FISB, VPST and VPSM.
4. Black models were not shown to elicit greater frequencies of ISB, VPST and VPSM than white models.

5. Peer models were not shown to elicit greater frequencies of ISB, VPST and VPSM than adult models.
6. The black peer model was not shown to elicit greater frequencies of ISB, VPST and VPSM than the white peer model.
7. The black peer model was not shown to elicit greater frequencies of ISB, VPST and VPSM than the black adult model.
8. The black peer model was not shown to elicit greater frequencies of ISB, VPST and VPSM than the white adult model.
9. There was no interaction effect for age and race of the model on the FISB, VPST and VPSM variables.
10. An overall difference was shown for subjects' perceptions of self and perceptions of a model on the perceived similarities variable.
11. A difference across treatments was not shown for combined perception scores on the perceived similarities variable.
12. There was no interaction effect for treatment and perception scores on the perceived similarities variable.

Discussion

The findings related to three of the hypotheses (3, 8, and 9) supported by the data are consistent with the results of previous studies of white adolescent populations (Krumboltz & Schroeder, 1965; Krumboltz & Thoresen, 1964, 1967, 1968). A treatment based on a rewarded model did produce more vocationally relevant behaviors than did control procedures. To extend such treatments to minority group populations such as black adolescents is important because no experimental evidence using this vocational counseling technique has been generated for such populations.

One need only review the characteristics of this country's unemployment statistics to realize that blacks, and particularly black youngsters, are in dire need of the optimum in vocational counseling services. This fact was made graphically clear in the federal government's Manpower Report to the President (1966). Traditional counseling practices are under attack by social scientists concerned with this problem. One suggestion has been that counselors will necessarily seek non-verbal, or at least less verbal methods to help these clients. Riessman (1964), after studying the life styles of the poor, found that simple verbal interaction has no relevance to their perceptions of their problems. Young men from low income families want substantive action.

It has been suggested that black youth have a great need for suitable social models, to enhance their social and vocational development in our society. Results of the present study do show that certain vocationally-relevant behaviors can be produced for such populations by exposing subjects to social models. It seems clear that modeling techniques such as those employed in this study might be meaningfully utilized in schools serving black youngsters.

Some of the authors who have suggested the need of black youth for significant social models also advocate that these roles be filled by blacks. Riessman (1962) has suggested the use of what he calls "indigenous professionals" as role models for disadvantaged school children. These would be individuals drawn from the same background as the students and employed in the schools as teacher aides, assistants, homework tutors, etc. His thesis is that disadvantaged youngsters have few opportunities to see "their own people" employed in a professional setting. Seeing them in that environment may significantly expand the student's perceptions of his vocational opportunities. Similarly, Harleston (1967) points out the absence of models with whom blacks can identify. Certainly it has been difficult for large numbers of blacks to gain entry in many professions and occupations. This situation likely prohibits black youngsters from identifying with and aspiring to certain vocational roles.

The results of the present study are not consistent with these speculations. That is, the data do not support the hypothesis that black models produce more vocationally relevant behaviors than do white models. The results do show, however, that black peer models produce greater frequencies of such behaviors than are obtained by active control procedures. Additional evidence is needed to more precisely define the effects of the race of a model upon observers.

Previous experimental research studies of the influence of the age of the model upon observers' behaviors have suggested that adult models are more, or at least equally, effective. Most of these investigations, however, have been concerned with populations ranging from pre-school to early-elementary age groups. The major studies conducted with adolescents have not set out to compare the relative effectiveness of peer models and adult models. It seems important, then, to extend the investigation of such comparative modeling variables to adolescent populations.

The influence of peers upon youngsters in the high school age group is apparently highly significant in the behavior of these youngsters. Ausubel (1968) notes that, as an adolescent becomes increasingly resistant to adult authority (a condition which is common at the adolescent stage of development), the approval or disapproval of his

peers emerges as the most powerful influence upon his behavior. It is further suggested that peer group influence is highest among individuals of lower socioeconomic backgrounds. Certainly this category includes many black adolescents in schools throughout this country, including the setting for the present study.

The data derived from this study do not support a hypothesis that peer models will produce more vocationally relevant responses than will adult models for this black adolescent population. A possible explanation of this result may be found in the differences in potential influence of groups, as opposed to that of individuals. It may be that the tendency of peer group identification to produce conforming responses does not extend to the one-to-one situation in which the individual is confronted by only a single model. The study of group dynamics has demonstrated the power of groups in the elicitation of conforming behaviors. Further, Tuma and Livson (1960) found that tendencies to conform are greater among lower-class adolescents, such as those used in the present study. The present data suggest, then, that the differences in models presented were not sufficiently powerful to produce differences in identification with peer or adult models.

This notion is supported by the results for the perceived similarities variable. While differences in the model's age and race were presented in pictures and very

explicitly in written descriptions, the data indicated no significant differences in perceptions of self and model between the four experimental treatment groups. That is, subjects exposed to a black peer model saw themselves as no more similar to that model than did subjects exposed to a white peer model see themselves as similar to their model. There was an overall difference for all subjects between perception of self and perception of model.

These findings lead to a discussion of some aspects of methodology. Certainly a major question raised by the present study is the efficacy of the medium used to transmit the modeled behaviors, i.e., the booklets. An evaluation of the reading scores which were available for some of the subjects indicated a wide range in reading proficiency among the subjects. While it is apparent from the results that at least some of the subjects were able to read and comprehend the booklet material, there is a question about the number of subjects who indeed may have been incapable of reading at the level of the material. Several subjects had no response on either the acquisition or performance measures. It is certainly possible that they were unable to read the material, although this is admittedly conjecture. At any rate, there appears to be a need to investigate the use of other media, such as films, film-strips, video and audio tapes.

A possible explanation for the low total response frequencies may be attributed to the means of showing that the model was rewarded for his behaviors. While vicarious reinforcement of this type has been shown to increase imitative responses, it may be that the descriptions of reinforcement were not powerful enough to produce actual performances of the modeled behaviors. This seems to be verified by comparative inspection of the responses on the acquisition and performance measures. Substantially more acquisition responses were produced, suggesting that the modeled behaviors may indeed have been learned, but the reinforcement procedure did not work effectively to produce actual performance of the behaviors. Additional study of this phenomenon is necessary to determine the relative effects of different reinforcement procedures.

Also of interest is the issue of group versus one-to-one presentation of the treatments. While the interests of administrative expediency and efficiency were served by employing the booklet procedure with large groups, it is difficult to control interactions of the subjects immediately subsequent to administration. As the subjects discuss and compare the booklets they received, differences in treatment effects may be substantially reduced. Treatments did produce greater frequencies of response than did control procedures in the present study, but differences in comparisons of the black peer model treatment and

each of the other four conditions were found only for the black peer versus control conditions.

Implications for Future Research

Experimental research studies often generate more questions than they answer. Questions emerging from this study have implications for future research, and they will be discussed in this section.

The high school used in this study is not necessarily typical of schools which serve an integrated student population. For example, the type of treatment used may obtain different results in a school with more stringent discipline of the students. Also, different results might be found in schools serving students of other socioeconomic backgrounds. Thus, the study should be replicated in other settings.

Other media may be more effective than the booklets used in this study. Perhaps video or audio tapes, films or film-strips, either individually or in conjunction with each other, may be more suitable for this population. One study might compare the effects of different media in the same experiment with black adolescents. It seems important to develop media which encourage and/or require active involvement of the subjects, since they may be more responsive to action-oriented than more verbal treatments. The growing interest and research in computer-assisted

career development counseling and computer-assisted instruction may be indicative of trends for the future.

Comparative investigations should also be conducted in the area of presentation of the treatments within an individual or a group format. For this particular population, it is possible that more definitive differences between treatments may have been obtained if the subjects could have read the booklets in isolated, individual situations, free from the distracting behavior of others. While this was not a problem in the present study, it was apparent that subjects may attempt to interact with others during the treatment, if strict monitoring procedures are not maintained. Also, discussion by members of a group immediately following the treatment is most certainly going to occur. This condition may jeapordize any subtle differences in treatment effects.

A study of this kind should also be replicated with students in different age ranges. For example, a study might be conducted in which the effects of the treatment upon freshmen are compared with the effects upon seniors. It is possible that developmental differences and changing needs systems could produce different results. Also, in terms of time, longer periods may be allowed in which the imitative responses are allowed to occur. Another dimension could be added by including a direct reinforcement procedure, perhaps midway through the planned time interval.

Additional insights might be obtained from an investigation which tests different reinforcement procedures. It may be possible to provide direct reinforcement by using incentives to reward the performance of the modeled behaviors. The incentives could be in the form of money, for example, or in other reinforcers which could be determined through careful evaluation of the members of a particular population.

Certainly one other investigation of interest would be in follow-up studies. While it is important to discover methods of producing rather immediate imitative responses, practicing guidance counselors would be gratified to know that such behavior modification procedures have long-term effects as well. Since counselors sometimes try to teach clients behaviors that will be useful in the future as well as for dealing with the present, it would be useful to follow the subjects in an experiment such as the present one, obtaining longitudinal data concerning the enduring effects of the treatments. Some effects may be short-lived, while others persist. Studies over periods of weeks, months and even years would contribute meaningful depth to the scope of studies such as this one.

BIBLIOGRAPHY

BIBLIOGRAPHY

Asch, Solomon, E. "Opinion and Social Pressure." In Small Groups. Edited by A. Paul Hare, Edgar F. Borgatta, & Robert Bales. New York: Alfred A. Knopf, Inc., 1967, 318-324.

Ausubel, David P. Educational Psychology. New York: Holt, Rinehart and Winston, 1968.

Baer, Donald M., & Sherman, James A. "Reinforcement Control of Generalized Imitation in Young Children." Journal of Experimental Child Psychology, 1964, 1(1), 37-49.

Bandura, Albert. "Influences of Models' Reinforcement Contingencies on the Acquisition of Imitative Responses." Journal of Personality and Social Psychology, 1965, 1(6), 589-595.

Bandura, Albert. Principles of Behavior Modification. New York: Holt, Rinehart and Winston, 1969.

Bandura, Albert, Grusec, Joan, & Menlove, Frances. "Vicarious Extinction of Avoidance Behavior." Journal of Personality and Social Psychology, 1967, 5(1), 16-23.

Bandura, Albert, Ross, Dorothea, & Ross, Sheila A. "Imitation of Film-Mediated Aggressive Models." Journal of Abnormal and Social Psychology, 1963, 66(1), 3-11.

Bandura, Albert, Ross, Dorothea, & Ross, Sheila A. "Transmission of Aggression Through Imitation of Aggressive Models." Journal of Abnormal and Social Psychology, 1961, 63(3), 575-582.

Bandura, Albert, & Huston, Aletha C. "Identification as A Process of Incidental Learning." Journal of Abnormal and Social Psychology, 1961, 63(2), 311-318.

Bandura, Albert, & Kupers, C. J. "The Transmission of Patterns of Self-Reinforcement Through Modeling." Journal of Abnormal and Social Psychology, 1964, 69, 1-9.

Bandura, Albert, & Walters, R. H. Social Learning and Personality Development. New York: Holt, Rinehart and Winston, 1963.

Banks, George, Berenson, Bernard G., & Carkhuff, Robert R. "The Effects of Counselor Race and Training Upon Counseling Process with Negro Clients in Initial Interviews." Journal of Clinical Psychology, 1967, 23(1), 70-72.

Barnett, Minna K. "Being A Member of A Minority Group: Relevancy and Opportunity in the World of Work." In Poverty, Education and Race Relations. Edited by William C. Kvaraceus, John S. Gibson, & Thomas J. Curtin. Boston: Allyn and Bacon, 1967, 169-181.

Bell, Alan P. "Role Modeling of Fathers in Adolescence and Young Adulthood." Journal of Counseling Psychology, 1969, 16(1), 30-35.

Bernard, L. L. An Introduction to Social Psychology. New York: Henry Holt, 1926.

Burnstein, E., Stotland, E., & Zander, A. "Similarity to A Model and Self-Evaluation." Journal of Abnormal and Social Psychology, 1961, 62(2), 257-264.

Butcher, S. H. The Poetics of Aristotle. London: Mac-Millan, 1922.

Calia, Vincent F. "The Culturally Deprived Client: A Re-Formulation of the Counselor's Role." Journal of Counseling Psychology, 1966, 13, 100-105.

Davis, Daniel J. "Flexibility and Power in Comparisons Among Means." Psychological Bulletin, 1969, 71, 441-444.

Dewey, John. Democracy and Education. New York: Mac-Millan, 1930.

Gelatt, H. B. "Decision-Making: A Conceptual Frame of Reference for Counseling." Journal of Counseling Psychology, 1962, 9, 240-245.

Harleston, Bernard W. "Wasted Talent: Problems of Low Motivation and Achievement." In Poverty, Education and Race Relations. Edited by William C. Kvaraceus, John S. Gibson, & Thomas J. Curtin. Boston: Allyn and Bacon, 1967, 120-127.

Hartup, Willard W. "Patterns of Imitative Behavior in Young Children." Child Development, 1964, 35(1), 183-191.

Hartup, Willard W. "Some Correlates of Parental Imitation in Young Children." Child Development, 1962, 33(1), 85-96.

Henderson, George. "Role Models for Lower Class Negro Boys." Personnel and Guidance Journal, 1967, 46(1), 6-10.

Hicks, David J. "Imitation and Retention of Film-Mediated Aggressive Peer and Adult Models." Journal of Personality and Social Psychology, 1965, 2(1), 97-100.

Holland, J. L. "A Theory of Vocational Choice." Journal of Counseling Psychology, 1959, 6, 35-44.

Horowitz, Herbert. "The Relationship of Confidence to Competence and Imitative Behavior." Journal of Psychology, 1966, 63(2), 235-247.

Hyman, Herbert H., et al. Interviewing in Social Research. Chicago: University of Chicago Press, 1954.

Jakubczak, L. F., & Walters, R. H. "Suggestibility as Dependency Behavior." Journal of Abnormal and Social Psychology, 1959, 59, 102-197.

Jersild, A. T. Child Psychology. New York: Prentice-Hall, 1933.

Johnson, Walter R., Stefflre, Buford, & Edelfelt, Roy A. Pupil Personnel and Guidance Services. New York: McGraw-Hill, 1961.

Kagan, J. "On the Need for Relativism." American Psychologist, 1967, 22, 131-142.

Kanareff, V. T., & Lanzetta, J. T. "Effects of Success-Failure Experiences and Probability of Reinforcement Upon the Acquisition and Extinction of an Imitative Response." Psychological Reports, 1960, 7, 151-166.

Krumboltz, John D. "Behavioral Goals for Counseling." Journal of Counseling Psychology, 1966, 13, 153-159.

Krumboltz, John D., Varenhorst, Barbara B., & Thoresen, Carl E. "Nonverbal Factors in the Effectiveness of Models in Counseling." Journal of Counseling Psychology, 1967, 14, 412-418.

Krumboltz, John D., & Schroeder, W. W. "Promoting Career Planning Through Reinforcement." Personnel and Guidance Journal, 1965, 44, 19-26.

Krumboltz, John D., & Thoresen, Carl E., eds. Behavioral Counseling: Cases and Techniques. New York: Holt, Rinehart and Winston, 1969.

Krumboltz, John D., & Thoresen, Carl E. "The Effects of Behavioral Counseling in Group and Individual Settings on Information-Seeking Behavior." Journal of Counseling Psychology, 1964, 11, 324-333.

Kvaraceus, W. C., Gibson, John S., & Curtin, Thomas J. Negro Self-Concept: Implications for School and Citizenship. New York: McGraw-Hill, 1965.

Lanzetta, J. T., & Kanareff, V. T. "The Effects of A Monetary Reward on the Acquisition of an Imitative Response." Journal of Abnormal and Social Psychology, 1959, 59, 120-127.

LaPiere, R. T., & Farnsworth, R. R. Social Psychology. New York: McGraw-Hill, 1936.

Lefkowitz, M., Blake, R., & Mouton, J. "Status Factors in Pedestrian Violation of Traffic Signals." Journal of Abnormal and Social Psychology, 1955, 51, 704-706.

Lovaas, O. Ivar. "Effect of Exposure to Symbolic Aggression on Aggressive Behavior." Child Development, 1961, 32, 37-44.

Luchins, A. S. "On Agreement with Another's Judgments." Journal of Abnormal and Social Psychology, 1944, 39, 97-111.

McDavid, John W. "Effects of Ambiguity of Environmental Cues Upon Learning to Imitate." Journal of Abnormal and Social Psychology, 1962, 65(6), 381-386.

McDavid, John W. "Effects of Imitative Cues Upon Learning by Observation." Journal of Social Psychology, 1964, 62(1), 165-174.

McDavid, John W. "Imitative Behavior in Preschool Children." Psychological Monographs, 1959, 73 (16, Whole No. 486).

Maccoby, Eleanor E. "Role-Taking in Childhood and Its Consequences for Social Learning." Child Development, 1959, 30, 239-252.

Michael, J., & Meyerson, L. "A Behavioral Approach to Counseling and Guidance." Harvard Education Review, 1962, 32, 382-402.

Miller, N. E., & Dollard, J. Social Learning and Imitation. New Haven: Yale University Press, 1941.

Mowrer, O. H. Learning Theory and Symbolic Processes. New York: Wiley, 1960.

Mussen, Paul H., & Rutherford, Eldred. "Effects of Aggressive Cartoons on Children's Aggressive Play." Journal of Abnormal and Social Psychology, 1961, 62, 461-464.

O'Connell, Edward J., Jr. "The Effect of Cooperative and Competitive Set on the Learning of Imitation and Nonimitation." Journal of Experimental and Social Psychology, 1965, 1(2), 172-183.

O'Connell, Edward J. "The Effects of Probability of Reinforcement, Cooperative-Competitive Set, Sex of Model, and Sex of Subject on Imitative Behavior in A Two-Choice Situation." Doctoral dissertation, Northwestern University, Ann Arbor, Michigan, University Microfilms, 1962, No. 63-3434.

Pettigrew, T. F. "Negro American Intelligence: A New Look at the Controversy." Journal of Negro Education, 1964, 33(1), 6-25.

Phillips, Robert E. "Vicarious Reinforcement and Imitation in A Verbal Learning Situation." Journal of Experimental Psychology, 1968, 76(4, Pt. 1), 669-670.

Resnick, Estelle S. "Imitative Learning as A Function of Model Competence and Probability of Reinforcement for Imitation." Doctoral dissertation, Indiana University, Ann Arbor, Michigan, University Microfilms, 1966, No. 67-3704.

Riessman, Frank. "Role-Playing and the Lower Socioeconomic Group." Group Psychotherapy, 1964, 17, 36-48.

Riessman, Frank. The Culturally Deprived Child. New York: Harper and Row, 1962.

Roe, Anne. The Psychology of Occupations. New York: John Wiley and Sons, 1956.

Rosekrans, Mary A. "Imitation in Children as A Function of Perceived Similarity to A Social Model and Vicarious Reinforcement." Journal of Personality and Social Psychology, 1967a, 7(3, Pt. 1), 307-315.

Rosekrans, Mary A. "Vicarious Reinforcement and the Acquisition and Performance of Imitative Responses as A Function of Perceived Similarity to A Social Model." Doctoral dissertation, University of Minnesota, Ann Arbor, Michigan, University Microfilms, 1967, NO. 67-10439.

Rosekrans, Mary A., & Hartup, Willard W. "Imitative Influences of Consistent and Inconsistent Response Consequences to A Model on Aggressive Behavior in Children." Journal of Personality and Social Psychology, 1967, 7(4, Pt. 1), 429-434.

Rosen, B. C. "Race, Ethnicity, and the Achievement Syndrome." American Sociological Review, 1959, 24, 47-60.

Rosenbaum, Milton E., Chalmers, Douglas K., & Horne, William C. "Effects of Success and Failure and the Competence of the Model on the Acquisition and Reversal of Matching Behavior." Journal of Psychology, 1962, 54(2), 251-258.

Rosenbaum, Milton E., & Tucker, Irving F. "The Competence of the Model and the Learning of Imitation and Nonimitation." Journal of Experimental Psychology, 1962, 63(2), 183-190.

Rosenblith, Judy F. "Learning by Imitation in Kindergarten Children." Child Development, 1959, 30, 69-80.

Ross, E. A. Social Psychology. New York: Macmillan, 1912.

Schein, Edgar H. "The Effect of Reward on Adult Imitative Behavior." Journal of Abnormal and Social Psychology, 1954, 49, 389-395.

Shane, M. "Some Cultural Considerations in the Psychotherapy of A Negro Patient." Psychiatry Quarterly, 1960, 34, 9-27.

Sherif, M., & Sherif, C. W. Reference Groups. New York: Harper and Row, 1964.

Silberman, C. E. Crisis in Black and White. New York: Random House, 1964.

Smith, Donald H. "A Speaker-Models Project to Enhance Pupils' Self-Esteem." Journal of Negro Education, 1967, 36(2), 177-180.

Stefflre, Buford, ed. Theories of Counseling. New York: McGraw-Hill, 1965.

Stein, Aletha H. "Imitation of Resistance to Temptation." Child Development, 1967, 38(1), 158-169.

Stein, Aletha H., & Wright, John C. "Imitative Learning Under Conditions of Nurturance and Nurturance Withdrawal." Child Development, 1964, 35(3), 927-937.

Stotland, E., Zander, A., & Natsoulas, T. "Generalization of Interpersonal Similarity." Journal of Abnormal and Social Psychology, 1961, 62(2), 250-256.

Stotland, E., & Patchen, M. "Identification and Change in Prejudice and in Authoritarianism." Journal of Abnormal and Social Psychology, 1961, 62, 265-274.

Super, Donal E. The Psychology of Careers. New York: Harper and Brothers, 1957.

Tarde, Gabriel. The Laws of Imitation. Translated by E. C. Parsons. New York: Henry Holt, 1903.

Thoresen, C. E., Krumboltz, J. D., & Varenhorst, B. "Sex of Counselors and Models: Effect on Client Career Exploration." Journal of Counseling Psychology, 1967, 14, 503-508.

Thoresen, Carl E., & Krumboltz, John D. "Relationship of Counselor Reinforcement of Selected Responses to External Behavior." Journal of Counseling Psychology, 1967, 14, 140-144.

Thoresen, Carl E., & Krumboltz, John D. "Similarity of Social Models and Clients in Behavioral Counseling: Two Experimental Studies." Journal of Counseling Psychology, 1968, 15(5, Pt. 1), 393-401.

Thorndike, E. L. Human Nature and the Social Order. New York: Macmillan, 1940.

Tuma, E., & Livson, N. "Family Socioeconomic Status and Adolescent Attitudes to Authority." Child Development, 1960, 31, 387-399.

Tyler, Leona E. The Methods and Processes of Appraisal and Counseling. In A. S. Thompson & D. E. Super, eds., The Professional Preparation of Counseling Psychologists. New York: Bureau of Publications, Teachers College, Columbia University, 1964.

Walters, Richard H. "Implications of Laboratory Studies of Aggression for the Control and Regulation of Violence." Annals of the American Academy of Political and Social Science, 1966, 364, 60-72.

Walters, R. H., Llewellyn, Thomas E., & Acker, C. W. "Enhancement of Punitive Behavior by Audio Visual Displays." Science, 1962, 132, 872-873.

Walters, R. H., & Amoroso, D. M. "Cognitive and Emotional Determinants of the Occurrence of Imitative Behavior." British Journal of Social and Clinical Psychology, 1967, 6(3), 174-185.

Walters, R. H., & Parke, Ross. "Influence of Response Consequences to A Social Model on Resistance to Deviation." Journal of Experimental Child Psychology, 1964, 1, 269-280.

Wodtke, Kenneth H., & Brown, Bobby R. "Social Learning and Imitation." Review of Educational Research, 1967, 37(5), 514-538.

Wheeler, Ladd, & Arrowood, A. John. "Restraints Against Imitation and Their Reduction." Journal of Experimental Social Psychology, 1966, 2(3), 288-300.

Wilson, William C. "Imitation and the Learning of Incidental Cues by Preschool Children." Child Development, 1958, 29, 393-397.

Wissler, C. Man and Culture. New York: Thomas Y. Crowell, 1923.

Wrenn, C. Gilbert. The Counselor in A Changing World. Washington, D.C.: American Personnel and Guidance Association, 1962.

Young, Kimball. "Imitation." Encyclopedia of the Social Sciences, 1932, 7, 586-587.

APPENDICES

APPENDIX A

RANDOMIZATION PROCEDURE

Randomization Procedure

Subjects were male blacks, in the eleventh grade at Pontiac Central High School, in Pontiac, Michigan. The experimenter (E) obtained a roster of all male eleventh-graders in gym classes, including white students, who were immediately assigned to the control group only. E obtained grade-point averages (GPA) from school records for each of the black subjects in the sample. It should be noted that an attempt was made to form randomized blacks, using GPA as a blocking variable on which to group the subjects. An error in the procedure of assigning subjects to treatments eliminated this possibility, due to an overlap between blocks which resulted. When this effort was unsuccessful, it was decided to utilize GPA as a covariate and analyze the partially blocked data in a multivariate analysis of covariance design. The experimenter notes that some power may be lost when using analysis of covariance to analyze partially blocked data.

On the day of administration, E randomly assigned subjects in each gym class to treatments, utilizing a table of random permutations of 5 (five treatments). This procedure provided a completely random distribution of all

eligible subjects who were present that day. The names of absent subjects in the original subject pool were simply crossed off each class roster, and the random assignment of subjects via the permutations continued with the next student on the roster who was present. Thus, each student present that day was randomly assigned to one of the five treatments.

APPENDIX B

BLACK PEER MODEL BOOKLET

(TREATMENT 1)

CAREER

INFORMATION

DIRECTIONS: Read the directions below, while they are being read aloud.

1..... Today, instead of having your regular class, we're going to do something different.

2..... It is your job to read this booklet, and try to remember what it tells about.

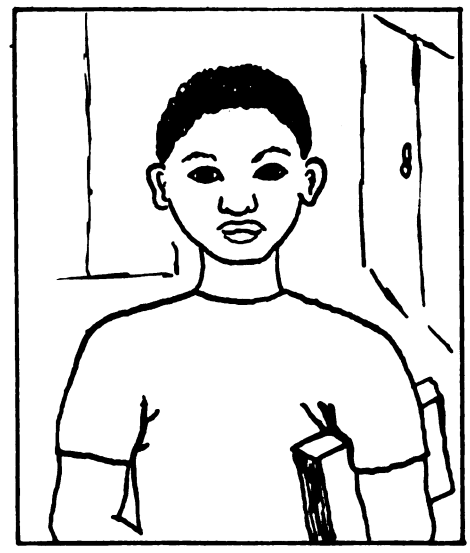
That's all you have to do. Just read the booklet.

3..... You may have the rest of the class period to read the booklet.

4..... The booklets will be collected when everyone is finished.

5..... Now, turn the page and start reading.

This booklet tells a story about a young man who is in high school, just like you. This young man, whom you can see in the drawing, is about your age. As a matter of fact, he's in the same grade, too. He takes a lot of the same kind of classes that you do, and he goes to the same kind of school.



This young man is black, too, just like you. Since he's about the same age and he's black, too, he seems to be quite a lot like you.

********** ********** ********** ********** ********** **********

The young man has been doing some thinking about what he's going to do when he graduates. He has a lot of questions ??????? in his mind that need to be answered. For example, he had thought about getting a job after he graduates, but he also thought about maybe going on for more education and training, if he could get it.

After talking with some of his friends about their plans,

he found that most of them had just as many questions as he did (and not very many answers). They were wondering about their futures, too.

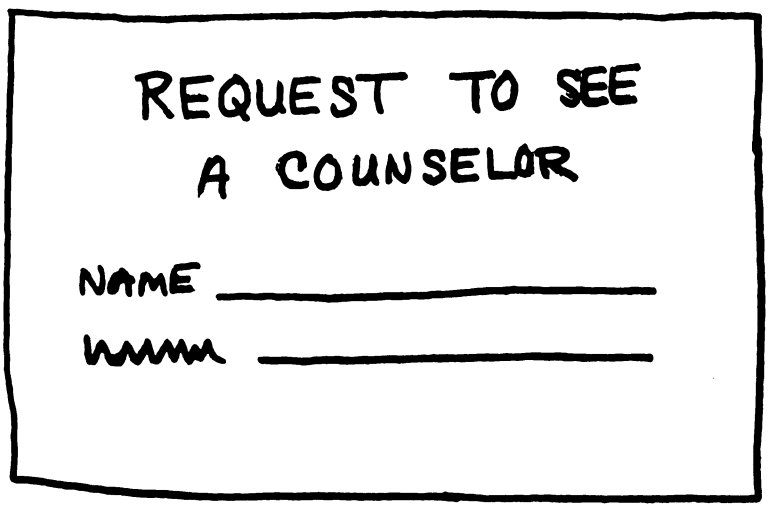
****

He finally decided he'd better start doing something to get some answers to his questions. It was time for ACTION!!!!!!!!!

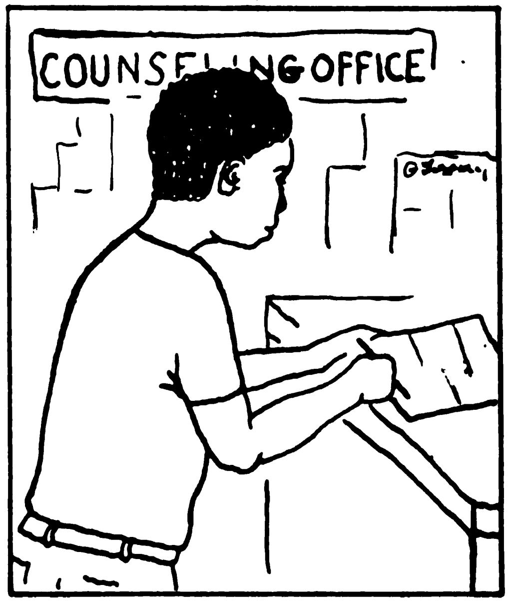
****

His school had a Counseling Office, and it seemed logical that a counselor could help. A few days before, an envelope full of information

had been handed out to each student in one of his classes. He remembered seeing something in it about the school counselors being available for appointments. In his envelope was a form which a student could fill out to ask for an appointment with one of the counselors.



The young man filled out the form. Then he followed the directions on it, telling him to put the form in the "<u>REQUEST BOX</u>" in the Counseling Office.



*****
*****
*****
*****
*****
*****
*****

In a few days, the young man found that filling out the form and returning it to the Counseling Office had paid off. He got an appointment with a counselor, who was very interested and told him that it was a good time to do some planning. He asked the counselor a lot of questions about jobs and his chances of getting more education and training after high school. The counselor answered many of the questions, so afterwards the young man felt that he was able to do a better job of planning his future than before.

****

He also remembered reading something in the envelope of information about some booklets

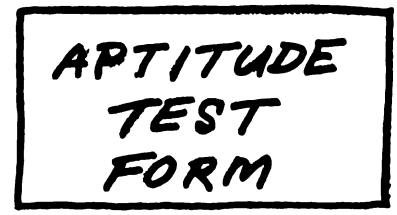
which tell about some government training programs. The information

said these booklets were available at the Counseling Office, so he asked the counselor about them. The counselor knew what the young man was asking about. He took him to the Counseling Office secretary, who kept the supply of booklets.

The young man asked for one of the booklets, and then he signed his name on a special sheet. This had to be signed by everyone who got one of the booklets, so they could tell when they had to order more.

********** ********** **********
********** ********** **********

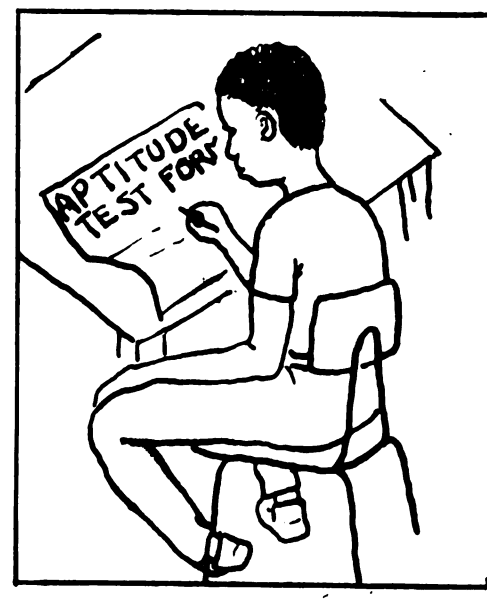
As soon as he got a chance, he sat down and read the booklet. He was pretty excited when he finished, because it seemed as if he might fit into some of the training programs. Some of them looked like really good chances for him to learn special skills, or to go on to college. So, checking out the booklet paid off, too. Again, it helped him in planning his future.



Everyone had also been given a special form which was supposed to be helpful to a student who is planning his life after high school. Students sometimes find it helpful to know more about themselves, so they can make more sensible decisions and plans. One way to learn more about yourself is to take an aptitude test. Aptitude tests are easy to take, because you don't have to worry about giving wrong answers. Aptitude tests just tell what you are best at doing. That is, they tell you that you have an ability to do some things better than others. When you know what your abilities are, then you know what kinds of jobs you might be good at.

***** ***** ***** ***** *****

The young man liked this idea, so he followed the directions on the form. He signed where it asked if he would be interested in taking an aptitude test. Then, he took it to the Counseling Office and put it in the "REQUEST BOX".

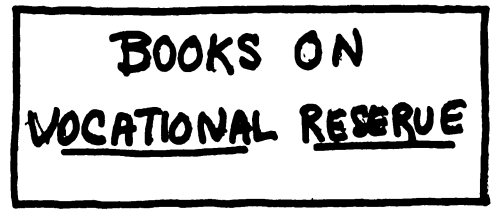


***** ***** ***** ***** ***** ***** *****

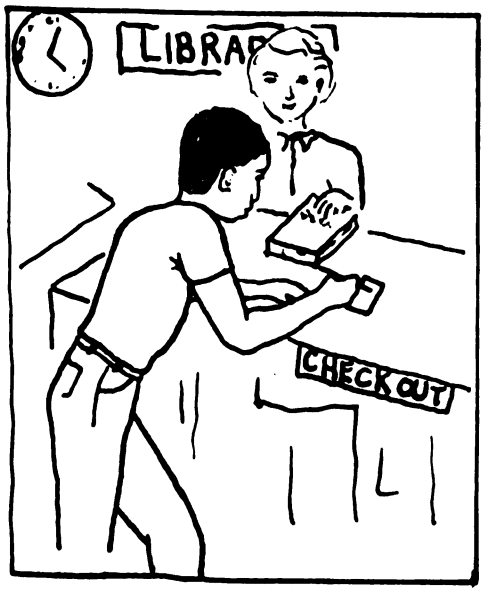
Later, he was told that the local State Employment Service office gives aptitude tests. So he went there and asked to take an aptitude test. Afterwards, a counselor there told him the test showed that he was good at working with words and numbers, but not so good at working with his hands. This information was very helpful in his planning for the kind of work or training he might choose after finishing high school.

********** ********** **********
********** ********** **********

He had also noticed, in his envelope of information, a form with a list of books. It said that the books on the



list had been placed on "Vocational Reserve" in the school library. The books were supposed to contain information for career planning. To check out one of the books, you had to mark the one you wanted on the form and give it to the librarian. So, he went to the library. He marked the one he wanted and gave the form to the librarian, who took it and found the book. She told him he could keep it for one hour. So, he checked the book out by signing the card she gave him.



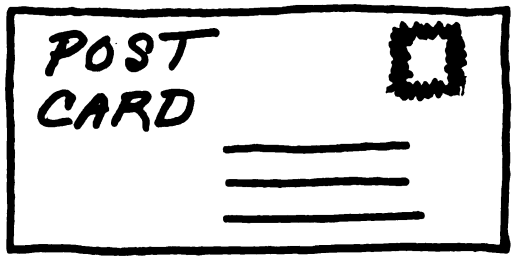
***** ***** ***** ***** *****

He found a quiet place and sat down to read. Since he had only two hours, he naturally couldn't read the whole book. So he picked a chapter about important steps in making decisions and he read it. He thought that he picked up some good ideas that he could put to use as he continued to work out his future plans.

********** ********** **********
********** ********** **********

One thing he decided was that students like himself can usually make better, more sensible plans if they get more information about jobs, education and training. While the other information was helpful, he felt that the more he could get, the better off he'd be.

His envelope of information contained a post card which said



something about this. He read his and saw that it could be used to help him get more information.

He wrote his name and address on the back. The other address was already printed on the front. It said that, if he mailed it, he would receive a list of places offering job and training information. Then he put the card in a mail box.

***** ***** ***** ***** ***** ***** *****

A few days later, he received the list of those places, just as it had said on the card. When he had time later, he wrote to some of them and asked for certain vocational and educational information. He got several pamphlets and other materials back, and these, too, helped him answer his questions about the future.

***** ***** ***** *****
***** ***** ***** *****
***** ***** ***** *****

He thought about all of the information he had, and about the different ways he had collected it:

1. He had asked for an appointment with a counselor.
2. He had gotten the government training program booklet.
3. He had signed the form for the aptitude test.
4. He had checked out one of the special reserve books.
5. He had mailed the post card.

He told his friends about the different ways he had gotten such information for planning his future. He knew now what he was going to do after he graduated, because he had used all of the vocational and educational facts he had gathered and was then able to decide whether to try to get more training or to try to get a job.

He felt so good about having these questions answered that he even did a better job in school than he had been doing before.

All in all, he was pretty satisfied with his experiences in collecting information in several different ways.

APPENDIX C

WHITE PEER MODEL BOOKLET

(TREATMENT 2)

CAREER

INFORMATION

DIRECTIONS: Read the directions below, while they are being read aloud.

1..... Today, instead of having your regular class, we're going to do something different.

2..... It is your job to read this booklet, and try to remember what it tells about.

That's all you have to do. Just read the booklet.

3..... You may have the rest of the class period to read the booklet.

4..... The booklets will be collected when everyone is finished.

5..... Now, turn the page and start reading.

This booklet tells a story about a young man who is in high school, just like you. This young man, whom you can see in the drawing, is about your age. As a matter of fact, he's in the same grade, too. He takes a lot of the same kind of classes that you do, and he goes to the same kind of school.

This young man is white. So, he's like you in one way, but unlike you in another. That is, he's the same age, but he's not the same race.

********** ********** **********
********** ********** **********

The young man has been doing some thinking about what he's going to do when he graduates. He has a lot of questions ?????? in his mind that need to be answered. For example, he had thought about getting a job after he graduates, but he also thought about maybe going on for more education and training, if he could get it.

After talking with some of his friends about their plans,

he found that most of them had just as many questions as he did (and not very many answers). They were wondering about their futures, too.

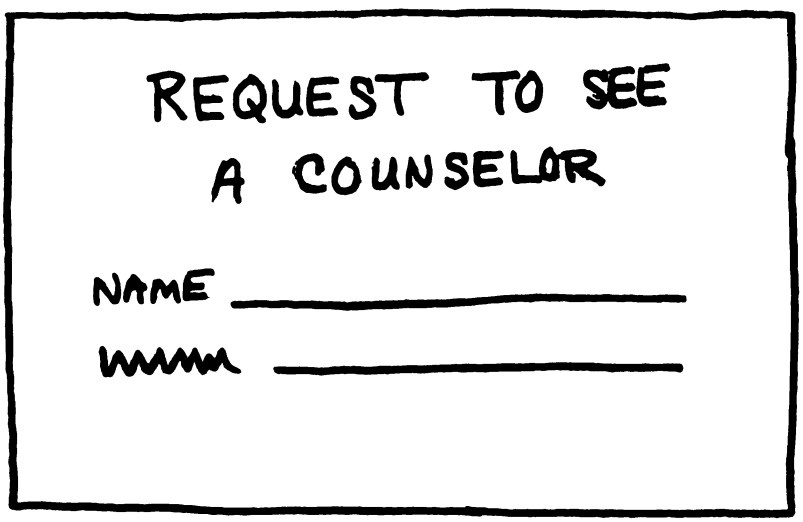
****

He finally decided he'd better start doing something to get some answers to his questions. It was time for ACTION!!!!!!!!!

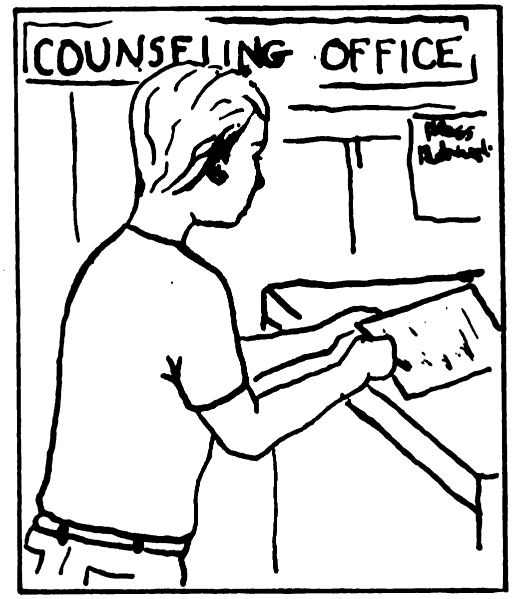
****

His school had a Counseling Office, and it seemed logical that a counselor could help. A few days before, an envelope full of information

had been handed out to each student in one of his classes. He remembered seeing something in it about the school counselors being available for appointments. In his envelope was a form which a student could fill out to ask for an appointment with one of the counselors.



The young man filled out the form. Then he followed the directions on it, telling him to put the form in the "REQUEST BOX" in the Counseling Office.



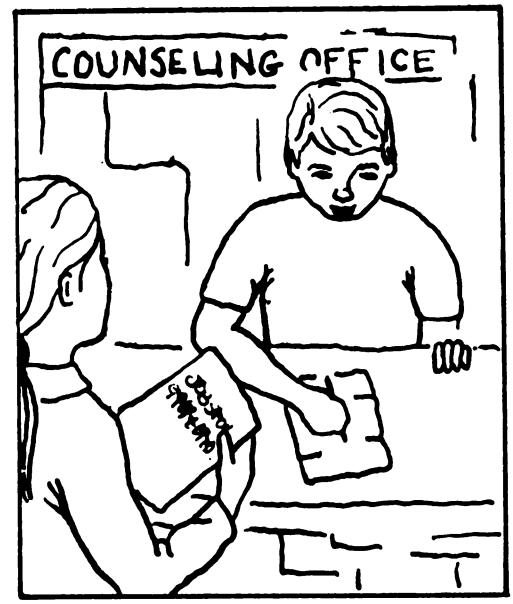
*****
*****
*****
*****
*****
*****
*****

In a few days, the young man found that filling out the form and returning it to the Counseling Office had paid off. He got an appointment with a counselor, who was very interested and told him that it was a good time to do some planning. He asked the counselor a lot of questions about jobs and his chances of getting more education and training after high school. The counselor answered many of the questions, so afterwards the young man felt that he was able to do a better job of planning his future than before.

****

He also remembered reading something in the envelope of information about some booklets which tell about some government training programs. The information

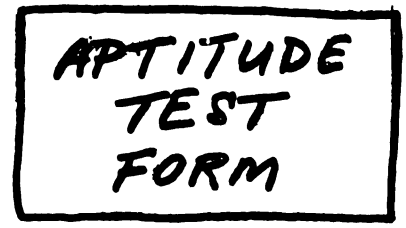
said these booklets were available at the Counseling Office, so he asked the counselor about them. The counselor knew what the young man was asking about. He took him to the Counseling Office secretary, who kept the supply of booklets.



The young man asked for one of the booklets, and then he signed his name on a special sheet. This had to be signed by everyone who got one of the booklets, so they could tell when they had to order more.

********** ********** **********
********** ********** **********

As soon as he got a chance, he sat down and read the booklet. He was pretty excited when he finished, because it seemed as if he might fit into some of the training programs. Some of them looked like really good chances for him to learn special skills, or to go on to college. So, checking out the booklet paid off, too. Again, it helped him in planning his future.



Everyone had also been given a special form which was supposed to be helpful to a student who is planning his life after high school. Students sometimes find it helpful to know more about themselves, so they can make more sensible decisions and plans. One way to learn more about yourself is to take an aptitude test. Aptitude tests are easy to take, because you don't have to worry about giving wrong answers. Aptitude tests just tell what you are best at doing. That is, they tell you that you have an ability to do some things better than others. When you know what your abilities are, then you know what kinds of jobs you might be good at.

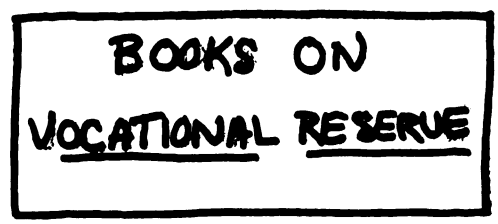
***** ***** ***** ***** *****

The young man liked this idea, so he followed the directions on the form. He signed where it asked if he would be interested in taking an aptitude test. Then, he took it to the Counseling Office and put it in the "REQUEST BOX."

***** ***** ***** ***** ***** ***** *****

Later, he was told that the local State Employment Service office gives aptitude tests. So he went there and asked to take an aptitude test. Afterwards, a counselor there told him the test showed that he was good at working with words and numbers, but not so good at working with his hands. This information was very helpful in his planning for the kind of work or training he might choose after finishing high school.

********** ********** **********
********** ********** **********

He had also noticed, in his envelope of information, a form with a list of books, 

It said that the books on the list had been placed on "Vocational Reserve" in the school library. The books were supposed to contain information for career planning. To check out one of the books, you had to mark the one you wanted on the form and give it to the librarian. So, he went to the library. He marked the one he wanted and gave the form to the librarian, who took it and found the book. She told him he could keep it for one hour. So, he checked the book out by signing the card she gave him.

***** ***** ***** ***** *****

He found a quiet place and sat down to read. Since he had only two hours, he naturally couldn't read the whole book. So he picked a chapter about important steps in making decisions and he read it. He thought that he picked up some good ideas that he could put to use as he continued to work out his future plans.

********** ********** **********
********** ********** **********

One thing he decided was that students like himself can usually make better, more sensible plans if they get more information about jobs, education and training. While the other information was helpful, he felt that the more he could get, the better off he'd be.

His envelope of information contained a post card which said

something about this. He read his and saw that it could be used to help him get more information.

He wrote his name and address on the back. The other address was already printed on the front. It said that, if he mailed it, he would receive a list of places offering job and training information. Then he put the card in a mail box.

A few days later, he received the list of those places, just as it had said on the card. When he had time later, he wrote to some of them and asked for certain vocational and educational information. He got several pamphlets and other materials back, and these, too, helped him answer his questions about the future.

***** ***** ***** *****
***** ***** ***** *****
***** ***** ***** *****

He thought about all of the information he had, and about the different ways he had collected it:

1. He had asked for an appointment with a counselor.
2. He had gotten the government training program booklet.
3. He had signed the form for the aptitude test.
4. He had checked out one of the special reserve books.
5. He had mailed the post card.

He told his friends about the different ways he had gotten such information for planning his future. He knew now what he was going to do after he graduated, because he had used all of the vocational and educational facts he had gathered and was then able to decide whether to try to get more training or to try to get a job.

He felt so good about having these questions answered that he even did a better job in school than he had been doing before.

All in all, he was pretty satisfied with his experiences in collecting information in several different ways.

APPENDIX D

BLACK ADULT MODEL BOOKLET

(TREATMENT 3)

CAREER

INFORMATION

DIRECTIONS: Read the directions below, while they are being read aloud.

1..... Today, instead of having your regular class, we're going to do something different.

2..... It is your job to read this booklet, and try to remember what it tells about.

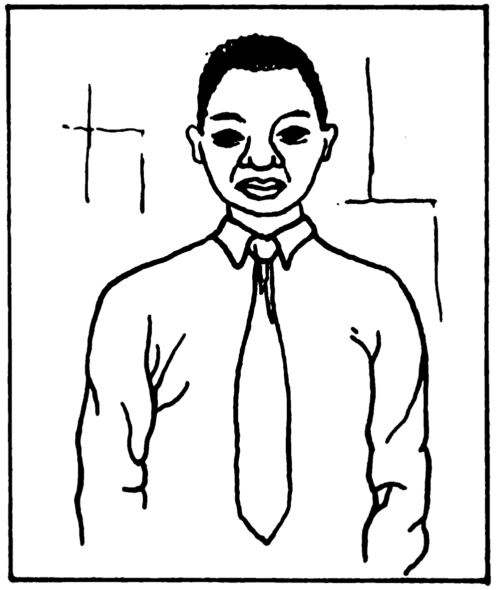
That's all you have to do. Just read the booklet.

3..... You may have the rest of the class period to read the booklet.

4..... The booklets will be collected when everyone is finished.

5..... Now, turn the page and start reading.

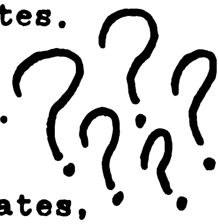
This booklet tells a story about a man who is a student in a community college. This man, whom you can see in the drawing, is several years older than you.



The man is black, just like you. So, he's like you in one way, but not like you in another. That is, he's the same race, but he's several years older.

*********** ********** ********** *********** ********** **********

The man is about half-way through his program at the community college. Since his program there is pretty general, he's been doing some thinking about what he's going to do when he graduates. He has a lot of questions in his mind that need to be answered. For example, he had thought about getting a job after he graduates, but he also thought about maybe going on for more education and training, if he could get it.



After talking with some of his friends about their plans,

he found that most of them had just as many questions as he did (and not very many answers). They were wondering about their futures, too.

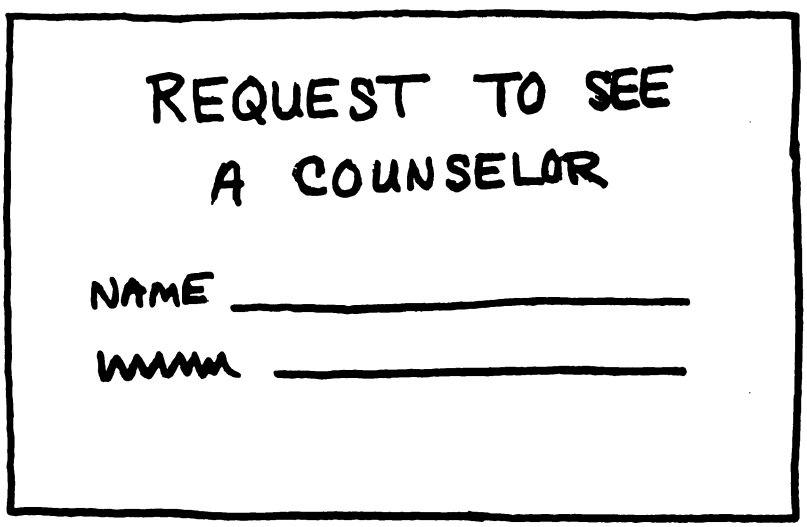
****

He finally decided he'd better start doing something to get some answers to his questions. It was time for ACTION!!!!!!!!!

****

His school had a Counseling Office, and it seemed logical that a counselor could help. A few days before, an envelope full of information

had been handed out to each student in one of his classes. He remembered seeing something in it about the school counselors being available for appointments. In his envelope was a form which a student could fill out to ask for an appointment with one of the counselors.



The man filled out the form. Then he followed the directions on it, telling him to put the form in the "REQUEST BOX" in the Counseling Office.

*****
*****
*****
*****
*****
*****
*****

In a few days, the man found that filling out the form and returning it to the Counseling Office had paid off. He got an appointment with a counselor, who was very interested and told him that it was a good time to do some planning. He asked the counselor a lot of questions about jobs and his chances of getting more education and training after graduation. The counselor answered many of the questions, so afterwards the man felt that he was able to do a better job of planning his future than before.

****

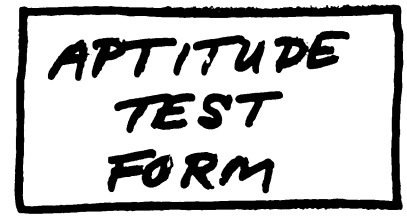
He also remembered reading something in the envelope of information about some booklets which tell about some government training programs. The information

said these booklets were available at the Counseling Office, so he asked the counselor about them. The counselor knew what the man was asking about. He took him to the Counseling Office secretary, who kept the supply of booklets.

The man asked for one of the booklets, and then he signed his name on a special sheet. This had to be signed by everyone who got one of the booklets, so they could tell when they had to order more.

********** ********** **********
********** ********** **********

As soon as he got a chance, he sat down and read the booklet. He was pretty excited when he finished, because it seemed as if he might fit into some of the training programs. Some of them looked like really good chances for him to learn special skills, or to go on to college for a full four-year degree. So, checking out the booklet paid off, too. Again, it helped him in planning his future.



Everyone had also been given a special form which was supposed to be helpful to a student who is planning his life after graduation. Students sometimes find it helpful to know more about themselves, so they can make more sensible decisions and plans. One way to learn more about yourself is to take an aptitude test. Aptitude tests are easy to take, because you don't have to worry about giving wrong answers. Aptitude tests just tell what you are best at doing. That is, they tell you that you have an ability to do some things better than others. When you know what your abilities are, then you know what kinds of jobs you might be good at.

***** ***** ***** ***** *****

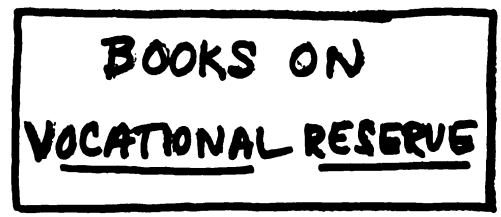
The man liked this idea, so he followed the directions on the form. He signed where it asked if he would be interested in taking an aptitude test. Then, he took it to the Counseling Office and put it in the "REQUEST BOX."

***** ***** ***** ***** ***** ***** *****

Later, he was told that the local State Employment Service office gives aptitude tests. So he went there and asked to take an aptitude test. Afterwards, a counselor there told him the test showed that he was good at working with words and numbers, but not so good at working with his hands. This information was very helpful in his planning for the kind of work or training he might choose after finishing at the community college.

********** ********** **********
********** ********** **********

He had also noticed, in his envelope of information, a form with a list of books. It said that the books on the



list had been placed on "Vocational Reserve" in the school library. The books were supposed to contain information for career planning. To check out one of the books, you had to mark the one you wanted on the form and give it to the librarian. So, he went to the library. He marked the one he wanted and gave the form to the librarian, who took it and found the book. She told him he could keep it for one hour. So, he checked the book out by signing the card she gave him.

***** ***** ***** ***** *****

He found a quiet place and sat down to read. Since he had only two hours, he naturally couldn't read the whole book. So he picked a chapter about important steps in making decisions and he read it. He thought that he picked up some good ideas that he could put to use as he continued to work out his future plans.

********** ********** **********
********** ********** **********

One thing he decided was that students like himself can usually make better, more sensible plans if they get more information about jobs, education and training. While the other information was helpful, he felt that the more he could get, the better off he'd be.

His envelope of information contained a post card which said

something about this. He read his and saw that it could be used to help him get more information.

He wrote his name and address on the back. The other address was already printed on the front. It said that, if he mailed it, he would receive a list of places offering job and training information. Then he put the card in a mail box.

***** ***** ***** ***** ***** ***** *****

A few days later, he received the list of those places, just as it had said on the card. When he had time later, he wrote to some of them and asked for certain vocational and educational information. He got several pamphlets and other materials back, and these, too, helped him answer his questions about the future.

***** ***** ***** *****
***** ***** ***** *****
***** ***** ***** *****

He thought about all of the information he had, and about the different ways he had collected it:

1. He had asked for an appointment with a counselor.
2. He had gotten the government training program booklet.
3. He had signed the form for the aptitude test.
4. He had checked out one of the special reserve books.
5. He had mailed the post card.

He told his friends about the different ways he had gotten such information for planning his future. He knew now what he was going to do after he graduated, because he had used all of the vocational and educational facts he had gathered and was then able to decide whether to try to get more training or to try to get a job.

He felt so good about having these questions answered that he even did a better job in school than he had been doing before.

All in all, he was pretty satisfied with his experiences in collecting information in several different ways.

APPENDIX E

WHITE ADULT MODEL BOOKLET

(TREATMENT 4)

CAREER

INFORMATION

DIRECTIONS: Read the directions below, while they are being read aloud.

1..... Today, instead of having your regular class, we're going to do something different.

2..... It is your job to read this booklet, and try to remember what it tells about.

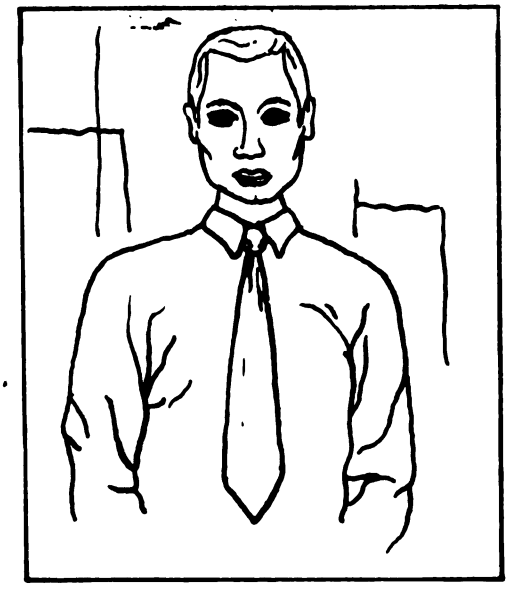
That's all you have to do. Just read the booklet.

3..... You may have the rest of the class period to read the booklet.

4..... The booklets will be collected when everyone is finished.

5..... Now, turn the page and start reading.

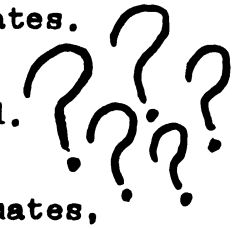
This booklet tells a story about a man who is a student in a community college. This man, whom you can see in the drawing, is several years older than you.



The man in the story is white. So, he's really not very much like you. That is, he's not the same race, and he's several years older, too. No, he's not very much like you.

********** ********** **********
********** ********** **********

The man is about half-way through his program at the community college. Since his program there is pretty general, he's been doing some thinking about what he's going to do when he graduates. He has a lot of questions in his mind that need to be answered. For example, he had thought about getting a job after he graduates, but he also thought about maybe going on for more education and training, if he could get it.



After talking with some of his friends about their plans,

he found that most of them had just as many questions as he did (and not very many answers). They were wondering about their futures, too.

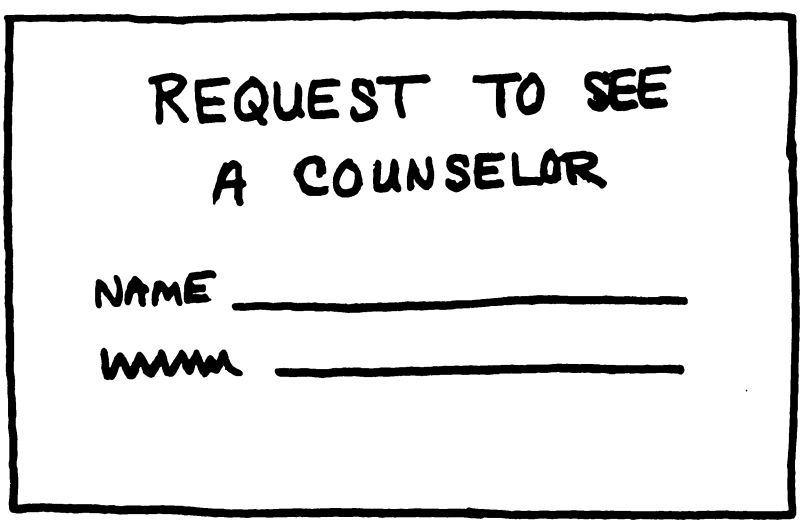
****

He finally decided he'd better start doing something to get some answers to his questions. It was time for ACTION!!!!!!!!!

****

His school had a Counseling Office, and it seemed logical that a counselor could help. A few days before, an envelope full of information

had been handed out to each student in one of his classes. He remembered seeing something in it about the school counselors being available for appointments. In his envelope was a form which a student could fill out to ask for an appointment with one of the counselors.



The man filled out the form. Then he followed the directions on it, telling him to put the form in the "REQUEST BOX" in the Counseling Office.

*****
*****
*****
*****
*****
*****
*****

In a few days, the man found that filling out the form and returning it to the Counseling Office had paid off. He got an appointment with a counselor, who was very interested and told him that it was a good time to do some planning. He asked the counselor a lot of questions about jobs and his chances of getting more education and training after graduation. The counselor answered many of the questions, so afterwards the man felt that he was able to do a better job of planning his future than before.

****

He also remembered reading something in the envelope of information about some booklets

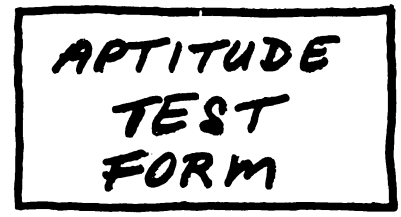
which tell about some government training programs. The information

said these booklets were available at the Counseling Office, so he asked the counselor about them. The counselor knew what the man was asking about. He took him to the Counseling Office secretary, who kept the supply of booklets.

The man asked for one of the booklets, and then he signed his name on a special sheet. This had to be signed by everyone who got one of the booklets, so they could tell when they had to order more.

********** ********** **********
********** ********** **********

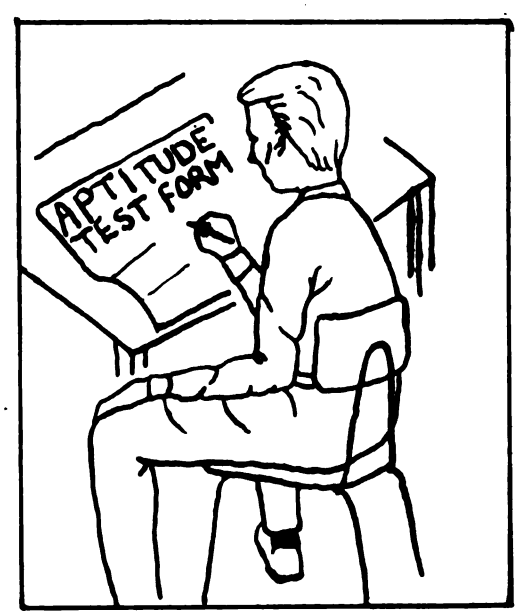
As soon as he got a chance, he sat down and read the booklet. He was pretty excited when he finished, because it seemed as if he might fit into some of the training programs. Some of them looked like really good chances for him to learn special skills, or to go on to college for a full four-year degree. So, checking out the booklet paid off, too. Again, it helped him in planning his future.



Everyone had also been given a special form which was supposed to be helpful to a student who is planning his life after graduation. Students sometimes find it helpful to know more about themselves, so they can make more sensible decisions and plans. One way to learn more about yourself is to take an aptitude test. Aptitude tests are easy to take, because you don't have to worry about giving wrong answers. Aptitude tests just tell what you are best at doing. That is, they tell you that you have an ability to do some things better than others. When you know what your abilities are, then you know what kinds of jobs you might be good at.

***** ***** ***** ***** *****

The man liked this idea, so he followed the directions on the form. He signed where it asked if he would be interested in taking an aptitude test. Then, he took it to the Counseling Office and put it in the "REQUEST BOX."

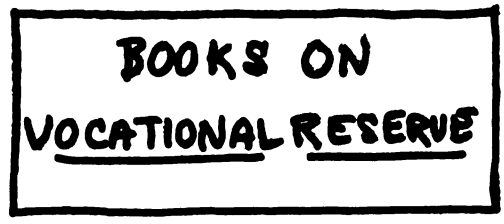


***** ***** ***** ***** ***** ***** *****

Later, he was told that the local State Employment Service office gives aptitude tests. So he went there and asked to take an aptitude test. Afterwards, a counselor there told him the test showed that he was good at working with words and numbers, but not so good at working with his hands. This information was very helpful in his planning for the kind of work or training he might choose after finishing at the community college.

********** ********** **********
********** ********** **********

He had also noticed, in his envelope of information, a form with a list of books. It said that the books on the



list had been placed on "Vocational Reserve" in the school library. The books were supposed to contain information for career planning. To check out one of the books, you had to mark the one you wanted on the form and give it to the librarian. So, he went to the library. He marked the one he wanted and gave the form to the librarian, who took it and found the book. She told him he could keep it for one hour. So, he checked the book out by signing the card she gave him.

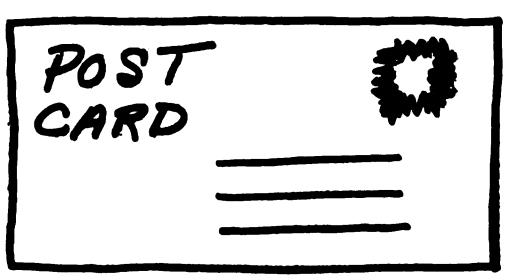
***** ***** ***** ***** *****

He found a quiet place and sat down to read. Since he had only two hours, he naturally couldn't read the whole book. Se he picked a chapter about important steps in making decisions and he read it. He thought that he picked up some good ideas that he could put to use as he continued to work out his future plans.

********** ********** ********* ********** ********** **********

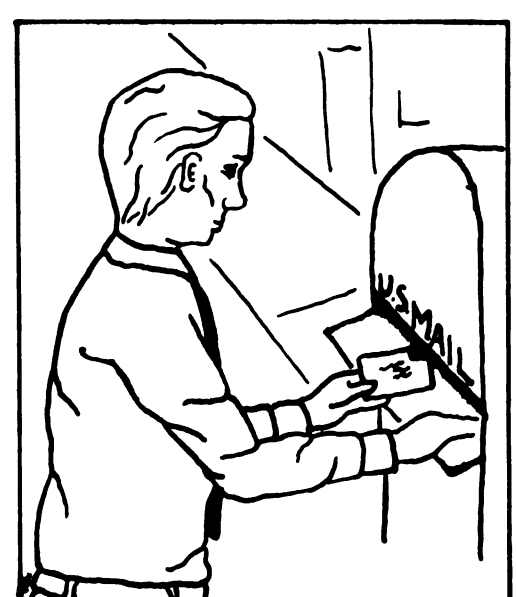
One thing he decided was that students like himself can usually make better, more sensible plans if they get more information about jobs, education and training. While the other information was helpful, he felt that the more he could get, the better off he'd be.

His envelope of information contained a post card which said



something about this. He read his and saw that it could be used to help him get more information.

He wrote his name and address on the back. The other address was already printed on the front. It said that, if he mailed it, he would receive a list of places offering job and training information. Then he put the card in a mail box.



A few days later, he received the list of those places, just as it had said on the card. When he had time later, he wrote to some of them and asked for certain vocational and educational information. He got several pamphlets and other materials back, and these, too, helped him answer his questions about the future.

***** ***** ***** *****
***** ***** ***** *****
***** ***** ***** *****

He thought about all of the information he had, and about the different ways he had collected it:

1. He had asked for an appointment with a counselor.
2. He had gotten the government training program booklet.
3. He had signed the form for the aptitude test.
4. He had checked out one of the special reserve books.
5. He had mailed the post card.

He told his friends about the different ways he had gotten such information for planning his future. He knew now what he was going to do after he graduated, because he had used all of the vocational and educational facts he had gathered and was then able to decide whether to try to get more training or to try to get a job.

He felt so good about having these questions answered that he even did a better job in school than he had been doing before.

All in all, he was pretty satisfied with his experiences in collecting information in several different ways.

APPENDIX F

CONTROL GROUP BOOKLET

(TREATMENT 5)

CAREER

INFORMATION

DIRECTIONS: Read the directions below, while they are being read aloud.

1..... Today, instead of having your regular class, we're going to do something different.

2..... It is your job to read this booklet, and try to remember what it tells about.

That's all you have to do. Just read the booklet.

3..... You may have the rest of the class period to read the booklet.

4..... The booklets will be collected when everyone is finished.

5..... Now, turn the page and start reading.

INTRODUCTION

This booklet contains a large amount of information about several different fields of work. Since most people end up working a long period of their lives, information about the many fields of work is interesting to just about everyone.

The fields you will learn about as you read this booklet include: professional, managerial, clerical, sales, service, skilled and other manual occupations. We'll start with a look at professional occupations.

PROFESSIONAL OCCUPATIONS

Professional occupations have many attractions for young people choosing a career. These occupations offer opportunities for interesting and responsible work and, in many cases, lead to high earnings. As a rule, however, they can be entered only after long periods of specialized education or other preparation, because a broad knowledge of one's field is an essential requirement for success in these types of work.

About 1 out of 8 workers in 1966 was in a professional and related occupation. These occupations--employing more than 9.3 million people--accounted for more than one-fourth of all white-collar jobs.

The professions generally require either college graduation--often with an advanced degree--or experience of such kind and amount to provide comparable knowledge. Most professional occupations, such as engineer, architect, physician, lawyer, and teacher, require specialized, theoretical knowledge. Others, such as editor and actor, demand creative talents and, also, skills gained through experience.

It is not easy to prepare for and enter professional work. Often, institutions do not accept applicants for professional training unless their school grades are high, and employers generally give preference to graduates whose grades are high in their class.

Closely related to the professions is a wide variety of technical occupations. Some of their job titles include: draftsman, engineering aid, programmer, and electronics, lab or X-ray technician.

Employment Trends

Employment in professional and related occupations has risen rapidly over the years. During the 1950s, the rate of growth in the professions was more than twice that for clerical workers, the second fastest growing occupational group at that time. Between 1966 and 1975, employment in the professional and technical group is expected to rise by nearly 40 percent--about twice the rate for total employment.

Educational Trends

College graduates are now filling many positions which did not exist a few decades ago or which formerly were held by employees because of their experience and personal characteristics. Emphasis on a college education for many professional jobs will be reinforced in the years ahead.

MANAGERIAL OCCUPATIONS

The success or failure of business enterprises probably depends more on the way managers do their job than on anything else. Nearly 4.7 million salaried workers--85 percent of whom were men--were employed in 1966 to manage the business activities of our

nation's enterprises. Business managers are one of the fastest growing occupational groups in the country. Between 1957 and 1966, the number of salaried management workers increased nearly four times as fast as all workers.

Nature of Work

Salaried managers usually have one prime aim: to get a job done by directing or planning the work of others. Some, however, are chiefly policymakers.

First-level management positions are either supervisory or trainee. Supervisors, the largest group, direct workers in activities such as sales, research, production, accounting, and purchasing. A department manager in a retail department store, for example, has a typical supervisory job. He may supervise up to 50 employees or more. Manager trainees, also in the first management level, are sometimes assigned as assistants to managers; or they may be placed for short periods in a number of different jobs in one or more departments in order to learn several phases of the business.

Higher in the managerial pyramid are the middle-level managers; they have the top posts in such large and important departments as sales, accounting, purchasing and personnel.

Top level managers make decisions on what products their firms should develop and produce in the years ahead, whether and where new plants should be built, and how to finance them. This top group includes the board of directors, the vice president, and the president or chairman of the board of directors.

Training and Advancement

Employers increasingly are requiring beginning managers to have completed college. Although it is possible for an able person who doesn't have a degree to work his way up through the ranks, his promotional opportunities may be limited. For most beginning management jobs, many employers look for individuals who have a college degree in business administration, with a major in accounting, economics, or finance.

Employment Outlook

Management career opportunities should be good through the 1970s. Employment of managers is expected to grow rapidly through the 1970s; moreover, many thousands of openings are expected to result annually from the need to replace people who retire, die, or leave the field for other reasons.

Starting salaries for management trainees with bachelor's degrees generally range, in private industry, from $6000 to $7200, and in the federal government, from $5300 to $6400. Trainees with master's degrees generally begain at about $6400 to $9600. The upper level management jobs range from about $10,000 to as high as $200,000.

CLERICAL OCCUPATIONS

Almost 12 million people were employed in clerical or some closely related kind of work in early 1966. A great many of these workers keep records and do other paperwork required in present-day offices. Others handle communications through mail, telephone, telegraph, and messenger services; attend to shipping and receiving of merchandise; and ring up sales on cash registers.

Training and Advancement

For all but the most routine clerical positions, the minimum educational requirement is usually graduation from high school. High school graduates who have had instruction in business subjects are regarded by most employers as particularly well qualified. Reading comprehension, a knowledge of spelling and grammar, and ability in arithmetic are important for many types of clerical work. Some employers test applicants for clerical aptitude. Practically all beginning clerical workers receive some on-the-job training.

Many types of clerical work offer good prospects for job advancement. Some of the better paid positions--insurance claim adjuster and executive secretary, for example--require a general knowledge of company policies and procedures, and are very often filled by promotion from within. In other instances, promotion may be to more difficult and higher paid assignments in a related typed of work, as in the case of a keypunch operator who is selected and trained to operate a tabulating machine.

Employment Outlook

Employment in clerical occupations is expected to rise moderately through the 1970s. As employment rises to meet the needs of an expanding economy, more than 325,000 new positions in clerical and related occupations will be added each year. Opportunities will be particularly numberous for workers who handle paperwork in the offices of private and public organizations--secretaries, stenographers, typists, and bookkeeping and accounting clerks.

A 1965-66 survey showed that men were generaly paid higher salaries than women in clerical jobs. For example, men employed as

accounting clerks averaged nearly $20 a week more than women in the same kinds of jobs. The survey showed women file clerks earned about $61.50 a week, while women working as skilled tabulating machine operators earned about $112.50. Office workers in large cities generally receive pay for 5 holidays or more a year and for 1 or 2 weeks of annual vacation after working 1 year.

SALES OCCUPATIONS

Saleswork offers career opportunities for young people who have not completed high school as well as for those who have a college degree; for men and women who like to travel and those who do not; and for people who want salaried employment as well as those who aspire to run their own businesses.

Workers in this occupational group sell for manufacturers, insurance companies, and other producers of goods and services; for wholesalers who stock large quantities of goods so that smaller lots may be purchased and resold by retail stores; and for drugstores, dress shops, and other retailers who deal directly with the public. About 4.8 million workers were employed in sales occupations in 1966. About one-fourth of them were part-time employees who usually worked fewer than 35 hours a week.

Training and Advancement

Training requirements for different kinds of saleswork--like the work itself--vary greatly. Thousands of salespersons have routine jobs selling standardized merchandise such as magazines, candy, cigarettes, and cosmetics. Employers seldom require salespeople in such jobs to have specialized training. The salesman who sells complex

products or services--electronic equipment or liability insurance, for example--sometimes receives training which lasts many months. In almost all sales work, except retail stores, the successful salesman must have the initiative to locate his own prospective customers and be able to understand their needs. He should have energy, self-confidence, imagination and the ability to communicate well.

Employment Outlook

Through the 1970s, employment in sales occupations is expected to rise moderately. Openings created by growth and vacancies which must be filled as salesworkers retire or stop working for other reasons are expected to result in a need for more than 275,000 workers each year. As employment rises, the proportion of part-time workers--already higher than in most occupational groups--is also likely to increase. In the growing number of suburban shopping centers, particularly where many retail stores remain open for business several nights a week, a larger proportion of the sales force is likely to be made up of part-time workers employed only on Saturdays and during evening shopping hours.

SERVICE OCCUPATIONS

The service occupations are made up of workers who police the streets, serve food, put out fires, help to clean out homes and buildings, and otherwise provide services to people. The nearly 9.7 million service workers employed in 1966 included such occupations as babysitters, policemen, firemen, cleaning women, golf caddies, theatre ushers, barbers, and laundresses.

Training and Advancement

Training and skill requirements differ greatly. FBI agents,

for example, must have a college degree. Barbers, beauty operators, and some other workers need specialized vocational training. Other jobs, such as general maid, waitress, elevator operator, and hotel bellman, usually require no formal education.

Some service workers eventually go into business for themselves--as caterers or restaurant operators, for example. Others, such as elevator operators and ushers, may work up to supervisory positions.

Employment Outlook

Most of the employment increase in future years in service jobs is expected to be among policemen and other protective service workers; attendants in hospitals and in businesses rendering professional and personal services; beauty operators; and cooks, waiters, and others who prepare and serve meals outside private homes.

SKILLED WORKERS

Skilled workers make the patterns, models, tools, dies, and equipment without which industrial processes could not be carried out by semiskilled and unskilled workers. They repair the equipment used by industry, and the appliances used by consumers. They also build homes, commercial and industrial buildings, and highways.

Skilled workers must have a thorough knowledge of their work. Training programs usually are either on-the-job training, apprenticeships, or in vocational schools. The formal apprenticeship appears to work the best, usually lasting from 3 to 6 years.

Many skilled jobs offer high salaries. Young men who get a good basic education (especially in math and science), as well as thorough job training, will be better prepared to compete for these jobs.

SEMISKILLED WORKERS

Semiskilled workers generally work with their hands, many of them using handtools such as screwdrivers, pliers, files, soldering irons and cutting tools. Many are engaged in making clothing, autos, food, textiles, machinery and electrical equipment. Truckdrivers are the largest group of semiskilled workers, and large numbers also are employed as assemblers and inspectors.

Semiskilled workers ordinarily receive only brief on-the-job training. Usually they are told exactly what to do and how to do it, and their work is supervised closely. These jobs often pay well, but the average annual earnings of semiskilled men in 1965 were about $1000 less than those of skilled men. Young men who have no training beyond high school will continue to find jobs in this field, although those with ability should obtain additional training to enter other fields which are expected to grow more rapidly.

UNSKILLED WORKERS

Unskilled laborers work in manual occupations that generally require no special training. Frequently, these jobs involve handling and moving materials, loading or unloading, digging, hauling, or lifting. Although some of these jobs pay well, such as in construction work, the average annual earnings of unskilled men in 1965 were about $1350 less than semiskilled men. Also, unskilled workers are usually the first to lose their jobs. Machines are taking over many of these jobs. While there will continue to be some jobs for unskilled workers, in the future total employment in this group is expected to show little change.

APPENDIX G

SAMPLE OF POSTCARD

SAMPLE OF POSTCARD

Please send me a list of places where I can write for vocational and educational information. Send the list to me at:

NAME: _____

STREET AND NUMBER: _____

CITY: _____

APPENDIX H

COUNSELOR APPOINTMENT FORM

Request to See a Counselor

DIRECTIONS: To get an appointment with a counselor, fill in the information asked for below:

1. Your Name _____

2. Time you would like to see a counselor: (Day) _____

   (Hour) _____

3. Return this form to the Counseling Office, if you want to see a counselor.

4. Put this form in the "REQUEST BOX" in Room 104.

APPENDIX I

LIST OF BOOKS ON RESERVE

Books on Vocational Reserve

DIRECTIONS: To check out one of the books listed below:

1. Mark an "X" by the title of the book you want to see.
2. Give this form to the librarian and tell her it's for the special Vocational Reserve.
3. Sign the card which the librarian will give you.

_____ Success and What It Takes--Edsall

_____ Is My Job for you?--Gardner

_____ Choosing A Career in A Changing World--Westervelt

_____ From High School to A Job--Paradis

_____ You and the Next Decade--Paradis

_____ Your Career if You're Not Going to College--Splaver

_____ Encyclopedia of Careers, Vol. I, Planning Your Career

_____ Occupational Outlook Handbook, 1968-69 Edition

APPENDIX J

INFORMATION ABOUT THE PAMPHLET ON GOVERNMENT TRAINING PROGRAMS

For anyone who is interested, the Counseling Office has available a supply of pamphlets which tell about several government training programs.

These pamphlets may be picked up at the Counseling Office by asking for the "special pamphlet about government training programs." See Mr. McMillen's secretary in Room 104.

APPENDIX K

FORM TO EXPRESS INTEREST

IN AN APTITUDE TEST

Interest in Taking an Aptitude Test

DIRECTIONS: 1. If you are interested in taking an aptitude test, first sign here

_____

2. Then, return this form to the Counseling Office, after you have signed above.
3. Put this form in the "REQUEST BOX" in Room 104.

APPENDIX L

VOCATIONAL PLANNING STRATEGIES MEASURE

NAME: _____

DIRECTIONS: Someone wants to know how he can get some vocational and educational information. Write below as many different ways of finding vocational and educational information as you would be able to tell him. Number each of the ways you write down.

APPENDIX M

PERCEIVED SIMILARITIES TEST

DIRECTIONS: 10 activities are listed below, such as the EXAMPLE, "PLAY BASKETBALL." Below each activity are two rows of numbers. Look at the EXAMPLE: "PLAY BASKETBALL."

First: If you like to play basketball "very much," you would circle the number "1" in the first row.

Second: If you think the person you read about in the "Career Information" booklet a few days ago would like to play basketball "as much as most people," you would circle the number "3" in the second row.

EXAMPLE: PLAY BASKETBALL

I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

Now, do the same for each of the 10 activities listed below. Remember to circle one number in each row of numbers.

1. SEE MOVIES

I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

2. GO TO SCHOOL

I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

3. PLAY DIFFERENT SPORTS

I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

4. WORK AT A JOB

I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

5. LISTENING TO MUSIC

I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

6. DANCING I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5
7. READ BOOKS I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5
8. TALK TO FRIENDS I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5
9. DRIVE A CAR I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5
10. PLAY FOOTBALL I like it:	1	2	3	4	5
	Very much	More than most people	As much as most people	Less than most people	Not at all
Person I read about likes it:	1	2	3	4	5

APPENDIX N

RAW DATA

(FREQUENCIES OF INFORMATION-SEEKING BEHAVIORS, VOCATIONAL PLANNING STRATEGIES--TOTAL AND MODELED, AND GRADE-POINT AVERAGES)

S	Treat-ment	VPS-Total	VPS-Modeled	Couns. Appt.	Post Card	Aptde. Test	Books	Pamph-let	FISB Total	GPA
001	1	5	1	0	0	0	0	0	0	3.29
002	1	4	3	1	1	1	0	0	3	2.89
003	1	4	1	0	0	0	0	0	0	2.86
004	1	5	3	0	0	0	0	0	0	2.79
005	1	2	0	0	0	0	0	0	0	2.70
006	1	0	0	0	0	0	0	0	0	2.45
007	1	3	3	0	0	0	0	0	0	2.33
008	1	3	3	0	0	0	0	0	0	2.30
009	1	3	2	0	0	1	0	0	1	2.22
010	1	4	2	1	1	0	0	0	2	2.21
011	1	4	1	0	0	1	0	0	1	1.75
012	1	3	2	0	0	1	0	0	1	1.75
013	1	4	2	0	0	0	0	0	0	1.50
014	1	0	0	0	0	0	0	0	0	1.47
015	1	4	3	0	0	0	0	0	0	1.43
016	1	3	1	0	0	0	0	0	0	1.37
017	1	5	3	1	1	0	0	0	2	1.25
018	1	3	1	0	0	0	0	0	0	1.11
019	1	5	2	0	0	0	0	0	0	1.10
020	1	1	1	0	0	0	0	0	0	1.00
021	1	4	1	0	1	0	0	0	1	0.87
022	2	3	2	0	0	0	0	0	0	3.29
023	2	3	1	1	0	0	0	0	1	2.87
024	2	4	1	0	0	0	0	0	0	2.75
025	2	4	1	0	0	0	0	0	0	2.62
026	2	1	1	0	0	0	0	0	0	2.22
027	2	4	0	0	1	0	0	0	1	2.00
028	2	4	3	1	1	0	0	0	2	1.87
029	2	5	3	0	0	0	0	0	0	1.87
030	2	2	2	0	1	1	0	0	2	1.75
031	2	2	1	0	0	0	0	0	0	1.71
032	2	3	1	0	0	0	0	0	0	1.62
033	2	1	1	0	0	0	0	0	0	1.50
034	2	0	0	0	0	0	0	0	0	1.50
035	2	3	3	0	0	1	0	0	1	1.44
036	2	2	2	0	0	0	0	0	0	1.44
037	2	0	0	0	0	0	0	0	0	1.43
038	2	2	1	0	0	0	0	0	0	1.42
039	2	0	0	0	1	0	0	0	1	1.37
040	2	3	1	0	0	0	0	0	0	1.12
041	2	1	1	0	0	0	0	0	0	1.00
042	2	1	1	0	0	0	0	0	0	1.00
043	3	7	2	0	0	0	0	0	0	3.86
044	3	5	3	0	0	0	0	0	0	3.00
045	3	3	2	0	0	0	0	0	0	2.90
046	3	2	2	0	0	0	0	0	0	2.86
047	3	5	1	0	0	0	0	0	0	2.40
048	3	3	3	0	0	0	0	0	0	2.25
049	3	3	1	0	0	0	0	0	0	2.25
050	3	0	0	0	0	0	0	0	0	2.14
051	3	3	3	0	0	0	0	0	0	2.00
052	3	4	3	0	1	1	0	0	3	2.00
053	3	2	1	0	0	0	0	0	0	1.75
054	3	4	2	0	0	0	0	0	0	1.71
055	3	0	0	0	1	1	0	0	2	1.62

S	Treat-ment	VPS Total	VPS-Modeled	Couns. Appt.	Post Card	Aptde. Test	Books	Pamph-let	FISB Total	GPA
056	3	0	0	0	0	0	0	0	0	1.50
057	3	3	2	0	0	0	0	0	0	1.50
058	3	0	0	1	0	1	0	0	2	1.37
059	3	4	2	0	0	0	0	0	0	1.33
060	3	2	2	0	0	0	0	0	0	1.25
061	3	0	0	0	0	0	0	0	0	1.11
062	3	0	0	0	0	1	0	0	1	0.87
063	3	1	1	0	0	1	0	0	1	0.75
064	4	3	2	0	0	0	0	0	0	3.43
065	4	4	1	0	0	0	0	0	0	3.14
066	4	4	4	0	0	0	0	0	0	3.12
067	4	5	3	0	1	0	0	0	1	2.62
068	4	3	2	1	0	0	0	0	1	2.62
069	4	3	3	0	1	0	0	0	1	2.50
070	4	4	1	0	0	0	0	0	0	2.43
071	4	2	0	0	0	0	0	0	0	2.43
072	4	4	2	0	0	0	0	0	0	2.37
073	4	1	1	0	0	0	0	0	0	1.83
074	4	0	0	0	1	1	0	0	2	1.80
075	4	4	2	0	0	0	0	0	0	1.75
076	4	0	0	0	0	0	0	0	0	1.50
077	4	0	0	0	0	0	0	0	0	1.50
078	4	2	0	0	0	0	0	0	0	1.45
079	4	3	1	0	0	1	0	0	1	1.37
080	4	3	1	0	0	0	0	0	0	1.25
081	4	4	1	0	0	0	0	0	0	1.12
082	4	0	0	0	0	0	0	0	0	1.00
083	4	3	2	0	0	0	0	0	0	0.85
084	4	1	1	0	0	0	0	0	0	0.62
085	5	4	1	0	0	0	0	0	0	3.71
086	5	5	2	0	0	0	0	0	0	3.37
087	5	0	0	0	0	0	0	0	0	3.22
088	5	5	1	0	0	0	0	0	0	3.00
089	5	0	0	0	0	0	0	0	0	2.87
090	5	4	1	0	0	0	0	0	0	2.44
091	5	0	0	0	0	1	0	0	1	2.29
092	5	3	1	0	0	0	0	0	0	2.25
093	5	3	1	0	0	0	0	0	0	2.00
094	5	3	0	0	0	0	0	0	0	2.00
095	5	0	0	0	0	0	0	0	0	1.87
096	5	0	0	0	0	0	0	0	0	1.67
097	5	0	0	0	0	0	0	0	0	1.72
098	5	0	0	0	0	0	0	0	0	1.40
099	5	1	1	0	0	0	0	0	0	1.25
100	5	1	1	0	0	0	0	0	0	1.12
101	5	0	0	0	0	0	0	0	0	1.12
102	5	0	0	0	0	0	0	0	0	1.00
103	5	0	0	0	0	0	0	0	0	1.00
104	5	1	1	0	0	0	0	0	0	0.62
105	5	4	1	0	0	0	0	0	0	0.43

APPENDIX O

COVARIATE CORRELATION MATRICES

Sample Correlation Matrix

	VPST	VPSM	FISB	GPA
VPST	1.000000			
VPSM	0.619509	1.000000		
FISB	0.020267	0.143859	1.000000	
GPA	0.327494	0.184942	-0.099657	1.000000

Matrix of Correlations With Covariate Eliminated

	VPST	VPSM	FISB
VPST	1.000000		
VPSM	0.601948	1.000000	
FISB	0.056272	0.165965	1.000000