THE EFFECTS ON THEMATIC APPERCEPTION OF CERTAIN EXPERIMENTALLY AROUSED NEEDS

by

William F. Field

Thesis submitted to the Faculty of the Graduate School of the University of Maryland in partial fulfillment of the requirements for the degree of Doctor of Philosophy

1951

UMI Number: DP70344

All rights reserved

INFORMATION TO ALL USERS
The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript
and there are missing pages, these will be noted. Also, if material had to be removed,
a note will indicate the deletion.



UMI DP70344
Published by ProQuest LLC (2015). Copyright in the Dissertation held by the Author.
Microform Edition © ProQuest LLC.
All rights reserved. This work is protected against
unauthorized copying under Title 17, United States Code



ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

ACKNOWLEDGEMENTS

A most gratifying experience associated with the preparation of this thesis has been the cooperation of the many other persons who aided in making the research possible. The writer would like to express appreciation to:

Dr. T. G. Andrews, who, in his capacity as Head, Department of Psychology of the University of Maryland, expedited the completion of this investigation in many ways.

Those individuals who made available class groups for the experiments and who assisted in the experimental procedures. They are: Dr. E. L. Phillips, George Washington University; Dr. C. H. Haagen, Muhlenberg College; Dr. D. E. Buzby, Beaver College; Mr. A. W. Fisher, Beaver College; and Mr. R. M. Brandt, University of Delaware.

The graduate students of the Department of Psychology, University of Maryland, who volunteered time and energy in the administration of the experimental procedures and in the treatment of the data. They are: Mrs. F. H. Breese and Messrs. Sidney Gelfand, H. W. Hembree, W. A. Lybrand, R. N. Shevitz, and Solomon Shapiro.

Mrs. Luella M. Rosenkrans, for her patient assistance in preparing and typing the final thesis copy.

The members of the thesis committee, Dr. Arthur W. Ayres and Dr. Roy K. Heintz, who gave generously of their time and efforts throughout the preparation of the thesis.

The chairman of the thesis committee, Dr. Charles N. Cofer, who provided wise counsel and encouragement from the formulation to the conclusion of the investigation. The writer deems it a privilege to have had the benefit of his association.

1[illegible]

TABLE OF CONTENTS

		Page
CHAPTER I	INTRODUCTION	1
	Some factors in the study of human motivation	2
	The theoretical bases for the clinical inference of needs from projective behavior	5
	The development of projective techniques.	7
	Projective techniques as non-clinical research instruments.	9
	Experimental approaches to the principles of projective expression	12
	McClelland's development of a technique for measuring a psychogenic need through projective expression	15
	Aims and methods of the present investigation.	21
CHAPTER II	PROCEDURES	25
	n Achievement procedures	26
	The Thematic Apperception Test	31
	n Social procedures.	33
	The nominating technique.	37
	Scoring methods and tests of reliability.	39
	Characteristics of the subjects	44
CHAPTER III	RESULTS	50
	The reliability of scoring the Thematic Apperception Test .	50
	The repetition of McClelland's procedure.	51
	The extension of the n Achievement procedures to more mature subjects.	57

Page

A comparison of the results of two different need-arousing procedures: n Achievement and n Social. 67

A comparison of Thematic Apperception Test responses of male and female subjects to the n Achievement procedures 70

The thematic characteristics of stories in the relaxed, failure, and success conditions of the n Social procedures. 77

The relationship of mean n Social scores to group nominations as accepted or rejected 83

The relationship between nominations as accepted or rejected within the group and Thematic Apperception Test responses. 86

Summary of results 99

CHAPTER IV CONCLUSIONS 101

A summary of the major findings of this research 102

A detailed consideration of each of the four main areas of the investigation. 103

A discussion of the thematic characteristics used in the McClelland scoring system 113

The development of a separate scoring system for n Social. . 115

Implications of this investigation for future research . . . 117

SELECTED BIBLIOGRAPHY 119

APPENDICES

Appendix A
Administration instructions for the relaxed condition of the n Achievement procedures 125

Appendix B
Administration instructions for the success and failure conditions of the n Achievement procedures. . . 129

Page

Appendix C
A reproduction of the test booklet and personal data sheet used in the n Achievement procedures . . . 135

Appendix D
Administration instructions for the relaxed condition of the n Social procedures. 147

Appendix E
Administrations for the success and failure conditions of the n Social procedures. 152

Appendix F
A reproduction of the test booklet used in the n Social procedures 158

Appendix G
Reproductions of the four pictures used in the Thematic Apperception Test. 166

Appendix H
Reproductions of the nominating ballot, committee rating form, and the letter of explanation used in the n Social procedures 171

Appendix I
Scoring instructions for the Thematic Apperception Test. 174

Appendix J
Supplemental descriptive statistics for the n Achievement and n Social experimental groups. . . . 182

LIST OF TABLES

Table No.		Page
I	Subjects for n Achievement Procedures Attending Day Classes Showing Sex, Mean Age, and College Affiliation.	45
II	Subjects for n Achievement Procedures Attending Evening or Extension Classes Showing Sex, Mean Age, and College Affiliation	45
III	Subjects for Three n Social Procedures Indicating Sex, Mean Age, and College Affiliation	46
IV	Mean n Achievement Scores for Male Subjects in the Relaxed and Failure Conditions as Reported by McClelland and as Determined in a Repetition of the McClelland Procedures	52
V	The Number and Percentage of Achievement-Related Stories Written by Male Subjects in the Relaxed and Failure Conditions in the Repetition of McClelland's Procedure and the Percentage of Such Stories Reported by McClelland	54
	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male Subjects in the Relaxed and Failure Conditions in the Repetition of McClelland's Procedure and the Percentage of these Characteristics Reported by McClelland.	55
VII	Mean n Achievement Scores and Chronological Ages for Male Subjects in Day and Evening College Attendance for the Relaxed and Failure Conditions. .	58
VIII	The Number and Percentage of Achievement-Related Stories Written by Male Evening School Subjects and the Percentage of Achievement-Related Stories Written by Male Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures	59
IX	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Evening School Subjects and the Percentage of Such Stories Written by Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures	60

Table No.		Page
X	Mean n Achievement Scores and Chronological Ages for Female Subjects in Day and Evening Class Attendance for the Relaxed and the Failure Conditions	62
XI	The Number and Percentage of Achievement-Related Stories Written by Female Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures	64
XII	The Number and Percentage of Achievement-Related Stories Written by Female Evening School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures	64
XIII	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Female Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures.	65
XIV	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Female Evening School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures.	66
XV	Mean Need Scores for Male Subjects in the Relaxed, Failure, and Success Conditions of the n Social and n Achievement Procedures	67
XVI	Significance of the Differences Between the Mean Need Scores for Male Subjects in the Relaxed, Failure, and Success Conditions for the n Achievement and for the n Social Procedures	68
XVII	Mean Need Scores for Female Subjects in the Relaxed, Failure, and Success Conditions of the n Social and the n Achievement Procedures.	69
XVIII	Significance of the Differences Between the Mean Need Scores for Female Subjects in the Relaxed, Failure, and Success Conditions for the n Achievement Procedures and for the n Social Procedures. . .	69
XIX	The Percentage of Achievement-Related Stories Written by Male and Female Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures	71

Table No.		Page
XX	The Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male and Female Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures	72
XXI	Mean Need Scores for Male and Female Subjects in the Relaxed Condition of the n Social and the n Achievement Procedures	74
XXII	The Percentage of Achievement-Related Stories Written by Male and Female Subjects in the Relaxed Condition and the Number and Percentage of Such Stories Written by Male and Female Subjects in the Success Condition of the n Achievement Procedures. .	74
XXIII	The Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male and Female Subjects in the Relaxed Condition and the Number and Percentage of Such Stories Written by Male and Female Subjects in the Success Condition of the n Achievement Procedures.	75
XXIV	The Number and Percentage of Achievement-Related Stories Written in the Relaxed, Failure, and Success Conditions by Female Subjects in the n Social Procedures.	78
XXV	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Female Subjects in the Relaxed, Failure, and Success Conditions of the n Social Procedures. .	79
XXVI	The Number and Percentage of Achievement-Related Stories Written by Male Subjects in the Relaxed, Failure, and Success Conditions of the n Social Procedures	80
XXVII	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male Subjects in the Relaxed, Failure, and Success Conditions of the n Social Procedures. .	81
XXVIII	Mean Need Scores for Accepted and Rejected Female Subjects Within the Relaxed, Failure, and Success Conditions of the n Social Procedures.	84
XXIX	Significance of the Differences in Mean Need Scores for Female Subjects Who Were Accepted and for Subjects Who Were Rejected Between the Relaxed, Failure, and Success Conditions of the n Social Procedures. .	84

Table No.		Page
XXX	Mean Need Scores for Accepted and Rejected Male Subjects Within the Relaxed, Failure, and Success Conditions of the n Social Procedures.	85
XXXI	Significance of the Differences in Mean Need Scores for Male Subjects Who Were Accepted and for Subjects Who Were Rejected Between the Relaxed, Failure, and Success Conditions of the n Social Procedures. .	85
XXXII	The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Female Subjects in the Relaxed Condition of the n Social Procedures	86
XXXIII	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and Rejected Female Subjects in the Relaxed Condition of the n Social Procedures . .	87
XXXIV	The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Female Subjects in the Failure Condition of the n Social Procedures	88
XXXV	The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Female Subjects in the Success Condition of the n Social Procedures	88
XXXVI	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Female Subjects in the Failure Condition of the n Social Procedures.	89
XXXVII	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Female Subjects in the Success Condition of the n Social Procedures.	90
XXXVIII	The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Male Subjects in the Relaxed Condition of the n Social Procedures	92
XXXIX	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Male Subjects in the Relaxed Condition of the n Social Procedures.	93

Table No.		Page
XL	The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Male Subjects in the Failure Condition of the n Social Procedures	94
XLI	The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Male Subjects in the Success Condition of the n Social Procedures	94
XLII	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and Rejected Male Subjects in the Failure Condition of the n Social Procedures . .	95
XLIII	The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and Rejected Male Subjects in the Success Condition of the n Social Procedures . .	96

CHAPTER I

INTRODUCTION

The concept of motivation is of basic importance in psychology. Consequently, progress in both theoretical and applied psychology has been hampered by the absence of satisfactory techniques for identifying and measuring human motivational states. Recently McClelland and his associates (35) have attempted to solve this problem by devising verbal procedures for arousing and measuring a psychogenic need for achievement. Their work seems to hold promise as a productive experimental approach to some of the problems of human needs and motivations (66, pp. 110-111).

This research is designed to extend the methods developed by McClelland to other need-arousing procedures. The projective behavior of individuals subjected to these need-arousing procedures will be examined to determine the presence of other psychogenic needs. The research is also concerned with the further definition of the dimensions of this motivational measure which is derived from verbal responses. This definition will be made in terms of the sex, maturity, and social acceptability of the individual.

Organization of this Chapter

Subsequent portions of this chapter will indicate the significance of McClelland's findings and outline the aims of this investigation. The background for the consideration of these topics will be developed by noting: (1) some factors in the study of human motivation; (2) the

theory of unconscious motivation underlying clinical interpretations of verbal behavior; (3) the development of projective techniques into the clinician's most convenient method for assessing human needs; (4) the extension of clinical techniques into other research areas; (5) the evidence offered to justify the inference of needs and motivation from projective behavior; (6) experimental approaches to the problem of determining human needs through measures of perception and apperception.

Some Factors in the Study of Human Motivation

Any account of the behavior of individuals must, according to Krech and Crutchfield (27, p. 29), make reference to some active driving force within the individual. The study of motivation is the study of the relationships between this driving force and the goal toward which it is directed. However, as Matheny (30, p. 2) notes, "Motivation is a general term used to designate the dynamic relationships of an organism and does not denote specific manipulatable mechanisms. It has the status of an intervening variable", and as Waters and Blackwood (75, p. 352) point out, must be inferred as existing between two sequences of observable behavior in order to explain the relationship between them. In his treatment of motivation Murphy concludes:

> 'Motivation' is the abstraction that defines the organism-environment situation in which action occurs; and despite broad similarities between men, one man's 'motivation', as a structural whole, can never be the duplicate of another's" (41, p. 104).

The complexity of the concept of motivation makes difficult its exact description and measurement. The task is, however, of immediate

importance to such fundamental areas of psychological theory as learning and personality.

One evidence of this may be seen in the fact that Hilgard (25) chooses "treatment of motivation" as one of the key topics with which to make a critical comparison of current theories of learning. Another learning theorist, Tolman, has recently noted (72) the crucial position of motivation in theories of learning and personality. He attempts to reconcile some of the conflicting theories of learning and personality by reconsidering the various treatments of motivation in terms of a hierarchy of drives, needs, and wants. Tolman (72, p. 357) feels that learning theories can be divided into two main classes. In the first, he places the theories of men such as Freud, Murray, and MacDougall who stress the importance of basic drives or needs as the fundamental source of all motivation. Regardless of the varying terminology employed, Tolman suggests that these men seek to derive all more immediate needs and wants from basic drives. In the second class are included the theories proposed by Lewin, Koffka, and MacLeod who place primary emphasis on the immediate situation or environmental context as the basic factors in any explanation of motivation. Although there are other points of conflict between these two main classes, an improved understanding of the nature of motivation would do much to reconcile them.

The importance of motivation has also been recognized in the design of experiments. Psychologists have been able to deal with motivation in animal studies in terms of drive strength and need by the direct manipulation of the animal's food, water and sex supplies. In human subjects, however, the problem is less amenable to such direct experimental

methods. For a variety of reasons, the human organism cannot be subjected to rigid control of heredity, experience, and immediate environmental conditions to any degree like that which is possible with the use of laboratory animals.

Schmidt (61) notes that experimental work with human subjects has most frequently employed the incentives of praise or reproof, knowledge of results, and competition. In a further consideration of these studies of motivation, Matheny finds (30, p. 7) that such incentives have tended to yield inconclusive results. He suggests that this inconsistency is a function of the individual's varied perception of the meaning of these motivational devices. In his discussion of praise and reproof, Matheny indicates that the effects of these incentives may be dependent on a number of factors. Among the factors which he notes are G. W. Allport's "ego involvement in the task", A. L. Edward's "ego involved frame of reference", and P. T. Young's "level of self esteem". The varied influence on individuals of these incentives may well indicate that a more profitable approach to the study of human motivation lies in the evaluation of personal needs and motivational states. It is certain, however, that the final development of satisfactory theories of learning and personality is dependent upon an increasing understanding of human motivation. In recognition of this situation Hilgard states:

> Especially in human learning and perhaps also in animal learning, it is important to know what the learner is trying to do. If there is any teaching which has come from Freudian psychology, it is that motives are organized in some sort of hierarchy within the individual, resulting in a value-system expressed in behavior.
> .....A sophisticated learning theory however it conceives its primary data or principles, must take into account the organization of motives in the individual. Hence, concepts like ego-involvement and level of aspiration.....
> .....become important supplements to theories of reward and punishment" (25, p. 348-349).

An approach to some of the problems of human motivation has already been made by clinical psychologists. They have with some degree of success adopted projective tests as suitable devices for assessing human needs and motivational states. A program for the further development of a measure of individual needs based on projective behavior will be presented in the succeeding portions of this chapter.

The Theoretical Bases for the Clinical Inference of Needs from Projective Behavior.

Clinical techniques for assessing needs and motivational states through inference from verbal behavior cannot be considered apart from the theoretical framework within which they are employed. Clinical psychologists frequently claim allegiance to analytic, dynamic, or depth psychologies. However, the most common basis for the clinician's interpretation of projective behavior is to be found in Freud's statement of the principles of unconscious motivation and the mechanisms of conflict solution. These principles were suggested in his writings as early as 1896 (22, p. 189). It was in a later elaboration of these principles that Freud first used the term "projection" to describe one of the specific minor mechanisms of conflict solution. "The ego, unable to accept in itself certain thoughts, wishes, or characteristics, attributes these to environmental objects or to persons" (11, p. 75). The more inclusive current use of the term projection in relation to projective techniques rests, according to Sears, on "the implication..... that the motivational and organizational properties of a personality influence the perceptual and judgmental processes" (65, p. 121).

There are two assumptions on which both the clinician's use of projective tests and McClelland's measure of an experimentally aroused need are based. The first of these is that a need will result in fantasy reflecting the presence of that need. White states:

> The fundamental hypotheses on which the method stands is that the need is father to the fantasy and from the needs and situations appearing in the story one can infer important strivings in the narrator" (76, p. 236).

In his evaluation of projective techniques Symonds writes:

> These techniques yield information of great diagnostic value concerning a person such as the strength of his drives, his conflicts and problems, and the nature of his underlying wish life" (69, p. 517).

The second assumption stated or implied in the interpretation of many projective tests is that the nature of a need or motivational state will determine characteristic and unique varieties of projective expression. This is clearly the case in discussions of principles for the interpretation of the Thematic Apperception Test by Symonds:

> There is no doubt but that symbolism is present in many TAT stories. For instance, stealing may usually be assumed to be a sign of craving for love and security...Actions, situations and qualities may serve as symbols of other actions and qualities which are more closely related to the individual and his life concerns" (70, p. 32).

In a manual based on Murray's system of interpretation, Stein writes of the Thematic Apperception Test:

> It is extremely important that the TAT analyst pay very careful attention to the hero's behavior and activities in the stories, since from it he will be able to evaluate the patient's needs and drives" (68, p. 30).

The increasing acceptance of these two assumptions by clinicians was paralleled by the development of special materials and procedures for eliciting significant verbal and non-verbal behavior from the individual.

The Development of Projective Techniques

One review of projective techniques (57, p. 263) credits Brittain in 1907 with the first modern investigation of imagination using a picture-story technique and Bartlett in 1916 with the initial modern use of ink-blots as stimulus material. Subsequently, these two techniques in the form of the Thematic Apperception Test (TAT) and the Rorschach became the most widely used of many different projective tests (8, p. 207).

Second only in importance to the psychoanalytic theory on which they are based was the impetus given to projective techniques by Rorschach's publication in 1921 (50) of a system of notation for dealing with the complex verbal responses to ink-blots. Progress in the development of the Rorschach Method was more rapid in the early years in Europe than in the United States. Although a monograph on the method was published in the United States in 1924 (51) interest in the test was not widespread. Vernon's review of applications of the Rorschach Method in 1933 (74) served to encourage further research in the method in the United States, and in 1937, Beck (7) published a systematic handbook for the administration, scoring, and interpretation of the test which provided Rorschach workers with a common technical language and systematic position. Following the establishment of the Rorschach Institute in 1939 through Klopfer's influence, the clinical adoption of the Rorschach became almost universal, and in the ten succeeding years, published research papers on the method outnumbered those on all other projective methods (8, p. 151).

The development of modern picture-story tests proceeded more slowly. This was probably a reflection of the greater variety and complexity of the verbal responses to picture stimuli and the lack of a system of notation for classifying these responses. The recent history of the technique dates from the work of Schwartz (62) who in 1932 used a series of pictures in a study of delinquent personalities. Its formal birth, however, came in 1935 with the development of the Thematic Apperception Test by Morgan and Murray (39). The initial picture series was modified and employed as one of the major techniques in personality research studies carried on at the Harvard Psychological Clinic, reported in 1938 (43). Although the method has been fruitful, a single system for handling the fantasy elicited by the Thematic Apperception Test is still lacking. Proposals have been made for such systems by Murray (44), Tomkins (73), Mayman (31), R. N. Sanford (58), and by Masserman and Balkan (29). None, however, has combined the sensitivity and simplicity that is required for dealing with these projective expressions.

Although the Rorschach test and the Thematic Apperception Test are the most widely used of the projective techniques, there are many others which have been used or suggested for use. Frank in 1939 (19) first applied the name projective techniques to this growing family of tests. He illustrated several different methods of eliciting projective expression classified according to the stimulus materials used. Included in this first listing were the Rorschach test and the Thematic Apperception Test. In addition he mentioned: Stern's Cloud Pictures; play techniques; plastic and amorphous substances such as clay, mud, and dolls;

artistic media such as finger paints; puppets for role playing; and finally expressive movements as illustrated by handwriting. Techniques in which verbal responses serve as the primary vehicle for projection have been most productive and widely used with adults. The non-verbal methods such as finger painting have been more frequently used with young children. Proponents of some techniques claim special application to a restricted area of personality measurement for their tests. For example, the Rosenzweig Picture Frustration Study has been offered for use in the investigation of frustration (52). It is more common, however, to find projective tests interpreted in terms of total personality structure and function. Stress is usually placed on needs, motivation, and conflicts.

Projective Techniques as Non-Clinical Research Instruments

In addition to the multiplication and diversification of projective techniques either in use or under consideration, there has been a significant broadening of the range of problems to which these techniques have been applied. While they are still primarily clinical tools, they are being employed as important instruments in other investigations. The Rorschach test has been used in inter-cultural studies (18), as a predictor of academic success (32), as a predictor of occupational adjustment for mental defectives (67), and as a test in vocational guidance (71). In a similar fashion, the Thematic Apperception Test has been employed in studies of anti-Semitism (21), selection of combat officers (45), in studies of other cultures (24), and in the prediction of hypnotic

suggestibility (56). Symonds indicates the wide usefulness of the Thematic Apperception Test in these terms:

> (it is) a valuable tool for use in psychiatric diagnosis, providing a rapid method for studying the psychodynamics of an individual, for portraying some of the relationships of an individual with others who are close to him, and more recently for studying attitudes and sentiments" (70, p. 12).

On the basis of an individual's projective behavior in a test situation clinicians produce personality descriptions and analyses which, they maintain, delineate the interrelationships of the needs and strivings of the individual, the working of the ego defenses, his conflicts past and present, and statements of the individual's present relationships with his environment. It is assumed by some authorities (8, p. 5; 70, p. 7) that the individual brings his entire personality into action within the test situation. They suggest that he responds to the stimuli present on the basis of the complex and dynamic factors of attitude, motivation, striving, and experience. It is further assumed that the behavior so sampled can be analyzed by the skilled interpreter and that the dynamic relationships of an individual's personality will then be apparent. While the wide acceptance of these techniques by clinicians attests to their usefulness in a clinical setting, the evidence offered for the validity of such interpretations is far from complete. Five general procedures have been employed most frequently in research offered to support the validity of need and motivational interpretations of projective behavior (8, p. 135). First is the single record or intensive case study in which the interpretation of the projective responses is compared with all other information in the case history (38). A second

procedure consists of the deduction of case diagnoses from projective test interpretations and the comparison of these diagnoses with those obtained from other criteria (10). A third procedure is based on the blind matching of projective test interpretations with behavioral descriptions (28). In this procedure, behavioral descriptions and projective test data are collected for a number of subjects. An expert then attempts to pair correctly the unidentified test interpretation and behavioral description for each individual. The fourth procedure involves the demonstration of statistically different variations in the projective responses of different diagnostic groups (6), or the correlation of specific response categories with behavioral ratings (23). The last of the procedures, the prediction of behavior from projective test records, has been employed less frequently than the others. The prediction usually has been confined to a restricted definition of behavior and has been in terms of predicting scores on attitude scales. Among the studies using this final procedure are those reported by Dubin (17) and Proshansky (48).

There are certain restrictions to the conclusions which can be drawn from data reported in studies employing these procedures. Without attempting to criticize the statistical and sampling problems that are a part of most clinical investigations, a basic restriction is imposed on the data by the very nature of the theoretical framework within which the clinician operates. Faced with the necessity of dealing adequately with the patient's total personality on the basis of inadequately defined instruments and principles, he interprets projective test records in terms of

psychoanalytic, dynamic, or depth psychology, which in itself has been inadequately defined and tested. The final interpretations are influenced by hunches and/or clinical intuition. The precise operations performed or the logical steps followed in reaching the statement of the individual's needs, motivations, and conflicts are for the most part unstated (55, p. 287).

There is a need for an exact statement of the conditions determining projective expression and the relationship obtaining between specific aspects of projective behavior and actual day-to-day behavior patterns. The clinical approach, with its emphasis on a single individual and a global, intuitive approach to that individual's needs and conflicts, seems basically unsuited to the task of isolating the influence of specific needs and motivational forces on perceptive and apperceptive organizations and expressions. Although it may be true that there are many complex and subtle interrelationships of these personality factors which are not at present amenable to experimental investigation, it should not be concluded that the basic mechanisms of projective behavior cannot now be profitably studied using experimental methods. The theory and practice of projective tests and the psychoanalytic theory with which they are consistent depend for ultimate evaluation on the development of a valid method of investigation.

Experimental Approaches to the Principles of Projective Expression

While the clinical method emphasizes the gathering of information about the individual, the experimental approach offers the possibility

of stating the circumstances under which needs and strivings within the individual influence his perceptive and apperceptive behavior and in what ways this influence is manifest. The problem of identifying and measuring needs and motivational states through the analysis of projective expressions may be clarified by considering the results of two experimental approaches to the problem. The first of these approaches deals with the changes in projective behavior which follow a contrived failure or frustration. In the second approach, an attempt is made to relate certain perceptual measures to an individual's need, attitude, and value systems.

The work of Katz (26) may be grouped with other studies which employ the first of these experimental approaches. He analyzed the drawings of a face produced before and after a failure on a supposed "test of abstract ability". He noted significant evidences of the distortion and omission of crucial lines, a mask-like appearance, and an expression of toughness in the post-failure drawings. French (20) investigated the influence of an experimental test failure on responses to the Rosenzweig Picture Frustration Study. Among the effects noted were a rise in punitive Need-persistance and the fact that poor students as a group reacted more strongly to the frustration than did good students (20, p. 114).

Certain effects of frustration on responses to the Thematic Apperception Test have been considered by Rodnick and Klebanoff (49). A pinball machine was modified to permit the experimenters to control the maximum scores attainable. Following a frustrating game, they were able to distinguish the Thematic Apperception Test records of the 12 best adjusted boys and the 12 boys who were lowest in adjustment in an NYA camp.

Sellak (9) criticized the responses of individuals to the first five cards of a TAT series and noted a rise in aggressive content expressed to the remaining five cards. Rotter and Rodnick (54) also examined projective behavior following artificial frustration.

A second approach to the investigation of projective behavior involves relation of perceptual measures to an individual's needs, attitudes and value systems. Sanford in 1937 (59, 60) investigated the influence of a physiogenic need, hunger, on subjects' imaginal processes. Murray (42) noted that subjects attributed higher degrees of maliciousness to faces in photographs following a frightening experience. Cantril and Allport (13) report a study by Woolbert in which he found that individuals perceived items in a dummy newspaper which were most closely related to their personal value systems. Postman, Bruner, and McGinnies (47) considered personal values as selective factors in perception in terms of their influence on word recognition time. Words related to measured values of subjects were recognized in significantly shorter time than were neutral words. It has also been demonstrated by Bruner and Goodman (12) that need and value affect the size estimation of coins made by rich and poor children.[1] Another experiment in the area of perception (46) treats it as a goal directed behavior and notes that under stress or frustration the perceptual behavior is disrupted. Selection of percepts becomes less adequate, and less "sense" is made of the total

---

[1] In a repetition of this study, Carter and Schooler (14) were able to confirm the findings of Bruner and Goodman only when the judgments were made from memory or when the stimulus object was equivocal.

field.

These experiments demonstrated the practicability of investigating relationships existing between needs, values, and attitudes and various perceptive and apperceptive measures. However, there remains a wide gap between the various conceptions of needs, values, and attitudes as treated in these experiments and the clinical interpretation of projective tests in terms of need and motivational factors.

McClelland's Development of a Technique for Measuring a Psychogenic Need Through Projective Expression

A systematic experimental approach to this problem has been reported by McClelland and his associates (5, 33, 34, 35, 36), describing the effects of physiogenic and psychogenic needs on measures of perception and a modified Thematic Apperception Test. Characteristic differences between the thematic content of stories written by subjects in a relaxed state and subjects under the influence of an experimentally aroused need for achievement were used to develop a total n Achievement[1] score (35). Performance of individuals in the recognition of need related and neutral words (36) and in an anagrams task (16) was found to be related to the individual's n Achievement score.

---

[1] The convention suggested by Murray (43) for abbreviating "need" to "n" will be used in subsequent sections of this thesis. Compounds such as n Achievement and n Food indicate a need for achievement or a need for food which will be specifically defined in terms of the experimental operations performed in their arousal. The grammatical correctness of these forms is admittedly doubtful. It is felt, however, that their use will aid the reader in his consideration of the special dimensions of experimentally aroused needs as opposed to the more general use of the terms.

McClelland based his initial research on an obvious physiogenic need, hunger or n Food. Three groups of subjects[1] were used. A group of non-hungry or satiated subjects and a group of food deprived or n Food subjects were asked to write six stories in response to pictures which were projected on a screen for 20 seconds preceding each five minute writing period. Certain perceptual tasks were assigned to the same groups. However, only the data from the four picture Thematic Apperception Test will be considered in this discussion. The application of an objective scoring system to the thematic content of these stories revealed significant differences between the relaxed and the n Food groups on several of the scoring categories used. The following examples will serve to illustrate the nature of the scoring categories and the thematic differences between the relaxed and the n Food groups. (1) There was an increase in the number of plots dealing with the deprivation of the goal in question (D th)[2] in the n Food group. (2) There was an increase in the number of times that characters in the stories were said to want or wish for the goal in question (N) in the n Food group. (3) There was an increase in the mention of instrumental activities which were successful in dealing with the need related problem (I/) in the n Food group. The authors concluded that the high intensity of n Food had

---

[1] The group of moderately hungry individuals did not yield conclusive results. Data for these subjects will not be considered.

[2] McClelland's scoring symbols will be used. A complete list of these symbols and the scoring criteria are reproduced in Appendix I.

operated to produce changes in projective behavior which were manifest in the story characteristics of the Thematic Apperception Test.

The crucial step in McClelland's research was the arousal of a psychogenic need[1] and the comparison of Thematic Apperception Test stories written under the influence of this need with those produced under the influence of n Food. The psychogenic need selected was n Achievement. Murray originally defined n Achievement as a need:

> To accomplish something difficult. To master, manipulate or organize physical objects, human beings, or ideas. To do this as rapidly, and as independently as possible. To overcome obstacles and attain a high standard. To excel one's self. To rival and surpass others. To increase self-regard by the successful exercise of talent" (43, p. 164).

This need is aroused by a technique of ego involvement which will be described in detail in Chapter II. The problems of securing such ego involvement have been considered critically by Alper (1, 2, 3, 4). In her discussion of the relationships between ego-involvement and task-involvement, Alper stresses the importance of possible success or failure in the task to the individual's level of ego involvement. R. S. Sears (63, p. 449) has also considered the effects of success and failure in relation to ego involvement. She concludes that the examples and statements of prestigeful persons as to the values of activities in the culture

---

[1] The terms "psychogenic" or "secondary" are used to refer to needs which, as Morgan states, "are held to be the result largely of learning and regarded as so complex in nature that there is little profit at present in attempting to deal with them at the physiological level" (40, p. 437). Physiogenic or primary needs are those which can be directly traced to activities of the urogenital or alimentary tracts.

or sub-culture can become the reference point for feelings of success or failure. These factors have been recognized in the design of the procedures employed by McClelland in this investigation.

The data from three groups of subjects to n Achievement procedures are reported by McClelland: (1) a relaxed group; (2) an ego involved group experiencing failure on an "intelligence test"; and (3) an ego involved group experiencing initial success and then failure on the "intelligence test". It was reasoned that group (1) would have the lowest need level and that groups (2) and (3) would have, in that order, higher n Achievement levels. Analysis of the stories written in the Thematic Apperception Test procedure for each of these three groups disclosed that several scorable thematic characteristics of the stories differed between the relaxed and the two ego-involved groups. Basic similarities were noted between the nature of these differences and those found in the previous study using a physiogenic need, n Food. Among the thematic categories which increased in frequency under the influence of both n Achievement and n Food were the previously mentioned deprivation thema (D th), successful instrumental response (I+) and need expression (N).

A major contribution of these experiments lies in the development of a scoring system which is sufficiently objective to permit satisfactory re-score reliability. An index of agreement of 91%, computed by dividing twice the number of agreements by the sum of the items scored on each of two occasions, is reported (35, p. 254). A product moment correlation of .95 is reported between the total n Achievement scores obtained for 30 test records on two different scoring occasions. This serves to encourage

further investigation in the area of needs and motivation using this method. As McClelland indicates it should reopen to experimental psychology the study of imagination. This area has been largely neglected since introspection was discredited.

In order to define further the characteristics of n Achievement as it is derived from an individual's projective behavior, McClelland and his associates have reported the relationships existing between an individual's n Achievement score and other ratings and performance measures. Investigation of word recognition times for subjects having high n Achievement scores and low n Achievement scores revealed that an individual's recognition time for words classed as need related and as neutral is related to his n Achievement score (36).

A factor analysis was made of the productiveness of individuals with different n Achievement scores. The output of subjects measured on successive two-minute intervals of a twelve minute anagrams task was related to their n Achievement scores. Subjects with high n Achievement scores differed from subjects with low n Achievement scores in their maintenance of productivity during the central portion of the task (16). In another section of this study, it was noted that ratings by psychiatrists and psychologists of an individual's need for achievement were uncorrelated with the n Achievement scores derived from responses to the Thematic Apperception Test. From these and other data, McClelland concludes that one of the basic characteristics of n Achievement is that it represents a need for achievement whether or not the situation demands it. It differs from the qualities rated by the clinician as need for achievement

in its more persistent and less realistic nature (16, p. 25).

The scorable thematic content of stories which increased in frequency under conditions arousing n Achievement had in nearly all cases a future reference. Categories based on more objective descriptions of the situation such as plots and obstacles did not change under conditions arousing the n Achievement motive. McClelland suggests that these anticipatory characteristics may be fundamental to an understanding of motivation and need. He notes that this is a significant departure from the common conception of a motive as a persisting deficit stimulus (35, pp. 253-255). McClelland finds more than wish fulfillment or substitute gratification expressed in the Thematic Apperception Test stories. He notes that the differentiating categories may be equated with the concepts which Hull finds useful in describing learning. "For example, a variety of experiments show the same increase in instrumental activity with increased drive at the gross motor level; others.....show the same increase in anticipatory goal responses" (35, p. 253).

The validity of the n Achievement score as a measure of human motivation or need is argued by McClelland from two general standpoints. The first of these is the acceptance in the literature of the procedure used to arouse n Achievement. He notes specifically (35, pp. 250-251) evidence from the studies of R. R. Sears and from T. G. Alper which support the validity of the experimental procedure used in arousing n Achievement. A second argument for the validity of the n Achievement score as a need measure is the correspondence of the thematic categories scored as n Achievement and the characteristics of n Food in the initial hunger experiments (35, p. 252).

Aims and Methods of the Present Investigation

The preceding studies by McClelland and his associates provided quite directly the stimulus and the theoretical basis for the following studies. Several specific problems become apparent from the review of the n Achievement experiments. A number of these problems relate directly to the basic mechanisms of projective behavior and the inference of needs and motivational states from such behavior. The following experiments are designed to permit the clarification or solution of certain of these problems.

The aims of the following study may be considered as being divided into four main parts. The first part is concerned with the determination of the unity or consistency of n Achievement, as it is measured by McClelland, by employing a second need-arousing procedure. Unity and consistency as used above refer to the question of whether a single, basic need is reflected in the n Achievement score, and the consistency of n Achievement scores when ego involvement is directed towards goals other than achievement in the intellectual sphere. The second part is an evaluation of the sex differences existing in the projective expression of needs by subjecting individuals of each sex to both of the need-arousing procedures. The third part is an investigation of the relationship existing between an individual's social acceptance within the group and his projective expressions as elicited in the experimental procedure designed to arouse a need for social acceptance. The final part of this study is concerned with testing the applicability of McClelland's n Achievement procedures to more mature subjects.

The first of the four main parts of this investigation was designed to test the unity of the n Achievement scores. A second need arousing procedure was devised for this purpose. The need presumably aroused and its scoring by the n Achievement criteria will be referred to as n Social; viz., a need for social acceptance. Its arousal was accomplished by following ego-involving instructions with either experimentally arranged social acceptance or rejection. A comparison was then made between the scorable Thematic Apperception Test responses of individuals who were subjected to the n Achievement procedures and the responses of individuals who were subjected to the n Social procedures.

All reported investigations of n Achievement have been conducted with male college students as subjects. For this reason, the second part of this investigation was designed to reveal any sex differences in response to the procedures for the arousal of n Achievement and n Social motives. Certain differences in the responses of male and female college students to Thematic Apperception Test pictures have already been reported by Rosenzweig and Fleming (53) for other experimental conditions. Procedures for the arousal of both n Achievement and n Social were employed in this study of sex differences because of the widely held belief that the goals used in these procedures have differential importance for males and females. The cultural emphasis on achievement goals for males and on social or nurturance goals for women has been noted by Mead (37, pp. 296-324). A study of similar influences on achievement goals for men and nurturance goals for women as reflected in the content of children's third grade readers has been reported by Child and others (15). Female characters

in these readers were involved in nurturance activities six times as frequently as they were involved in personal achievement activities. Males, however, were involved in personal and intellectual achievement activities with twice the frequency that they were involved in nurturance activities. In addition, it was found that males were involved in personal achievement activities twelve times as frequently as were females.

The third main division of the present research was an investigation of the effects of social acceptance within the group on projectively measured needs. As a part of the n Social procedures, a measure was made of each individual's social acceptance within the experimental group by means of a nominating technique. Need scores derived from the Thematic Apperception Test responses were evaluated in terms of each subject's group acceptance rating. It was reasoned that if n Social scores did reflect an experimentally aroused need for social acceptance, actual acceptance or rejection by the group would be reflected in the n Social score.

The fourth and final part of this investigation was designed to test the applicability of the McClelland procedures for arousing and scoring n Achievement to more mature individuals. This was done to determine the justification of extending to older subjects principles of projective expression and need measurement which have been developed with younger subjects.

Summary

The experiments to be described and discussed in subsequent chapters were designed to define some of the dimensions of need measures derived from Thematic Apperception Test responses. Individuals of each sex were subjected to two different need arousing procedures. In addition to classification in terms of the n Achievement and n Social procedures employed, the data were considered in terms of the sex, maturity and social acceptance of the subjects. The data were analyzed for possible relationships between projective behavior and needs and motivations inferred from such behavior. The ultimate aim of such research is the final establishment of workable concepts of projection which will permit projective tests to be scored and interpreted in terms of human needs and motivations within a sound theoretical framework based on experimental evidence.

CHAPTER II

PROCEDURES

In order to provide data with which to answer the questions posed in Chapter I, procedures for the arousal and measurement of n Achievement and n Social were applied to 445 subjects of both sexes. Two immediate problems were apparent at the outset of this investigation. First was a need to repeat McClelland's original work in arousing and scoring n Achievement for male college students. Secondly, there was the necessity of devising an experimental procedure for the arousal of n Social to permit testing the unity of McClelland's n Achievement. Unity or consistency of n Achievement as interpreted in this paper refers to the problem of whether scorable changes in projective expression are or are not specific to particular need-arousing procedures. The methods and materials which were selected to permit the solution of these problems will be presented in this chapter.

Subsequent sections of this chapter may be considered under three main topics. The first of these divisions will be devoted to the experimental treatments employed for the various groups. The second division will present a discussion of the methods of scoring the projective records and the reliability measures applied to the scoring. Finally there will be an explanation of the selection and assignment of subjects to the various treatments.

Experimental Group Treatments

The experimental procedures applied to subjects in these investigations

will be presented by describing: (1) the n Achievement procedures; (2) the Thematic Apperception Test methods and materials; (3) the n Social procedures; and (4) the nominating technique.

There were three basic conditions established in the treatment of the subjects. These involved: (a) the induction of feelings of relaxation or non ego-involvement; (b) feelings of success; and (c) feelings of failure. These three conditions were established for both male and female subjects. In one series of experiments, subjects were oriented toward achievement goals. In another series, similar conditions were established in subjects who had been oriented toward a goal of social acceptance.

n Achievement Procedures

The materials and procedures used for arousing this psychogenic need follow those described by McClelland as closely as possible (35, pp. 243-245). Three simple paper and pencil tests were used with each of the n Achievement groups. Test booklets[1] were prepared which included these tests together with the necessary forms for the Thematic Apperception Test. The first test was an anagrams test. The second and third tests were of the same type[2]. In each test, the subject was

---

[1] Appendix C contains a reproduction of the test booklet which was distributed to subjects in the three n Achievement conditions. Pages 5 and 6 of the test booklet comprise a word association test used as a part of another study which will not be reported in this thesis.

[2] McClelland included in his procedure four "motor perseveration tests" which were omitted from this investigation to permit the completion of a group treatment within a fifty minute class period.

presented with a list of scrambled words and told to reconstitute them in meaningful form during an allotted period of three minutes. The anagrams and scrambled words tests were employed merely to provide a basis for inducing ego-involvement for the success and failure n Achievement groups.

An attempt was made to establish three intensities of n Achievement. First was a low-need group in which efforts were exerted to prevent the subjects from becoming ego-involved in the tests. Secondly, a high intensity of n Achievement was established by securing ego-involvement in the tasks and then announcing norms for the tests that were so high that most subjects experienced failure. In the third group, an attempt was made to produce a low intensity of n Achievement by announcing test norms, following the ego-involving instructions, so low that nearly all subjects experienced success. It was hoped that this would satiate n Achievement. The following procedures were used in regularly scheduled college classes to establish the three n Achievement conditions.

n Achievement Relaxed Groups

The test administrator was introduced by the instructor as a graduate student who was "trying out some tests". The administrator emphasized that the tests were being tested, not the subjects. The students did not calculate their scores, no norms were announced, no identifying marks appeared on the test booklets, and the students were not told to put their names on the booklets. The experimenter gave the following

instructions from memory:[1]

> These are some recently devised tests. They are in an early developmental stage and data are being gathered in order to perfect them. Since these tests have just been constructed we have no way of knowing how difficult they are or what they really measure--if anything. So we will appreciate your co-operation in providing some information about these tests.

The administrator then read the instructions for Test I, the anagrams test. At the end of three minutes, the subjects were given the instructions for Test II and Test III, the scrambled words tests. They were then permitted three minutes for each of these tests.

At the conclusion of these tests, instructions were given for the Thematic Apperception Test. The subjects were told that this was a test of "creative imagination" in which five minutes were allotted for writing a story in response to each of the stimulus pictures. Each of the four pictures had been transferred to a 2 x 2 black and white slide. A picture was projected on the screen for 20 seconds preceding each of the writing periods. These pictures and the order of their presentation were the same for all experimental groups. After all work with the test booklet had been completed, the subjects were told to write their names on the cover of the test booklet and to complete a Personal Data form[2] which had been distributed. This form was inserted into the test booklets by each subject before the test booklets were collected. The purpose of the

---

[1]The complete administration instructions for the relaxed n Achievement groups are reproduced in Appendix A.

[2]Appendix A contains a reproduction of the Personal Data form.

Personal Data form in this group was merely to gather information to permit examining comparability with other experimental groups in terms of age, sex, and year in school.

n Achievement Failure Groups

In these groups, the test booklets were distributed immediately after the instructor had introduced the experimenter. There was no reference to the status of the experimenter except that he was a member of the Psychology Department of the University of Maryland. No explanation was given concerning the purpose of the tests at this time. Instructions[1] were then given for Test I in the same words as with the relaxed groups. Before the subjects started work on this test the experimenter announced:

> "I wish to emphasize that you must follow these directions exactly since the tests are closely timed."

After the completion of Test I, the subjects filled out the Personal Data sheet. They were requested to include their name, age, high school attended, vocational aim, I. Q., estimated intelligence, and certain other information. The primary purpose of this questionnaire was to secure the subject's ego-involvement in the tests by making personal and achievement-related information available to other persons as well as the test scores. A secondary purpose of the questionnaire was to permit testing the comparability of the groups in terms of age, sex, and other vital statistics.

---

[1] The complete administration instructions for the success and failure n Achievement groups are reproduced in Appendix B.

In order to encourage greater ego-involvement in their test performances, the test administrator next made the following remarks in an extemporaneous manner:

> The tests which you are taking directly indicate a person's general level of intelligence. These tests have been taken from a group of tests which were used to select people of high administrative capacity for positions in Washington during the past war. Thus in addition to general intelligence, they bring out an individual's capacity to organize material, his ability to evaluate crucial situations quickly and accurately; in short, these tests demonstrate whether a person is suited to be a leader (35, p. 243).
>
> This present research parallels[1] and supplements Naval research undertaken to determine which educational institutions turn out the highest percentage of students with the administrative qualifications shown by superior scores on these tests. For example, it has been found that the University of Maryland excels in this respect. You are being allowed to calculate your own scores, so that you may determine how well you do in comparison with University of Maryland students.

At this point, the experimenter quoted by quartiles norms which were so high that almost the entire group scored in the lowest quartile range of alleged University of Maryland norms. The experimenter next made the following statement:

> Test number I has been found to be the single most diagnostic test of the entire battery. Thus an individual's standing on this first test would be a good indication of how well he might be expected to do on the test as a whole.

The subjects were then given the instructions for Tests II and III

---

[1]Certain modifications have been made in this paragraph due to differences in the sponsorship of the research and the location of the experimental groups, although efforts have been made to retain the meaning of McClelland's original remarks (35, p. 243). For experimental groups at the College Park campus of the University of Maryland, Johns Hopkins was substituted as the reference institution.

and permitted to work for three minutes on each of these tests. At this time, they were given instructions for calculating their test scores and for entering them in a box labeled Total Score. The experimenter then quoted the alleged University of Maryland norms for total score on these three tests in the same way he had following Test I. These norms were again so high that nearly all subjects fell in the alleged lowest quarter of the reference group. Following this, the Thematic Apperception Test was administered.

n Achievement Success Groups

The experimental procedure for the success groups entailed only one modification. The norms quoted for Test I and for the Total Score in the success groups were so low that nearly all subjects placed in the top quarter of the alleged University of Maryland students. McClelland did not report the results for the success condition. While procedures for success groups had been designed to satiate n Achievement, he indicates that the:

> ".....need aroused by the ego-involving instructions persisted into the subsequent Thematic Apperception Test which was interpreted as a further test of ability" (35, p. 244).

Success procedures were employed in the present study primarily to permit comparison with certain of the n Social procedures.

The Thematic Apperception Test

At the conclusion of the need inducing procedures for both the n Achievement and the n Social groups, the Thematic Apperception Test was introduced with these remarks adopted from McClelland's procedure:

> The next test is a test of your creative imagination. A number of pictures will be projected on the screen before you. You will have 20 seconds to look at the picture and then five minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide you in your thinking and enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.
>
> Obviously there are no right or wrong answers, so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic, for this is a test of your creative imagination. Do not merely describe the picture that you see. Tell a story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any question use the reverse side (35, p. 244).

Two of the four slides used were identical with those selected by McClelland[1]. These were the first slide of the series (TAT 8BM) depicting a boy and a surgical operation, and the last slide of the series (TAT 7BM) showing two men in serious conversation.

Since it was planned that this study be extended to female subjects and to the area of social acceptance, two new slides were substituted for the others in McClelland's original series. These slides were added to permit the inclusion of female figures and to suggest social relationships between the sexes which were not present in the McClelland series.

One of the substituted slides, which was placed second in the order in the test series, showed a man and woman resting on a rocky beach.[2]

---

[1]Photographs of the four slides are contained in Appendix G.

[2]This slide was copied from a photograph by Edward Weston entitled "Beach Scene". U.S. Camera, 1943. Edited by T. J. Maloney, Duell, Sloan and Pierce, New York, 1942.

The other substituted slide was third in order in the test series and represented a more conventional and achievement-related social situation. It was copied from Murray's Thematic Apperception Test (TAT 2) and portrays a farm scene with two female figures in the foreground and a male plowing a field in background.

The four pages of the test booklets which were provided for the recording of the subjects' stories each bore the following guide questions:

1. What is happening? Who are the persons?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought? What is wanted? By whom?
4. What will happen? What will be done?

n Social Procedures

The n Social procedures were designed to parallel those just described for n Achievement. The ego-involving procedure used stressed the importance of social acceptance within the class room group as a predictor of acceptance in other social situations. In place of the paper and pencil tests used in the n Achievement procedures, the subjects in the ego-involving n Social groups were given folded rating forms which listed the individual as either "A" (accepted) or "R" (rejected). These ratings were purportedly the result of a "secret vote of a committee of the most popular members of the group". The Thematic Apperception Test was administrated after the subjects had examined their own ratings. These ratings had been folded and stapled to the front of the test booklets. The

instructions and procedures for this portion of the n Social procedure were the same as those for the n Achievement groups.

It was recognized that the class room groups used for the n Social experiments are specialized and somewhat casual groupings and not directly comparable to more basic social acceptance situations. It was felt, however, that the data from these groups would be more directly comparable to the results secured with the n Achievement procedures which were based on similar subjects. In addition, emphasis with the n Social procedure was on the assertion that acceptance or rejection within such a group is a good predictor of acceptance in other more permanent social relationships.

n Social Relaxed Groups

The procedures[1] employed in the relaxed n Social groups were comparable to that for the relaxed n Achievement groups except that the three paper and pencil tests[2] preceding the Thematic Apperception Test were omitted in the n Social procedure. It was hoped that by avoiding ego-involvement a low n Social level would be established in these groups.

---

[1] Appendix D contains the complete administration instructions for the n Social relaxed condition.

[2] Appendix F contains a reproduction of the test booklet used in all of the n Social procedures.

n Social Success and Failure Groups

The success or accepted condition and the failure or rejected condition were established within a single class group. One half of the individuals were assigned "accepted" ratings and one half were assigned "rejected" ratings. These ratings were distributed randomly to members of the class on the basis of class rolls secured prior to the day of the experiment. The ratings were entered as "A" or "R" on forms[1] which were folded in such a way that the rating was inclosed and then stapled to the cover of the test booklet. The subject's name was written on the outside of the rating form to make possible the convenient distribution of the test booklets.

The experimenter was introduced by the instructor as a member of the Department of Psychology of the University of Maryland. While the class instructor distributed the test booklets the experimenter made the following remarks[2] in an extemporaneous manner:

> We hope to gather data on several different tests at this time. Although we will take up the test of social relationships as the last item on the schedule, it requires a bit more explanation than the other projects and it might be just as well to discuss this last test as Mr. ..... (name of instructor) distributes the materials for the first two tests. Please leave these test materials closed and face down until we are ready to use them.
>
> The area of social acceptance which we hope to study in our final test is an important one. We have the results of many studies of intelligence, achievement in college, and type of college curriculum in relation to yearly income or final occupational level.

---

[1]This form is reproduced in Appendix H.

[2]The complete instructions for the n Social success and failure groups are reproduced in Appendix E.

However, more important than intelligence or education are the factors involved in social acceptance, popularity, likeableness, or whatever you may choose to call that quality which makes a good friend. Final acceptance or happiness seems to be a matter of being liked or accepted by the social group. You must pass the test of other people's judgment of you. It may well be that your final satisfaction or success in life can best be predicted on the basis of your acceptance by college social groups. We hope to gather in the last test on our schedule some data concerning the characteristics of those of you who rate high on popularity or acceptance with the group and those of you who rate low.

In preparation for this test, ratings have been secured on each member of the group. These ratings were made on the basis of popularity, likeableness, pleasantness - those qualities which make a person nice to have around. Intelligence, money, good school grades, clothes - all other factors were to be disregarded.

The ratings were secured from several students who from careful observation obviously rated high with the rest of the group on these measures of acceptance. The committee selected to make these ratings will of course remain nameless. Some of them are in this group now. They were told to consider each person carefully and to think of that person in relation to the characteristics of likeableness or social acceptability which we have just mentioned.

To make their task easier, the raters were told to imagine that this group had to be reduced immediately to one half of its present size. They were told to classify the names of all the members of this group into two classes. Those who would be retained or who were the most desirable and those who would be left out of the group or who were the least desirable.

Of course, this class is not a permanent social group of the sort that will make up your eventual home, business and other social relationships. However, each of you has had an opportunity to create impressions on others in this group and to form your own opinion of the other members. If on the basis of that impression you have not been accepted by the rest of this group, it is a good indication that for some reason you are not the sort of person who is accepted and liked by others.

To insure that there will be no unintended embarrassment on anyone's part, I will ask you to be very careful that you see only your own rating and no one else's. If you will turn over your test booklets and tear off the folded paper bearing your name, you will be able to see your own rating. It will contain an "A" if you were found acceptable or an "R" if you were rejected or found not acceptable. As soon as you have noted your own rating, tear it up or put it in your pocket. Do not tell anyone your rating or ask them theirs. We need these ratings for the final test, but we wish

> to embarrass no one with the release of any information which by its very nature is private and personal. Please remember this rating - an "A" if you were to be retained in the reduced group, and an "R" if you were to be rejected or left out of the group. We will need the rating later after these tests have been completed.

At the conclusion of these remarks the subjects were instructed to put their name, age, sex, and class in school on their test booklets and the Thematic Apperception Test was administered. The administration of this test was the same as for other experimental groups.

The Nominating Technique

When the final test had been completed in each of the n Social groups, a vote was taken within the group to get some measure of the individuals who actually were rated as most socially acceptable and those who were least acceptable. Due to the time limitations of a class period it was not possible to hold this balloting in any of the n Achievement conditions.

In order to secure the most nearly valid ratings of social acceptability, the following procedure was adopted. At the conclusion of the final test in the booklet each member of the group received a copy of the class roll with each individual's name preceded by a two-digit code number. The subjects were instructed to place their own code number on their test booklets and to erase or tear off the name that they had written on the booklet at the start of the period. The test booklets were then collected and the nominating ballots[1] distributed.

---

[1] A reproduction of this nominating ballot is contained in Appendix H.

At this point the experimenter read an explanation of the purposes of the experiment and stressed the importance of the long term aims of such work. The chance nature of the "A" or "R" ratings was discussed. Every effort was made at this time to justify the earlier issuance of false ratings and information. The subjects were told that it was necessary to secure accurate ratings of each person's social acceptance within the group. They were told that the nominating technique which was to be used for this purpose was designed to assure complete secrecy, and that it would be impossible for anyone's name to be connected with the ballots or test booklets. The experimenter indicated that the ratings would be made by code numbers, and that the roll sheets which listed the code number for each subject also bore serial numbers. The subjects were told that these serial numbers would be checked and that all copies of the roll sheets would be destroyed before any of the sealed nominating ballots were collected. It was hoped that more nearly valid measures of social acceptance could be secured by explaining fully the absolute secrecy of the procedure. The subjects were then asked to list in order the five most socially acceptable individuals in the group and the five least acceptable individuals. The following exact instructions were read by the experimenter:

> List in order in the spaces[1] from 1 to 5 on line A first the best liked person, then the next best liked and so on down to the fifth choice. Remember to use only the code numbers to indicate your selections. Pick those people who are most socially acceptable

---

[1] In some of the smaller groups the number of ratings requested was reduced to three for each category.

> to you on the bases of likeableness and pleasantness. In short, list the five people who you feel make the best friends. In the spaces on line B, list in order the five people who you think are least socially acceptable or who you like the least. Start at space 1 with the individual who is most unacceptable socially or who you would least like to have for a friend and then complete the list in order.

The class rolls were then collected, counted and destroyed and the nominating ballots sealed in unmarked envelopes and collected. Each subject was then given a form letter[1] containing an explanation of the earlier experimental procedure. This was done to assure that no individual would leave the classroom with any incorrect conceptions of the false acceptance ratings which had been distributed by the experimenter.

Scoring Methods and Tests of Reliability

At the heart of any such investigation as the present one are the reliability and the objectivity of the scoring system applied to the projective records. McClelland reports a correlation coefficient of .946 between the total[2] n Achievement scores for 30 subjects on two different scoring occasions. This value indicates a satisfactory stability of the total n Achievement score determined from the subjects' written stories. Also every effort was made throughout the present research to prevent the scorer from being influenced in any way by knowledge of the age, sex, or experimental treatment assigned to the subject whose record was being scored.

---

[1] A reproduction of the form letter distributed is contained in Appendix H.

[2] The method of calculating total n Achievement scores is presented on page 42 of this chapter.

Two main precautions were adopted throughout the scoring procedure to increase objectivity and to decrease the possibility of bias in any of the group results. The first of these involved removing all identifying marks from the test booklet which might be visible to the scorer. The second involved a thorough mixing of the records secured from a minimum of six different experimental sessions without regard to the experimental treatment before scoring was begun.

The actual routine of scoring commenced when the booklets from the several sessions were stamped with a serial number on the reverse side of each page. Following this, the booklets were separated into individual pages. A division was then made of all the stories written in response to any one of the pictures. These four stacks of stories were then thoroughly mixed. Working alone, the scorer read each story and marked the various scoring symbols which applied on a blank card. After the story had been scored, both the card and the story were turned face down and the serial number of the story copied on the card. This process was repeated for each of the four groups of stories. The cards were then sorted according to serial number and the scoring symbols for all four pictures transferred to a single card for further tabulation.

The scoring of the stories was done in accordance with the categories and criteria established by McClelland for scoring such stories for n Achievement[1].

---

[1]The original scoring criteria reported (35, pp. 245-246) have been modified slightly in subsequent communication with the authors. The criteria used in this investigation are reproduced in Appendix I.

The thematic characteristics which were scored and the symbols used to indicate the scoring may be summarized as follows:

Achievement Imagery

(1) Long term, ego ideal achievement imagery was scored gI.
(2) Short term achievement imagery related to the task at hand was scored tI.
(3) Stories containing no achievement imagery were scored as unrelated or U.

Plots or Themas

(1) If achievement imagery is central to the story the plot is scored Ach th.
(2) If achievement related difficulties are of a serious and long term nature the plot is scored D th.

Obstacles

(1) If barriers to achievement success are present, but not the fault of the achiever they are scored dw.
(2) If the barriers to achievement are a result of personal inadequacies of the achiever they are scored dp.

Need

(1) If someone in the story expresses a desire or need to reach an achievement goal it is scored N.

Press

(1) If some person in the story is actively helping the individual to reach his goal it is scored nu P.
(2) If some person in the story is working against the person striving to reach a goal it is scored ho P.

Anticipation of Outcome

(1) If someone in the story anticipates success in reaching a goal it is scored Ga +.
(2) If someone in the story anticipates failure in reaching a goal it is scored Ga -.
(3) If doubt is expressed by some individual in the story concerning the outcome of the achievement activity it is scored Ga ?.

Feelings of Success or Failure

(1) If someone in the story experiences the positive affective state accompanying success it is scored G +.
(2) If someone in the story experiences the negative affective state accompanying failure it is scored G -.

Instrumental Activity

(1) If the individual is taking some action about reaching his goal which results in success it is scored I +.
(2) If the individual is taking some action in an attempt to reach his goal which fails it is scored I -.
(3) If the outcome of such activity is not stated it is scored I ?.

The action taken in these three categories must be stated or described within the body of the story, not merely in the first or last sentences.

A single summary n Achievement score was arrived at for each individual on the basis of the scoring categories just reviewed. McClelland selected the categories which showed a significant increase in frequency from the relaxed to the failure condition in his experiments and assigned them a score of + 1. Those categories which decreased significantly from the relaxed to the failure condition were assigned a score of - 1. The seven positive characteristics were gI, N, D th, I +, Ga + or -, nu P or ho P, and G +. The two negative characteristics were tI and U (1, p. 249). The total n Achievement score was reached by algebraically adding the scores for all four pictures for each subject. The range of total n Achievement scores extended from -4, the minimum score obtainable, to the maximum score recorded of +15.

Reliability of Scoring

The reliability of the scoring of these projective records was in-

vestigated in this study in three different ways. (1) The extent to which the original scorer reproduced his scoring of a record at a later date was measured by rescoring the complete records for 30 subjects. These records were chosen at random from a file of all of the test booklets, and the original scoring symbols were not visible during the rescoring procedure. The index of agreement was computed by dividing twice the agreements by the sum of the items scored on each of two occasions. (2) The extent to which the original scoring of the records agreed with the scoring of another person was computed in this same fashion. An additional 30 records were selected at random from the total file of test booklets for this purpose. (3) The results of the scoring by the second scorer were used for another expression of scoring reliability. The total n Achievement scores determined by the original scorer were correlated with the scores obtained by the second scorer using the product moment method.

The results of the nominating procedure were tabulated in a rather direct fashion. Each individual was credited with five points for each nomination in the first position, four points for each nomination in the second position, three for third choice, two for a fourth choice, and one for a listing in the fifth position. Negative scores of equal magnitude were credited for non-acceptable or rejected nominations in the positions from one through five. A minus score of five was credited for a nomination in the first position, minus four for a nomination in the second position, and so on down to a minus score of one for a nomination as non-acceptable in the fifth position. All of the subjects in the

n Social procedures received one or more listings on the nominating ballots. An individual's final acceptance score was computed by an algebraic addition of these scores. On the basis of this total acceptance score, the subjects in any one class group were classified as being in the accepted half of the group or in the rejected half of the group.

Characteristics of the Subjects

The 445 subjects used were students in regular attendance in elementary psychology, human development, and history courses in one of the following institutions:

1. The University of Maryland
2. Beaver College
3. Muhlenberg College
4. University of Delaware
5. George Washington University

The experiments were conducted during regular class periods from August, 1950, through January, 1951. Tables I, II and III indicate the number of individuals subjected to each of the experimental procedures, their sexes, average ages, and institutional affiliations.

Table I

Subjects for n Achievement Procedures Attending Day Classes Showing Sex, Mean Age, and College Affiliation

Group	Male	Female
Relaxed	38 Subjects Mean Age 21.4 U. of Md. U. of Del.	21 Subjects Mean Age 18.9 U. of Md. U. of Del.
Failure	41 Subjects Mean Age 22.6 U. of Md.	14 Subjects Mean Age 18.8 U. of Md.
Success	50 Subjects Mean Age 21.5 U. of Md.	34 Subjects Mean Age 19.6 U. of Md.

Table II

Subjects for n Achievement Procedures Attending Evening or Extension Classes Showing Sex, Mean Age, and College Affiliation

Group	Male	Female
Relaxed	32 Subjects Mean Age 32.7 U. of Md. Geo. Washington U.	32 Subjects Mean Age 29.0 U. of Md. Geo. Washington U.
Failure	17 Subjects Mean Age 30.9 U. of Md. Geo. Washington U.	22 Subjects Mean Age 33.4 U. of Md. Geo. Washington U.

Table III

Subjects for Three n Social Procedures Indicating Sex, Mean Age, and College Affiliation

Group	Male	Female
Relaxed	22 Subjects Mean Age 22.7 Muhlenberg C. U. of Del.	37 Subjects Mean Age 19.4 Beaver C. U. of Del.
Failure (rejected)	17 Subjects Mean Age 20.3 Muhlenberg C. U. of Del.	26 Subjects Mean Age 19.2 Beaver C. U. of Del.
Success (accepted)	18 Subjects Mean Age 21.5 Muhlenberg C. U. of Del.	25 Subjects Mean Age 19.2 Beaver C. U. of Del.

It may also be noted that subjects in the n Social groups were drawn from institutions with total campus attendance of 1600 or less. Muhlenberg College enrolls only male students and Beaver College enrolls only female students. Both of these schools have enrollments of less than 1000 students. The remaining subjects for the n Social procedure were from classes at the University of Delaware chosen in such a way that the groups were almost entirely of one sex. All of the n Social groups were run late in the first semester at a time when class members had had the maximum opportunity to become well acquainted. It was hoped that by using subjects from smaller colleges for the n Social procedures and by conducting these experiments late in the semester the effect of the

fictitious "committee's" ratings as "accepted" or "rejected" would be maximized. In addition it was felt that the nominating technique would yield more valid results under these conditions since the various class members had had a chance to achieve some degree of familiarity with each other.

A single group of male and female subjects in the relaxed n Achievement condition was from the University of Delaware. The remaining n Achievement groups were made up of students from the University of Maryland and from George Washington University. The n Achievement groups from day classes were students on the College Park campus of the University of Maryland enrolled in introductory psychology classes. Both male and female subjects were in the same room for each of these n Achievement procedures. The evening school students subjected to the n Achievement procedures were enrolled in elementary psychology courses in the University of Maryland College of Special and Continuation Studies in Baltimore or in the District of Columbia, or were members of evening classes at George Washington University.[1] The average age of the evening school students was considerably higher than for any of the day groups and the data for these subjects is reported separately. Subjects in all of the experimental groups were drawn from a wide range of curricula.

During the course of these experiments certain observations were

---

[1] A fifth picture was used in the Thematic Apperception Test for George Washington University subjects. Since it was not possible due to the time limitations to use this final picture of the series with any other groups, data for this picture will not be reported.

made by the experimenter, by the regular classroom instructor, and by the subjects. Although no systematic records were kept, it seems worthwhile to mention some of these comments and the impressions they helped to create regarding the experimental procedures. Among the strongest of these impressions was the attention given to the experimenter and the tension aroused by the ego involving procedure in the n Social groups. These subjects became almost unnaturally silent. When they were told to open and read their own ratings, they acted rapidly and with obvious changes in facial expression on the part of many subjects. Subsequent conversation with some of these subjects suggested that for the most part the accepted and rejected ratings were believed, and the existence of the fictional committee seemed to be accepted. Few subjects claimed to have disbelieved the ratings although a considerable number claimed that they felt the rating was wrong and that they enjoyed a more accepted status than the rating indicated. In general under all the ego-involved procedures, the subjects worked quietly and intently on their tests. The sole exception to this was in the n Achievement success group where it seems that a detectable relaxation took place in many of the subjects following the reading of the low norms for Test I. In the relaxed groups, the subjects seemed to be interested in their tasks and to enjoy them in many cases, and in addition the comments and remarks made seemed to support the designation of relaxed for these subjects.

Throughout the experiments every effort was made to keep the nature of the procedure secret until the final experiment had been conducted in any one location. In most instances, this was accomplished rather easily

by running the experimental groups on consecutive hours of the same day so that there was little time for any interchange of information. In addition, in all cases, the relaxed groups were either run before or simultaneously with the failure or success groups. No significant disclosure of the experimental procedure was made to the relaxed groups. The regular class instructors cooperated in this effort by releasing no advanced information concerning the purposes or methods of the experiment.

In conclusion it might be noted that following all of the ego-involved experimental sessions attempts were made by the experimenter to justify the importance of the research to the subjects. It was explained that the false ratings or false norms were the only way in which we could gather necessary information and that they were not given out as a mere whim of a graduate student. Female subjects in the success and failure - n Social procedures seemed to show the strongest initial reactions to the experimental procedures. However, even with these subjects there seemed to be an almost complete acceptance of the experimental procedure with little, if any, evidence of dissatisfaction.

CHAPTER III

RESULTS

The data from each of the experimental treatments described in Chapter II will be presented in this chapter. The projective responses to each treatment will be summarized in a group mean n Achievement or mean n Social score. In addition, data for all groups of subjects will be presented separately for each of the scoring categories of the Thematic Apperception Test.

Subsequent divisions of this chapter will be devoted to the results of the various experiments in the following order: (1) the re-scoring reliability of the Thematic Apperception Test; (2) the repetition of McClelland's n Achievement procedures; (3) the extension of these procedures to more mature subjects; (4) the differential responses of subjects to the n Achievement and the n Social procedures; (5) the thematic characteristics of stories written by male and by female subjects within the n Achievement procedures; (6) the thematic characteristics of stories written within the n Social procedures; and (7) the differential Thematic Apperception Test behavior of subjects who are accepted or rejected by their group.

The Reliability of Scoring the Thematic Apperception Test

The basic importance of a reliable scoring system to the current investigation of projective behavior has already been noted. The tests

of reliability which were adopted for this purpose and described in the preceding chapter yielded generally satisfactory results. The first measure of re-score reliability was based on the total need score for each subject. Since mean n Achievement and mean n Social scores were used for the initial comparisons between groups, the reliability of the total need scores was tested first. A Pearson product-moment correlation coefficient of .93 was found between the original total need scores and the total need scores from a re-scoring of these records by the same scorer. A re-scoring reliability coefficient of .82 was obtained by the same method between the original total need scores and the scores assigned by a second scorer.

Since many comparisons were to be made between the separate thematic characteristics occurring in the various experimental groups, the stability of these scoring categories was also tested. An index of agreement of 89% was secured between the first and second scoring of thirty records by the original scorer. A second index of agreement of 84% was determined between the original scores of thirty records and the scores assigned by a second scorer. These coefficients are similar to those reported by McClelland and indicate an adequate level of consistency for the purposes of this investigation.

The Repetition of McClelland's Procedure

The initial experiment of this investigation was the repetition of McClelland's procedure for arousing n Achievement and scoring projective records for the intensity of this need. Male college students in regular

day attendance were employed as subjects. They will be referred to as day students in later discussions. The total n Achievement scores for these subjects are presented in Table IV together with the results reported by McClelland.

Table IV

Mean n Achievement Scores for Male Subjects in the Relaxed and Failure Conditions as Reported by McClelland and as Determined in a Repetition of the McClelland Procedures

	McClelland		Repetition	
Condition	N	n Score	N	n Score
Relaxed	39	-1.00	38	-1.46
Failure	39	5.82	41	3.46
Difference		6.82	Difference	4.92
Critical Ratio		7.25	t value	5.37
P value		$<.01$	P value	$<.01$

The mean need scores presented in Table IV indicate that McClelland's findings were confirmed in the present investigation. In each experiment it is evident that the ego-involving procedures, based on failure in a purported test of intelligence, resulted in higher mean need scores in the failure condition than in the relaxed condition. The significance of this difference was at the 1% level of confidence. In this comparison, and in other comparisons between different experimental conditions,

the significance of the difference was calculated in the following manner. The primary reference group for examining changes in projective behavior resulting from experimental manipulation was the relaxed condition. The differences between the mean need score for this experimental condition and the mean need scores for the success and failure conditions were tested for significance. The calculation of the t value was based on the pooling of the degrees of freedom and the sums of squares[1] for the two groups under comparison. The separate thematic categories scored for the relaxed and failure conditions reported in Table IV were also compared with McClelland's findings. Chi-square values were calculated for the differences in the frequency of occurrence of specific thematic categories between the relaxed and the failure conditions. These data are reported in Tables V and VI along with the percentage of occurrence and the chi-square values reported by McClelland. The population of stories is the base for statistical values derived from this and other analyses of the separate scoring categories. Since each subject produced four stories, the population of stories is the product of four and the number of subjects.[2]

---

[1]These statistics and other intermediate values employed in testing the significance of the findings of the investigation are contained in Appendix J.

[2]One or at most two individuals in some of the experimental groups failed to respond to one of the pictures. This reduced the story population accordingly. Total need score was calculated for these subjects by pro-rating the need score for the record on the basis of the scores on the remaining pictures. These omissions are noted in Appendix J.

Table V

The Number and Percentage of Achievement-Related Stories Written by Male Subjects in the Relaxed and Failure Conditions in the Repetition of McClelland's Procedure and the Percentage of Such Stories Reported by McClelland

	Relaxed Cond.			Failure Cond.			Difference[1]	
Type of Imagery	Repetition N	Repetition %	McC. %	Repetition N	Repetition %	McC. %	Repetition Chi-sq.	McC. Chi-sq.
task:								
tI	66	44.0	46.8	44	26.8	35.9	10.15*	3.82**
general:								
gI	21	14.0	16.7	72	43.9	43.1	33.60*	35.16*
unrelated:								
U	63	42.0	36.5	48	29.3	16.0	5.56**	16.94*

McClelland reported two thematic characteristics which decreased significantly in frequency from the relaxed to the failure conditions. These categories were task involved (tI) and unrelated (U) stories (Table V). Similar differences, at the 1% and 5% levels of confidence, respectively, were found for these categories in the repetition of the n Achievement procedures. McClelland reported seven thematic characteristics which increased in frequency from the relaxed to the failure conditions. His finding for the first of these categories, general imagery (gI) was confirmed at the 1% level of confidence.

[1]Chi-square with one degree of freedom is 3.84 and 6.64 at the .05 and .01 levels of significance, respectively. A single asterisk (*) indicates significance at the .01 level and a double asterisk (**) indicates significance at the .05 level. This applies to all of the chi-squares reported in this thesis.

Table VI

The Number and Percentage[1] of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male Subjects in the Relaxed and Failure Conditions in the Repetition of McClelland's Procedure and the Percentage of these Characteristics Reported by McClelland

	Relaxed Cond.			Failure Cond.			Difference[2]	
Type of Imagery	Repetition N	Repetition %	McC. %	Repetition N	Repetition %	McC. %	Repetition Chi-sq.	McC. Chi-sq.
Obstacle:								
dw	16	18.4	22.2	28	24.1	13.0	.97	3.41
dp	5	5.7	12.1	9	7.8	17.6	.31	--
Plot:								
Ach th	48	55.2	59.6	65	56.0	63.4	--	--
D th	8	9.1	6.1	32	27.6	19.1	10.63*	8.11*
Need:								
N	22	25.3	21.2	63	54.3	44.3	17.21*	13.30*
Ant. Resp:								
Ga+ or Ga-	7	8.0	15.2	8	9.0	35.9	.10	12.33*
Ga?	17	19.5	6.1	11	9.5	8.4	4.23**	--
Instr. Res:								
I +	5	5.7	9.1	28	24.1	31.3	12.35*	16.29*
I -	8	9.1	7.1	13	11.2	2.3	--	--
I ?	6	6.9	6.1	3	2.6	7.6	--	--
Press:								
ho P or nu P	8	9.2	10.1	22	19.0	22.1	3.77	5.32*
Goal Res:								
G +	3	3.4	4.0	7	6.0	25.2	.71	18.61*
G -	2	2.3	13.3	2	1.7	26.0	--	--

[1]The percentages for these thematic characteristics were based on the total number of achievement stories (tI plus gI).

[2]A dash (--) indicates that either the frequencies of the categories or the differences between the experimental conditions were too small to justify the use of chi-square.

The remaining six thematic characteristics (Table VI) were: deprivation thema (D th); statement of need (N); anticipatory goal response either positive or negative (Ga + or Ga -); successful instrumental response (I +); hostile or nurturant press (ho P or nu P); and positive goal response (G +). His findings were confirmed at the 1% level of confidence for N, D th, and I +. The changes noted in this investigation in nu P and ho P were in the same direction as those reported by McClelland, but were at the 10% level of confidence (chi-square value of 3.77). Two categories, G + and Ga + or Ga -, did not show the changes between the relaxed and failure conditions which were reported by McClelland for his subjects. Anticipatory goal response with doubt expressed as to the attainment of the goal (Ga ?) was found to decrease in frequency between the relaxed and the failure conditions in the present investigation. This change, which was at the 5% level of confidence, was not found in the original n Achievement experiments.

Several of the scoring categories were reported by McClelland as remaining unchanged between the relaxed and the failure conditions. While these categories were not employed in the scoring system developed for the total need score, it is of some interest to note the frequencies of occurrence of these categories in the repetition of McClelland's procedures. The categories which were reported by McClelland as being unchanged between the two experimental conditions were: the two obstacle categories (dw and dp); achievement thema (Ach th); unsuccessful and doubtful instrumental responses (I - and I ?); negative goal responses (G -); and anticipatory goal responses of doubtful outcome (Ga ?). It has already been noted that in the present investigation Ga ? was

found to decrease in frequency from the relaxed to the failure condition. All other scoring categories, however, were similar in frequency of occurrence to those reported by McClelland and did not shift significantly from the relaxed to the failure condition.

In general, the findings of McClelland concerning the induction and measurement of n Achievement in male subjects were confirmed by the results secured in this repetition of his procedures. Changes in Thematic Apperception Test responses between the relaxed and the failure conditions were similar to those reported by McClelland when expressed as mean n Achievement scores or when analyzed in terms of the separate thematic characteristics.

The Extension of the n Achievement Procedures to More Mature Subjects

The repetition of the McClelland procedures reported in the preceding section was based on experiments with male college undergraduates who were in regular attendance in day classes. The following three tables compare the results secured with these students with the data for more mature evening and extension division students. These subjects were, for the most part, employed in full time positions and were considerably older than the day students. The mean need scores and the thematic characteristics of the stories written by these two groups of subjects within both the relaxed and the failure conditions are presented in Tables VII, VIII and IX. The changes in mean need scores between the relaxed and the failure conditions shown in Table VII were very similar for male subjects in day classes and for the more

Table VII

Mean n Achievement Scores and Chronological Ages for Male Subjects in Day and Evening College Attendance for the Relaxed and Failure Conditions

	Day Subjects			Eve. Subjects			Day vs. Evening		
Condition	N	Mn. Age	n Score	N	Mn. Age	n Score	Diff.	t value	P value
Relaxed	38	21.4	-1.46	32	32.7	-.56	.90	1.22	>.20
Failure	41	22.6	3.46	17	30.9	3.47	.01	--	--
Rel. vs. Fail.									
Difference			4.92			4.03			
t value			5.37			2.92			
P value			< .01			< .01			

mature evening school students. The differences between the mean need scores for the day and evening groups were not statistically significant for either the failure condition or the relaxed condition. However, an examination of the separate scoring categories from which these mean need scores were derived reveals some differences between the two groups of subjects. In Table VIII it may be noted that the evening students did not display as large a decrease in task imagery (tI) in the failure condition as did the day school subjects. The evening school subjects did, however, show a slightly greater decrease in the number of unrelated stories (U) in the failure condition than did the day school subjects. The absolute frequency of each of the thematic characteristics listed in Table VIII changed in the same direction from the relaxed to

Table VIII

The Number and Percentage of Achievement-Related Stories Written by Male Evening School Subjects and the Percentage of Achievement-Related Stories Written by Male Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Cond.			Failure Cond.			Difference	
Type of Imagery	Evening N	Evening %	Day %	Evening N	Evening %	Day %	Eve. Chi-sq.	Day Chi-sq.
task:								
tI	43	33.9	44.0	20	29.4	26.8	.40	10.15*
general:								
gI	23	18.1	14.0	30	44.1	43.9	15.13*	33.60*
unrelated:								
U	61	48.0	42.0	18	26.5	29.3	8.54*	5.56**

the failure condition for both day and evening school students.

The additional thematic characteristics which occur within the achievement-related stories are given in Table IX. Certain differences in the responses of the day and evening school students are apparent in this table. There was an increase in the frequency of achievement thema (Ach th) in the failure condition for evening school students which did not occur in the day school group. The other plot characteristic, deprivation thema (D th), also differed for the day and evening school subjects. Day school subjects showed a significant increase in the frequency of this category between the relaxed and the failure conditions, while there was no change in this category for the evening school groups. The more mature subjects also failed to show any difference in successful instrumental response (I+) or in doubtful anticipatory

Table IX

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Evening School Subjects and the Percentage of Such Stories Written by Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Cond.			Failure Cond.			Difference	
Type of Imagery	Evening N	Evening %	Day %	Evening N	Evening %	Day %	Eve. Chi-sq.	Day Chi-sq.
Obstacle:								
dw	13	19.7	18.4	11	22.0	24.1	--	.97
dp	7	10.6	5.7	2	4.0	7.8	--	.31
Plot:								
Ach th	36	54.5	55.2	35	70.0	56.0	2.86	--
D th	12	18.2	9.1	11	22.0	27.6	.27	10.63*
Need:								
N	18	27.3	25.3	19	38.0	54.3	1.51	17.21*
Ant. Res:								
Ga + or Ga -	9	13.7	8.0	5	10.0	9.0	--	.10
Ga ?	2	3.0	19.5	1	2.0	9.5	--	4.23**
Instru. Res:								
I +	17	25.7	5.7	12	24.0	24.1	--	12.35*
I -	5	7.6	9.1	1	2.0	11.2	--	--
I ?	0	0.0	6.9	3	6.0	2.6	--	--
Press:								
ho P or nu P	8	12.1	9.2	15	30.0	19.0	5.72**	3.77
Goal Res:								
G +	0	0.0	3.4	5	10.0	6.0	--	--
G -	4	6.1	2.3	4	8.0	1.7	--	--

goal response (Ga?) between the relaxed and failure conditions. The remaining thematic characteristics are similar in frequency of occurrence for both of the experimental conditions with day and with evening school subjects.

The overall picture for the responses of male subjects to the n Achievement procedures seems to be a consistent one. Subjects in the failure condition write stories which differ from those produced in the relaxed condition for both the day and evening school groups. Although certain variations do exist for some of the thematic characteristics, the most important categories, those which occur most frequently in stories and therefore contribute most to the final need score, remain approximately the same. Among these important thematic characteristics are unrelated stories (U) and general involvement (gI).

The mean n Achievement scores for female subjects from day and evening classes for the relaxed and failure conditions of the n Achievement procedures are presented in Table X. The mean need scores for the younger day school subjects did not differ significantly from the mean scores for the more mature evening school subjects in either the relaxed or the failure conditions. It may also be noted that there was no significant difference in mean need scores between the relaxed condition and the failure condition within either the younger or more mature experimental groups.

The differences in the separate scoring categories between the relaxed and the failure conditions for day and for evening school female subjects are contained in Tables XI through XIV. It may be

Table X

Mean n Achievement Scores and Chronological Ages for Female Subjects in Day and Evening Class Attendance for the Relaxed and the Failure Conditions

	Day Subjects			Eve. Subjects			Day vs. Eve.		
Condition	N	Mn. Age	n Score	N	Mn. Age	n Score	Diff.	t value	P value
Relaxed	21	18.9	1.24	31	29.0	1.97	.73	.65	>.50
Failure	14	18.8	.93	22	33.4	.50	.43	.38	>.70
Rel. vs. Fail.									
Difference			.31			1.47			
t value			.24			1.25			
P value			>.80			>.20			

noted that the frequency of occurrence of most of the scorable thematic characteristics is similar for both the day and evening school subjects. The three most important scoring categories, task involvement (tI), general involvement (gI), and unrelated stories (U), are presented in Tables XI and XII. An inspection of these tables reveals no significant difference between the day and evening groups or between the relaxed and the failure conditions for either of these groups. In Tables XIII and XIV it may be noted that achievement thema (Ach th) did occur more frequently in the more mature subjects. There was, however, no significant difference in the occurrence of this thematic characteristic between the relaxed and failure conditions within either the day or the evening groups. Hostile or nurturant press (ho P or nu P) also occurred with greater frequency in the evening school subjects. However, it did not differ significantly in frequency between the relaxed and failure conditions for the evening school subjects or for the day school subjects.

With these exceptions, the performance of younger and of more mature female subjects on the Thematic Apperception Test was quite similar. Differences between the data for these female groups and those previously presented for male subjects will be considered in detail in a subsequent division of this chapter.

Table XI

The Number and Percentage of Achievement-Related Stories Written by Female Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Cond.		Failure Cond.		Difference
Type of Imagery	Day Subjects N	%	Day Subjects N	%	Chi-square
task:					
tI	29	34.9	18	32.1	.12
general:					
gI	21	25.3	19	33.9	1.21
unrelated:					
U	33	39.8	19	33.9	.49

Table XII

The Number and Percentage of Achievement-Related Stories Written by Female Evening School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Cond.		Failure Cond.		Difference
Type of Imagery	Eve. Subjects N	%	Eve. Subjects N	%	Chi-square
task:					
tI	47	38.5	35	39.8	—
general:					
gI	36	29.5	22	25.0	.52
unrelated:					
U	39	32.0	31	35.2	.24

Table XIII

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Female Day School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Cond.		Failure Cond.		Difference
Type of Imagery	Day Subj. N	%	Day Subj. N	%	Chi-square
Obstacle:					
dw	13	26.0	10	27.0	.01
dp	3	6.0	2	5.4	.01
Plot:					
Ach th	20	40.0	17	46.0	.30
D th	14	28.0	6	16.2	1.67
Need:					
N	25	50.0	12	32.4	2.68
Ant. Res:					
Ga + or Ga -	5	10.0	5	13.5	.26
Ga ?	0	0.0	8	21.6	—
Instr. Res:					
I +	13	26.0	5	13.5	2.03
I -	3	6.0	4	11.0	—
I ?	1	2.0	1	2.7	—
Press:					
ho P or nu P	9	18.0	2	5.4	3.05
Goal Res:					
G +	1	2.0	0	0.0	—
G -	3	6.0	0	0.0	—

Table XIV

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Female Evening School Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Cond.		Failure Cond.		Difference
Type of Imagery	Evening Subj. N	%	Evening Subj. N	%	Chi-square
Obstacle:					
dw	19	22.9	18	31.6	1.31
dp	13	15.7	2	3.5	5.22**
Plot:					
Ach th	53	63.9	39	68.4	.31
D th	12	14.5	9	15.8	—
Need:					
N	35	42.2	13	22.8	5.62**
Ant. Res:					
Ga / or Ga -	7	8.4	10	17.6	2.63
Ga ?	3	3.6	7	12.3	—
Instr. Res:					
I /	26	31.3	9	15.8	4.35**
I -	8	9.6	4	7.0	—
I ?	2	2.4	4	7.0	—
Press:					
ho P or nu P	26	31.4	14	24.5	.76
Goal Res:					
G /	3	3.6	0	0.0	—
G -	3	3.6	3	5.3	—

A Comparison of the Results of Two Different Need-Arousing Procedures: n Achievement and n Social

One of the important areas of investigation of the current experiments was an examination of the relationships between Thematic Apperception Test responses and the particular need-arousing procedure employed. The mean need scores were calculated for male subjects in the relaxed, failure, and success conditions of two need-arousing procedures, n Achievement and n Social. These data are presented in Tables XV and XVI. All subjects in the n Social procedures were day school students. The comparisons between the results for the n Social procedures and the n Achievement procedures in these and subsequent tables are therefore limited to day school groups.

Table XV

Mean Need Scores for Male Subjects in the Relaxed, Failure, and Success Conditions of the n Social and n Achievement Procedures

Condition	n Ach. Mn. Score	n Soc. Mn. Score	Diff.	t value	P value
Relaxed	-1.46	-.45	1.01	1.32	>.10
Failure	3.46	.53	2.93	2.20	<.05
Success	.63	1.00	.37	1.19	>.20

Table XVI

Significance of the Differences Between the Mean Need Scores for Male Subjects in the Relaxed, Failure, and Success Conditions for the n Achievement Procedures and for the n Social Procedures

	Rel. vs. Fail.			Rel. vs. Succ.			Fail. vs. Succ.		
Procedure	Diff.	Values t	P	Diff.	Values t	P	Diff.	Values t	P
n Ach.	4.92	5.37	<.01	2.09	3.01	<.01	2.83	2.77	<.01
n Soc.	.98	.95	>.30	1.45	1.43	>.10	.47	.38	>.70

The mean need scores for the relaxed and the success conditions (Table XV) did not differ significantly between the n Achievement and the n Social procedures. However, the mean need score for the failure condition of the n Achievement procedures was higher, at the 1% level of confidence, than the mean need score for the failure condition of the n Social procedures. It is apparent from the data presented in Table XVI that male subjects failed to show any significant difference in mean need score for any of the n Social conditions. Male subjects in the n Achievement procedures secured higher mean need scores in the success condition than they did in the relaxed condition. The mean need score for male subjects in the failure condition was higher than the scores for both the relaxed and the success conditions.

The results for female subjects in the two need-arousing procedures are summarized in Tables XVII and XVIII. The mean need scores for these groups indicate an almost complete reversal of the results yielded by male subjects. The female subjects showed no significant differences

Table XVII

Mean Need Scores for Female Subjects in the Relaxed, Failure, and Success Conditions of the n Social and the n Achievement Procedures

Condition	n Ach. Mn. Score	n Soc. Mn. Score	Diff.	t value	P value
Relaxed	1.24	2.24	1.00	1.18	>.20
Failure	.93	3.85	2.92	2.75	<.01
Success	.71	5.08	4.37	4.50	<.01

Table XVIII

Significance of the Differences Between the Mean Need Scores for Female Subjects in the Relaxed, Failure, and Success Conditions for the n Achievement Procedures and for the n Social Procedures

	Rel. vs. Fail.			Rel. vs. Succ.			Fail. vs. Succ.		
		Values			Values			Values	
Procedure	Diff.	t	P	Diff.	t	P	Diff.	t	P
n Ach.	.31	.24	>.80	.53	.59	>.50	.23	.29	>.70
n Soc.	1.60	2.02	<.05	2.74	2.79	<.01	1.23	1.12	>.20

in mean need scores between different experimental conditions in the n Achievement procedures. They did, however, secure higher mean need scores in the failure and the success conditions of the n Social procedures than they did in the relaxed condition.

The Thematic Apperception Test behavior was quite different for male and female subjects in the two need-arousing procedures when expressed as a mean need score. Male subjects secured higher mean need scores in the success and failure conditions of the n Achievement procedures than they did in the relaxed condition. Mean need scores for male subjects in the n Social procedures failed to reflect significant differences in response to any of the experimental conditions. The mean need scores for female subjects were higher for the success and failure conditions of the n Social procedures than they were for the relaxed condition. The mean need scores of female subjects remained unchanged in all of the experimental procedures designed to arouse n Achievement.

A Comparison of Thematic Apperception Test Responses of Male and Female Subjects to the n Achievement Procedures

Differences in the mean need scores between male and female subjects in the two need-arousing procedures have already been demonstrated. A further analysis of the sex differences in response to the n Achievement procedures will be made by comparing the separate scoring categories of the Thematic Apperception Test for male and female subjects. Tables XIX and XX present the percentage of occurrence of each of the thematic characteristics which was scored for male and female subjects in the n Achievement procedures.

Table XIX

The Percentage of Achievement-Related Stories Written by Male and Female Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Condition		Failure Condition		Difference	
Type of Imagery	Male %	Female %	Male %	Female %	Male Chi-sq.	Female Chi-sq.
task:						
tI	44.0	34.9	26.8	32.1	10.15*	.12
general:						
gI	14.0	25.3	43.9	33.9	33.60*	1.21
unrelated:						
U	42.0	39.8	29.3	33.9	5.56**	.49

Table XX

The Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male and Female Subjects in the Relaxed and Failure Conditions of the n Achievement Procedures

	Relaxed Condition		Failure Cond.		Difference	
Type of Imagery	Male %	Female %	Male %	Female %	Male Chi-sq.	Female Chi-sq.
Obstacle:						
dw	18.4	26.0	24.1	27.0	.97	.01
dp	5.7	6.0	7.8	5.4	.31	.01
Plot:						
Ach th	55.2	40.0	56.0	46.0	.01	.31
D th	9.1	28.0	27.6	16.2	10.63*	1.67
Need:						
N	25.3	50.0	54.3	32.4	17.20**	2.68
Ant. Res:						
Ga + or Ga -	8.0	10.0	6.9	13.5	.10	.26
Ga ?	19.5	0.0	9.5	21.6	4.23**	—
Instr. Res:						
I +	5.7	26.0	24.1	13.5	12.35*	2.02
I -	9.1	6.0	11.2	11.0	.02	.66
I ?	6.9	2.0	2.6	2.7	2.18	—
Press:						
ho P or nu P	9.2	18.0	19.0	5.4	3.77	3.05
Goal Res:						
G +	3.4	2.0	6.0	0.0	.71	—
G -	2.3	6.0	1.7	0.0	--	2.30

From the data presented in Tables XIX and XX it is apparent that there were few changes in the response categories between the relaxed and failure conditions which were the same for male and female subjects. It has previously been demonstrated that female subjects did not show significant differences in Thematic Apperception Test responses between the relaxed and the failure conditions of the n Achievement procedures. The direct comparison of the results for male and female subjects suggests additional differences in the behavior of male and female subjects in the n Achievement procedures.

Certain scoring categories such as need (N), successful instrumental response (I +) and deprivation thema (D th), decreased in frequency from the relaxed to the failure condition for female subjects, whereas for male subjects there was a significant increase in the frequency of occurrence of these characteristics from the relaxed to the failure condition. The category differences were not significant for female subjects when considered separately. However, the mean need score for the relaxed condition reflects the higher frequency of occurrence of these characteristics. The mean need score for females in the relaxed condition of the n Achievement procedures was significantly higher than for male subjects. This was also true within the n Social procedures. The relaxed condition mean need scores for male and female subjects for both the n Social and the n Achievement procedures are compared in Table XXI.

Table XXI

Mean Need Scores for Male and Female Subjects in the Relaxed Condition of the n Social and the n Achievement Procedures

	Male Subj.	Female Subj.			
Procedure	Mn. n Score	Mn. n Score	Diff.	t value	P value
n Achievement	-1.46	1.24	2.70	3.10	<.01
n Social	-.45	2.24	2.69	3.35	<.01

Table XXII

The Percentage of Achievement-Related Stories Written by Male and Female Subjects in the Relaxed Condition and the Number and Percentage of Such Stories Written by Male and Female Subjects in the Success Condition of the n Achievement Procedures

	Relaxed Cond.		Success Cond.			Difference	
Type of Imagery	Male %	Female %	Male N	Female N	Female %	Male Chi-sq.	Female Chi-sq.
task: tI	44.0	34.9	91	45.7	63 50.0	.10	4.74**
general: gI	14.0	25.3	46	23.1	31 22.8	4.58**	.18
unrelated: U	42.0	39.8	62	31.1	37 27.2	4.37**	3.73

Table XXIII

The Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male and Female Subjects in the Relaxed Condition and the Number and Percentage of Such Stories Written by Male and Female Subjects in the Success Condition of the n Achievement Procedures

	Relaxed Cond.		Success Cond.				Difference	
Type of Imagery	Male %	Female %	Male N	Male %	Female N	Female %	Male Chi-sq.	Female Chi-sq.
Obstacle:								
dw	18.4	26.0	33	24.1	29	29.3	1.01	.17
dp	5.7	6.0	2	1.4	10	10.1	--	--
Plot:								
Ach th	55.2	40.0	92	67.1	62	62.6	3.26	6.87*
D th	9.1	28.0	8	5.8	8	8.1	.90	10.47*
Need:								
N	25.3	50.0	59	43.1	52	52.0	7.28*	--
Ant. Res:								
Ga ≠ or Ga −	8.0	10.0	20	14.6	5	5.0	3.40	1.30
Ga ?	19.5	0.0	4	2.9	5	5.0	17.30*	--
Instr. Res:								
I ≠	5.7	26.0	40	29.2	18	18.2	18.23*	1.23
I −	9.1	6.0	10	7.3	9	9.1	--	--
I ?	6.9	2.0	4	2.9	6	6.1	--	--
Press:								
no P or nu P	9.2	18.0	12	8.7	15	15.2	--	.20
Goal Res:								
G ≠	3.4	2.0	0	0.0	0	0.0	--	--
G −	2.3	6.0	5	3.6	8	8.1	--	--

Sex differences in the responses to the n Achievement procedures may also be seen in a comparison of the data for the relaxed and success conditions. These data are contained in Tables XXII and XXIII. Only the percentages are included for the relaxed condition in these tables since complete data are contained in an earlier division of this chapter.

Several sex differences in Thematic Apperception Test responses may be seen in the two preceding tables. It has already been demonstrated (Tables XVII and XVIII) that the mean need score for female subjects for the success condition was not significantly different from the mean score for the relaxed condition. For male subjects, however, the mean need score in the relaxed condition was significantly lower than the mean need score in the success condition of the n Achievement procedures (Tables XV and XVI). An examination of the individual scoring categories reveals that females in the success condition showed increases in the frequency of occurrence of task involvement (tI) while male subjects showed no changes in this category. Females showed no changed in expressed need (N) although this category increased for male subjects. Successful instrumental response (I $\nearrow$) also differentiated the male and female subjects. This characteristic was more frequent for male subjects in the success condition than in the relaxed condition, and decreased in frequency for female subjects in the success condition. Deprivation thema (D th) decreased in frequency for female subjects in the success condition in relation to similar subjects in the relaxed condition, but no such change was noted for male groups.

There were two important points of similarity between the thematic changes from the relaxed to the success conditions for both male and female subjects. Both sexes showed an increase in the frequency of occurrence of achievement thema (Ach th) in the success condition compared with the relaxed condition. There was also a decrease in the frequency of unrelated stories (U) for both sexes in the success condition when compared with the relaxed condition. The Ach th category, however, did not enter into the computation of mean n Achievement scores.

It is apparent from these data that male and female subjects do respond differently (in terms of scorable Thematic Apperception Test categories) to the various n Achievement procedures. In addition, it may be noted that the female subjects produced slightly different Thematic Apperception Test stories in the three n Achievement conditions, although these differences were not reflected in the mean n Achievement scores in a significant fashion.

The Thematic Characteristics of Stories in the Relaxed, Failure and Success Conditions of the n Social Procedures

The mean need scores for male and female subjects in the relaxed, failure, and success conditions of the n Social procedures have already been presented (Tables XV and XVII). The following four tables will present the data for the separate scoring categories for the same subjects.

The higher mean need scores for female subjects in the success and failure conditions of the n Social procedures resulted from an

Table XXIV

The Number and Percentage of Achievement-Related Stories Written in the Relaxed, Failure and Success Conditions by Female Subjects in the n Social Procedures

	Relaxed Cond.		Failure Cond.		Success Cond.		Differences	
Type of Imagery	N	%	N	%	N	%	Rel. vs Fail.	Fail. vs Succ.
task:								
tI	70	47.3	44	42.3	37	37.0	.71	.60
general:								
gI	46	31.1	42	40.4	45	45.0	2.33	.44
unrelated:								
U	32	21.6	18	17.3	18	18.0	.61	--

increased frequency of several thematic characteristics which did not differ significantly between conditions when considered separately. The categories which differed in frequency between the relaxed and the success or failure conditions were similar to those found important in determining higher mean need scores for male subjects in the success and failure conditions of the n Achievement procedures. This was obtained from the relaxed to the failure and to the success conditions. The female subjects showed an increase in frequency of expressed need (N), deprivation thema (D th), and general involvement (gI). There was a corresponding decrease for these subjects in the frequency of task involved (tI) stories. One thematic characteristic which entered into the computation of the n Social score, hostile or nurturant press (ho P or nu P), occurred less frequently in the failure condition than in either the relaxed or the success conditions.

Table XXV

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Female Subjects in the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Relaxed Cond.		Failure Cond.		Success Cond.		Differences Chi-squares	
Type of Imagery	N	%	N	%	N	%	Rel. vs. Failure	Fail. vs. Success
Obstacle:								
dw	37	31.9	28	32.6	24	29.3	—	—
dp	7	6.0	3	3.5	4	4.9	.68	—
Plot:								
Ach th	55	47.4	50	58.1	46	56.1	2.28	—
D th	11	9.5	14	16.3	17	20.1	2.10	.55
Need:								
N	51	44.0	53	61.3	49	59.7	6.17**	.06
Ant. Res:								
Ga + or Ga −	10	8.6	14	16.3	10	12.1	2.77	.57
Ga ?	10	8.6	3	3.5	1	1.2	2.16	—
Instr. Res:								
I +	30	25.9	21	24.4	26	31.7	—	1.11
I −	12	10.3	8	9.3	6	7.3	—	—
I ?	4	3.4	5	5.8	2	2.4	—	—
Press:								
ho P or nu P	34	29.2	13	15.2	27	32.9	5.57**	7.46*
Goal Res:								
G +	10	8.6	5	5.8	8	9.7	—	—
G −	7	6.0	5	5.8	5	6.1	—	—

Table XXVI

The Number and Percentage of Achievement-Related Stories Written by Male Subjects in the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Relaxed Cond.		Failure Cond.		Success Cond.		Differences Chi-squares	
Type of Imagery	N	%	N	%	N	%	Rel. vs. Fail.	Fail. vs. Succ.
task:								
tI	50	56.8	36	53.0	36	50.0	--	--
general:								
gI	16	18.2	14	20.6	16	22.2	--	--
unrelated:								
U	22	25.0	18	26.5	20	27.8	--	--

The thematic characteristics for male subjects in the n Social procedures did not differ significantly for any of the three experimental conditions. There was some indication that hostile or nurturant press (ho P or nu P) increased in frequency from the relaxed to the failure and the success conditions, but the frequencies were extremely small. The changes in frequency between experimental conditions for all other thematic characteristics were within the limits of sampling variability. It may be noted that the scoring categories which occurred with greatest frequency and therefore contributed most to the mean need score, tI, gI, U, and N, were very similar in total frequency for male subjects in the three experimental conditions.

Table XXVII

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Male Subjects in the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Rel. Cond.		Fail. Cond.		Succ. Cond.		Differences Chi-squares	
Type of Imagery	N	%	N	%	N	%	Rel. vs. Fail.	Fail. vs. Succ.
Obstacle:								
dw	11	16.9	11	22.0	13	25.0	.53	—
dp	5	7.6	2	4.0	4	7.7	—	—
Plot:								
Ach th	46	70.0	31	62.0	31	59.6	.75	—
D th	7	10.6	7	14.0	10	19.2	—	—
Need:								
N	14	21.2	12	24.0	15	28.8	—	—
Ant. Nes:								
Ga + or Ga −	7	10.5	11	22.0	9	17.3	2.82	—
Ga ?	3	4.5	2	4.0	5	9.6	—	—
Instr. Nes:								
I +	12	18.2	10	20.0	11	21.1	—	—
I −	4	6.1	5	10.0	4	7.7	—	—
I ?	3	4.5	0	0.0	0	0.0	—	—
Press:								
ho P or nu P	5	7.0	9	18.0	11	21.1	2.91	—
Goal Nes:								
G +	1	1.5	0	0.0	2	3.8	—	—
G −	2	3.0	2	4.0	0	0.0	—	—

From these data it may be concluded that the Thematic Apperception Test stories written by male and female subjects in the three experimental conditions of the n Social procedures were quite different. The scoring system employed in this investigation revealed no significant differences in the thematic characteristics of stories produced by male subjects in any of the experimental conditions. Female subjects, however, in the failure condition of the n Social procedures produced stories which differed in scorable thematic content from those produced in the relaxed condition. The stories were, for several of the categories and for the mean need score, similar to those written by male subjects in the failure condition of the n Achievement procedures. It may be recalled that the mean need score (Table XVI) of male subjects in the success condition of the n Achievement procedures was lower than the score for subjects in the failure condition. The mean need score for female subjects in the success condition of the n Social procedures was not lower than the mean need score in the failure condition. It was, in fact (Table XVII) somewhat higher, although this difference was not a significant one.

Similarities did exist between the Thematic Apperception Test responses of female subjects in the three experimental conditions of the n Social procedures and the responses of male subjects to comparable conditions of the n Achievement procedures. The main differences between male subjects in the n Achievement procedures and female subjects in the n Social procedures were noted in the success condition.

The Relationship of Mean n Social Scores to Group Nominations as Accepted or Rejected

The mean n Social scores presented in the preceding section of this chapter were based on the data for all individuals who were subjected to each experimental treatment. The data to be presented in the remaining portions of this chapter are based on the same subjects. For this analysis, however, the subjects from each experimental condition were divided into accepted and rejected groups on the basis of class nominations. The mean need scores for female subjects are presented by experimental treatments and statuses, respectively, in Tables XXVIII and XXIX. A similar presentation of the results for male subjects in the n Social procedures is made in Tables XXX and XXXI.

Female subjects who were nominated as "accepted" by their group had significantly higher mean need scores in the relaxed and failure conditions than did individuals who were rejected in these nominations. There was an indication that this relationship was reversed in the success condition. The accepted subjects had lower mean need scores than the rejected subjects within this group. This difference, however, was not a significant one. Accepted subjects in the success condition had mean need scores which were not significantly different than those for accepted subjects in the failure condition. Rejected individuals had significantly higher mean need scores in the success condition than did rejected subjects in the failure condition.

The mean need scores for male subjects were not significantly different for any of the comparisons made. The number of subjects remaining in each group after the division according to class nomination was extremely small. These negative results cannot be considered conclusive.

Table XXVIII

Mean Need Scores for Accepted and Rejected Female Subjects Within the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Accepted		Rejected		Difference		
Condition	N	Mn. n Score	N	Mn. n Score	Diff.	t value	P value
Relaxed	19	3.63	18	.78	2.85	3.14	<.01
Failure	13	5.23	13	2.46	2.77	2.31	<.05
Success	13	4.33	12	5.77	1.44	.77	>.40

Table XXIX

Significance of the Differences in Mean Need Scores for Female Subjects Who Were Accepted and for Subjects Who Were Rejected Between the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Rel. vs. Fail.			Rel. vs. Succ.			Fail. vs. Succ.		
Status	Diff.	t value	P value	Diff.	t value	P value	Diff.	t value	P value
Accept.	1.60	1.57	>.10	.70	.53	>.60	.90	.56	>.50
Reject.	1.68	1.56	>.10	4.99	3.72	<.01	3.31	2.17	<.05

Table XXX

Mean Need Scores for Accepted and Rejected Male Subjects Within the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Accepted		Rejected		Difference		
Condition	N	Mn. n Score	N	Mn. n Score	Diff.	t value	P value
Relaxed	11	-.36	11	-.54	.18	.47	>.60
Failure	9	-.78	8	2.00	2.78	1.64	>.10
Success	9	.78	9	1.22	.44	.25	>.80

Table XXXI

Significance of the Differences in Mean Need Scores for Male Subjects Who Were Accepted and for Subjects Who Were Rejected Between the Relaxed, Failure, and Success Conditions of the n Social Procedures

	Rel. vs. Fail.			Rel. vs. Succ.			Fail. vs. Succ.		
Status	Diff.	t value	P value	Diff.	t value	P value	Diff.	t value	P value
Accept.	.41	.40	>.60	1.14	.89	>.30	1.56	1.17	>.20
Reject.	2.54	1.42	>.10	1.77	1.04	>.30	.78	.36	>.70

The Relationship Between Nominations as Accepted or Rejected Within the Group and Thematic Apperception Test Responses

Female subjects in the relaxed condition who were rejected by their group on the basis of the class nominating ballots differed from accepted subjects in the mean need score. Certain differences in the separate scoring categories of the Thematic Apperception Test may also be noted for these subjects. The data for the accepted and for the rejected individuals within the relaxed condition of the n Social procedures are presented in Tables XXXII and XXXIII.

Accepted female subjects showed significantly higher frequencies of general involvement (gI), environmental obstacles (dw), and need (N) than did rejected subjects. The accepted subjects also produced significantly fewer task involved (tI) stories and deprivation thema (Dh).

Table XXXII

The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Female Subjects in the Relaxed Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
task:					
tI	29	38.2	41	56.9	5.23**
general:					
gI	33	43.4	13	18.0	11.10*
unrelated:					
U	14	18.4	18	25.0	.94

Table XXXIII

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Female Subjects in the Relaxed Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
Obstacle:					
dw	25	40.3	12	22.2	4.35**
dp	5	8.1	2	3.7	.97
Plot:					
Ach th	30	48.4	25	46.3	.01
D th	10	16.1	1	1.8	6.85*
Need:					
N	33	53.2	18	33.3	4.64**
Ant. Res:					
Ga ≠ or Ga −	6	9.6	4	7.4	.19
Ga ?	3	4.8	7	13.0	2.42
Instr. Res:					
I ≠	13	21.0	17	31.5	1.66
I −	8	12.9	4	7.4	.94
I ?	1	1.6	3	5.5	—
Press:					
ho P or nu P	15	24.2	19	35.2	1.68
Goal Res:					
G ≠	2	3.2	1	1.8	—
G −	6	9.7	4	7.4	—

Table XXXIV

The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Female Subjects in the Failure Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
task:					
tI	19	36.5	25	48.1	1.42
general:					
gI	26	50.0	16	30.8	3.99**
unrelated:					
U	7	13.4	11	21.1	1.01

Table XXXV

The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Female Subjects in the Success Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
task:					
tI	17	35.4	20	38.5	—
general:					
gI	19	39.6	26	50.0	1.09
unrelated:					
U	12	25.0	6	11.5	3.06

Table XXXVI

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Female Subjects in the Failure Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
Obstacle:					
dw	13	28.9	15	36.6	.58
dp	0	0.0	3	7.3	—
Plot:					
Ach th	22	48.9	28	68.3	3.32
D th	9	20.0	5	12.2	.96
Need:					
N	25	55.5	28	68.3	1.47
Ant. Res:					
Ga ≠ or Ga -	9	20.0	5	12.2	.96
Ga ?	1	2.2	2	4.9	—
Instr. Res:					
I ≠	14	31.1	7	17.1	2.29
I -	5	11.1	3	7.3	—
I ?	1	2.2	4	9.7	—
Press:					
ho P or nu P	7	15.5	6	14.6	—
Goal Res:					
G ≠	4	8.9	1	2.4	—
G -	2	4.4	3	7.3	—

Table XXXVII

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Female Subjects in the Success Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
Obstacle:					
dw	10	27.8	14	30.4	.06
dp	2	5.5	2	4.3	--
Plot:					
Ach th	21	58.3	25	54.3	.13
D th	6	16.7	11	23.9	.57
Need:					
N	23	63.9	26	56.5	.46
Ant. Res:					
Ga + or Ga -	4	11.0	6	13.1	--
Ga ?	0	0.0	1	2.2	--
Instr. Res:					
I +	15	41.7	11	23.9	2.94
I -	3	8.3	3	6.5	--
I ?	1	2.8	1	2.2	--
Press:					
ho P or nu P	8	22.2	19	41.3	3.33
Goal Res:					
G +	6	16.7	2	4.3	--
G -	1	2.8	4	8.7	--

The thematic characteristics for accepted and for rejected individuals in the failure and in the success conditions of the n Social procedures are presented in Tables XXXIV through XXXVII.

The data for female subjects who were accepted by their group in the failure condition on the n Social procedures are presented in Tables XXXIV and XXXVI. The accepted group had a significantly higher frequency of general involvement (gI) than the rejected group. A number of thematic categories, however, also contributed to the higher mean need score for the accepted group. Among these were the higher frequency of successful instrumental response (I +), deprivation thema (D th), and anticipation of success or failure (Ga + or Ga -). Task involvement (tI) and unrelated stories (U) which act to lower the mean need score occurred more frequently in the Thematic Apperception Tests of the rejected group.

The categories which contributed most to the mean n Social score were very similar for accepted individuals in the failure condition and in the relaxed condition. The expressed need (N) category, however, differed significantly in frequency for accepted and rejected subjects in the relaxed condition, but was not different for these groups in the failure condition.

It has already been demonstrated that the mean need score did not differentiate accepted and rejected individuals within the success condition of the n Social procedures. The thematic characteristics for these subjects are presented in Tables XXXV and XXXVII. The rejected subjects had a slightly higher frequency of hostile or nurturant press (ho P or nu P) than did the accepted subjects. Although the differences

are suggestive rather than conclusive, the rejected subjects did have a higher frequency of general involvement (gI) and a lower frequency of unrelated stories (U) than did the accepted subjects. These differences were in the opposite direction to those found for rejected subjects in either the relaxed or failure conditions. The frequencies of occurrence of thematic characteristics for accepted and rejected male subjects within the three n Social conditions are presented in Tables XXXVIII through XLIII. The data contained in these tables, however, are not essential to a consideration of the main problems of this investigation. In addition, the number of subjects in each of the sub-groups was too small to be entirely satisfactory for statistical analysis. The results for these groups are being presented at this time primarily to permit their use as reference data for the results with female subjects. Also, certain thematic differences between accepted and rejected subjects are contained in these tables which may be suggestive of sex differences in response to the n Social procedures.

Table XXXVIII

The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Male Subjects in the Relaxed Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
task:					
tI	25	56.8	25	56.8	--
general:					
gI	8	18.2	8	18.2	--
unrelated:					
U	11	25.0	11	25.0	--

Table XXXIX

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and by Rejected Male Subjects in the Relaxed Condition of the n Social Procedures

	Accepted		Rejected		Differences[1]
Type of Imagery	N	%	N	%	Chi-square
Obstacle:					
dw	6	18.2	5	11.4	—
dp	3	9.1	2	4.5	—
Plot:					
Ach th	27	81.8	19	43.2	4.59**
D th	2	6.1	5	11.4	—
Need:					
N	10	30.3	4	9.1	2.27#
Ant. Res:					
Ga + or Ga −	4	12.1	3	9.1	—
Ga ?	0	0.0	3	9.1	—
Instr. Res:					
I +	6	18.2	6	18.2	—
I −	1	3.0	3	9.1	—
I ?	2	6.1	3	9.1	—
Press:					
ho P or nu P	2	6.1	3	9.1	—
Goal Res:					
G +	0	0.0	1	3.0	—
G −	0	0.0	2	6.1	—

[1] Yates' correction for continuity was applied to chi-square values marked "#".

Table XL

The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Male Subjects in the Failure Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
task:					
tI	21	58.3	15	46.9	.89
general:					
gI	4	11.1	10	31.2	3.07*
unrelated:					
U	11	30.5	7	21.9	.66

Table XLI

The Number and Percentage of Achievement-Related Stories Written by Accepted and by Rejected Male Subjects in the Success Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
task:					
tI	18	50.0	18	50.0	--
general:					
gI	7	19.4	9	25.0	--
unrelated:					
U	11	30.5	9	25.0	--

Table XLII

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and Rejected Male Subjects in the Failure Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
Obstacle:					
dw	4	16.0	7	28.0	1.05
dp	1	4.0	1	4.0	--
Plot:					
Ach th	13	52.0	18	72.0	2.12
D th	4	16.0	3	12.0	--
Need:					
N	4	16.0	8	32.0	1.75
Ant. Res:					
Ga + or Ga -	6	24.0	5	20.0	--
Ga ?	2	8.0	0	0.0	--
Instr. Res:					
I +	2	8.0	8	32.0	3.12*
I -	3	12.0	2	8.0	--
I ?	0	0.0	4	16.0	--
Press:					
ho P or nu P	5	20.0	4	16.0	--
Goal Res:					
G +	0	0.0	0	0.0	--
G -	2	8.0	0	0.0	--

Table XLIII

The Number and Percentage of Achievement-Related Stories Showing Other Thematic Characteristics Written by Accepted and Rejected Male Subjects in the Success Condition of the n Social Procedures

	Accepted		Rejected		Difference
Type of Imagery	N	%	N	%	Chi-square
Obstacle:					
dw	3	12.0	10	37.0	3.11#
dp	0	0.0	4	14.9	—
Plot:					
Ach th	15	60.0	16	59.3	—
D th	7	28.0	3	11.1	—
Need:					
N	4	16.0	11	40.7	2.76#
Ant. Res:					
Ga ≠ or Ga −	6	24.0	3	11.1	—
Ga ?	1	4.0	4	14.8	—
Instr. Res:					
I ≠	6	24.0	5	18.5	—
I −	3	12.0	1	3.7	—
I ?	0	0.0	0	0.0	—
Press:					
ho P or nu P	5	20.0	6	22.2	—
Goal Res:					
G ≠	1	4.0	1	3.7	—
G −	0	0.0	0	0.0	—

Male subjects who were nominated by their group as accepted had, for the most part, Thematic Apperception Test records which were similar in category frequency to those for individuals who were rejected. Within the relaxed condition only achievement thema (Ach th) was significantly different for accepted and rejected subjects. The frequency of this category, which did not enter into the computation of mean need scores, was higher for the accepted group than for the rejected group. Expressed need (N) occurred more frequently in the accepted than the rejected group but this difference was not significant.

Within the failure and the success conditions of the n Social procedures none of the thematic differences for males was significant at the 5% level of confidence. Rejected individuals differed from accepted individuals within the failure condition in two of the scoring categories at the 10% level of confidence. The rejected subjects had higher frequencies of general involvement (gI) and successful instrumental response (I +). The frequency of achievement thema (Ach th) was higher for the rejected group than for the accepted group. This difference was the reverse of the difference noted in this category for the relaxed condition subjects. Within the success condition expressed need (N) was higher for rejected than for accepted males, as was the frequency of reference to environmental obstacles (dw).

These data for accepted and for rejected male subjects indicate no major differences in Thematic Apperception Test responses for any of the n Social procedures. However, female subjects who were accepted

by their group wrote stories which were markedly different from the stories written by rejected individuals. Within the relaxed and failure conditions this difference was reflected by the higher mean need scores of the accepted subjects. The thematic characteristics which contributed most to the difference in mean need score in the relaxed condition were gI, tI, N, and dw. The most important categories in the differentiation of accepted and rejected female subjects in the failure condition were gI, tI, and I $\neq$. There was some indication that these relationships tended toward a reversal in the experimental success condition. The mean need scores for rejected subjects in the success condition were higher than for rejected subjects in the failure condition, whereas no such difference was found for the accepted subjects. The thematic categories which contributed most to the increase in mean need score for rejected individuals in the success condition were ho P and nu P, D th, gI, and U.

Summary of Results

1. The McClelland methods of arousing n Achievement and scoring Thematic Apperception Test records for the intensity of this need were successfully applied to male college students. Higher mean need scores were secured by subjects in the failure condition than in the relaxed condition.

2. Similar results were obtained with older, and presumably more mature, evening and extension division students.

3. Female subjects did not show differences in mean need score in any of the n Achievement conditions. Similar negative results were obtained for both day school subjects and more mature evening and extension division subjects.

4. Male subjects in the n Social procedures did not show any differences in mean need score in any of the experimental conditions.

5. Female subjects in the n Social procedures had higher mean need scores in the success and failure conditions than in the relaxed condition.

6. Female subjects had higher mean need scores in the relaxed conditions of both the n Achievement and n Social procedures than comparable male subjects.

7. Female subjects in the n Social procedures who were rejected by their group had lower mean need scores in the relaxed and failure conditions than did similar subjects who were nominated as accepted by their group.

1628831

8. Female subjects who were rejected by their group had higher mean need scores in the success condition than in the failure condition of the n Social procedures. The mean need scores of accepted subjects did not differ between the failure and success conditions.

9. The thematic characteristics which contributed most to the difference in mean need scores between the relaxed and failure conditions for male subjects in the n Achievement procedures were similar to those reported by McClelland. Among the major categories which increased in frequency in the failure condition were: general involvement (gI); expressed need (N); successful instrumental response (I $\checkmark$); and hostile or nurturant press (ho P or nu P). Task involved (tI) and unrelated (U) stories decreased in frequency from the relaxed to the failure conditions.

10. The same thematic characteristics were found to contribute to the differences in mean need scores of female subjects in the various experimental conditions of the n Social procedures. These scoring categories were also found important in determining the differences in mean need score between accepted and rejected female subjects in the n Social procedures.

CHAPTER IV

CONCLUSIONS

The importance of the concept of motivation in contemporary theoretical and applied psychology was discussed in Chapter I. It was also suggested that the inference of needs and motivational states from projective behavior seemed to offer opportunities for fruitful research. The avowed aim of this thesis was further to establish principles of projective behavior by defining some of the relationships obtaining between experimentally aroused needs and projective behavior. The foundations of the present investigation, both theoretical and technical, were shown to rest on the extensive research of McClelland and his associates. Their findings concerning the arousal of a need for achievement (n Achievement) and the measurement of the intensity of this need as it is expressed in Thematic Apperception Test responses provided the stimulus for the experiments described and reported in Chapters II and III.

McClelland's reported research on n Achievement was concerned only with male subjects. His measurement of a human psychogenic need through projective expression was limited to subjects who were oriented toward achievement goals. No repetition of the findings concerning n Achievement or utilization of the McClelland need-arousing procedures and scoring techniques has been reported except by his immediate associates. Hence, in addition to the main areas of investigation of this thesis, there was some interest attached to the independent use

of the McClelland experimental and scoring techniques and the confirmation of his findings.

That n Achievement can be aroused and scored as McClelland reports is adequately demonstrated by the results previously presented in Tables IV, V, and VI. The reliability of the scoring system, the mean need scores, and the frequency of occurrence of the separate thematic characteristics were quite similar to those reported for the original n Achievement experiments. The successful completion of this repetition was a necessary prerequisite to the main areas of study in the present investigation.

Organization of this Chapter

The remainder of this chapter will be devoted to: (1) a summary of the major findings of this investigation; (2) a detailed consideration of each of the four main areas of the investigation; (3) a discussion of the McClelland scoring system as a useful measure for dealing with fantasy; (4) suggestions for the development of a scoring system which would reflect a need for social acceptance; and (5) implications of these findings for future research in the determination of the relationships between projective behavior and human motivation.

A Summary of the Major Findings of this Research

The four main areas of this investigation were considered in Chapter I. The first of these concerned the unity or consistency of n Achievement. The question raised was whether or not n Achievement

was specific to the particular need-arousing procedure employed. On the basis of the results reported in Chapter III, this question may be answered affirmatively. Different projective expressions were elicited in the n Achievement procedures than in the n Social procedures. The second area of investigation was concerned with sex differences in responses to the two need-arousing procedures. The existence of major differences between the projective expressions of male and female subjects is apparent in the data presented in Chapter III. The third topic for consideration in this thesis was the question of whether or not a relationship existed between an individual's social acceptance by the group and that individual's projective expressions. The existence of such a relationship for female subjects in the n Social procedures is clear in the results contained in Tables XVII and XVIII. No such relationship was found for male subjects. The final area of the present research was concerned with the possibility of extending n Achievement procedures to older or more mature subjects. It was found that, for the most part, older subjects displayed projective behavior on the Thematic Apperception Test which was very similar to that for regular college undergraduates.

The First Area of Investigation: The Relationships Between Thematic Apperception Test Responses and the Need-Arousing Procedures

There seems to be little doubt that the n Achievement scores derived from Thematic Apperception Test responses were dependent on the nature of the experimental need-arousing procedures. The data presented in Tables XV and XVI indicate that the mean need score

was higher for male subjects who experienced failure when oriented toward achievement goals (n Achievement) than when oriented toward a goal of social acceptance (n Social). The higher mean need scores of male subjects who have had a need for achievement aroused can be considered in relation to the following formal thematic changes in the high need group (Tables V and VI). The stories written by this group were more frequently concerned with long term, ego-ideal-level achievement activities. They contained more frequent expressions of striving for the goal of the activity, more frequent concern with failure or the possibility of failure and a larger number of references to other people who were aiding or impeding the progress of the achievement activity.

The experimental procedures which were designed to arouse a need for social acceptance involved the orientation of the subjects toward this social goal. The stories written by male subjects who failed to attain this goal were not different in mean need score from the stories of subjects who had either attained the goal or who had not been oriented toward the goal (Tables XXVI and XXVII). Moreover, there was no difference in the formal thematic characteristics of the stories. The subjects produced stories which were concerned with the immediate task and displayed little long-term involvement in the achievement imagery. In many instances no achievement imagery of any sort was contained in these stories.

There are at least two possible explanations of the differential reactions of male subjects to the two need-arousing procedures. It

may be that males did not accept the goal of social acceptance as being of as great importance as the achievement goal. If this is the case, then males did not become ego-involved or experience failure to as great a degree in the n Social procedures as in the n Achievement procedures. The second possible explanation is that the arousal of a need for social acceptance in males produced changes in Thematic Apperception Test responses to which the McClelland scoring system was not sensitive. Some efforts were made to detect the presence of such changes in projective behavior. However, no additional categories were found which indicated progress in this task. Of course, this investigation of the test records was not an exhaustive one.

Psychological literature contains frequent references (15, 37) to the cultural forces which act on males to orient them toward achievement goals rather than nurturance or acceptance goals. The findings for male subjects in the preceding comparison of the two need-arousing procedures are at least consistent with this view. A similar interpretation could be made of the results for female subjects in the two need-arousing procedures (Tables XVII and XVIII). The n Achievement procedures did not produce any difference in mean need scores for female subjects. The n Social procedures, however, did produce higher mean need scores for subjects in the success and failure conditions than for subjects in the relaxed condition. It may be concluded that the goal toward which subjects were oriented was an important determinant of the formal thematic characteristics of the stories written in the two need-arousing procedures.

The Second Area of Investigation: Differences in the Responses of Male and Female Subjects to the Thematic Apperception Test

In the preceding discussion, it was noted that men and women differed in their responses to the two need-arousing procedures. Additional sex differences may be seen in the frequencies of the separate scoring categories of the Thematic Apperception Test. In the relaxed conditions of the n Achievement and the n Social procedures, where no attempt was made to orient the subjects toward any goal, males and females also differed. Female subjects secured higher mean need scores than did male subjects. Several scorable thematic characteristics also operated to decrease the mean need score for female subjects in the failure condition of the n Achievement procedures. Among these scoring categories were expression of need, failure or concern with the possibility of failure, and statements which indicated that some positive action was being taken in order to reach the goal or that some other individual was aiding or impeding the goal directed activity.

The changes in the frequencies of occurrence of these categories were small, but they assume some measure of importance since they were in the reverse direction to those for male subjects. It may be that female subjects do not merely fail to respond to the n Achievement procedures. They may, instead, respond in a different way than male subjects. The present method of computing total need scores did not reflect these differing responses by a significant change in mean need score. In addition, the differences in frequencies of occurrence of

the scorable thematic characteristics between the relaxed and failure conditions did not seem to be as large for female subjects, nor did they occur in the most frequently scored categories. Hence, a larger group of female subjects would be necessary to permit the evaluation of these changes than was employed for the purposes of this investigation.

It has already been demonstrated that male subjects in the experimental procedures designed to arouse a need for social acceptance (n Social) did not show any increase in mean need score compared with subjects in a relaxed condition. An examination of the formal thematic categories revealed no changes in the frequencies of occurrence of these characteristics between the relaxed and failure conditions, or between the success and failure conditions. There may have been some trend toward higher frequencies of references to other individuals aiding or impeding the goal directed activity and of favorable or unfavorable anticipation of the outcome of the goal directed activity. It is of interest that the stories of female subjects in the failure condition tended to contain fewer references to other individuals who aided or impeded the achievement activity. This was true for females who were oriented toward either a goal of achievement or a goal of social acceptance.

The Thematic Apperception Test responses of accepted and rejected subjects in the three experimental conditions of the n Social procedures may also be considered separately for each sex. For males only a single scoring category, achievement thema, was significantly

different in frequency of occurrence for accepted subjects in the relaxed condition when compared with the results for rejected individuals. This characteristic occurred more frequently in the stories written by accepted males. The difference did not occur between accepted and rejected female subjects in similar experimental conditions. No other significant differences were noted between accepted and rejected male subjects within any of the experimental conditions.

It seems evident from the findings of the present investigation that the Thematic Apperception Test responses of male and female subjects are different in frequency of occurrence and in the direction of change in the various experimental treatments employed.

The Third Area of Investigation: The Relationships Between Nominations as Accepted or Rejected Within the Group and Thematic Apperception Test Responses

The mean need scores of female subjects in the procedures designed to arouse a need for social acceptance were found to be related to their statuses as accepted or rejected within the group. Male subjects, however, showed no significant differences in mean need scores in relation to their social statuses in any of the three experimental conditions. Female subjects who were accepted by their group within both the relaxed and the failure conditions wrote stories which differed from the stories of rejected subjects within these experimental conditions. The stories of accepted subjects contained higher frequencies of long-term achievement imagery and less task involved or unrelated imagery.

There were, however, several differences between the responses of accepted and rejected subjects in the failure condition. For example, expression of need occurred more frequently in the stories of accepted subjects in the relaxed condition than in the stories of rejected subjects. In the failure condition, the relationship was reversed and the expression of need occurred more frequently in the stories of subjects who were rejected than in the stories written by accepted individuals. In the relaxed condition, rejected subjects wrote of successful efforts directed toward achieving the goal more frequently than did accepted subjects. Within the failure condition, this relationship also tended to be reversed and successful efforts directed toward attaining the goal were more frequent in the stories of accepted subjects than in the stories written by rejected subjects.

The Thematic Apperception Test responses of accepted and rejected female subjects in the three experimental conditions of the n Social procedures were clearly different. In addition, the responses of neither group can be considered as identical with those of male subjects in similar experimental conditions of the n Achievement procedures. In very general descriptive terms, the relationships between the stories of accepted and rejected female subjects may be stated as follows.

In the relaxed condition, accepted subjects wrote more long-term stories with frequent expressions of obstacles to success and references to past and present failures. Rejected subjects in this experimental condition tended to write unrelated stories or to deal with

comparatively unimportant tasks. They seldom referred to the possibilities of failure or to environmental obstacles to the on-going activity. They did, however, frequently mention doing something about achieving the goal or being aided or impeded in the goal directed activity by some other person.

Within the failure condition, the accepted subjects continued to produce more long-term stories than did the rejected subjects, but the difference between the groups was not as great as in the relaxed condition. References to past and present failures occurred more frequently in accepted subjects, as did references to activities which were successful in terms of final attainment of the goal. Rejected subjects in the failure condition expressed need or desire to attain the goal more frequently and made more frequent statements about environmental obstacles than did the accepted subjects. They also produced greater numbers of pure achievement stories, although references to successful action taken in order to attain the goal and mention of other persons aiding or impeding the progress of the activity declined in frequency.

Within the success condition, the rejected individuals increased still further their production of long-term, ego-ideal-level stories while accepted subjects produced no more of these stories than they had in the relaxed condition. The rejected subjects also made more frequent references to need, deprivation thema, and to aid or opposition of other persons. In most other scorable thematic characteristics the stories written in the success condition were similar to those written in the failure condition. The changes in the scoring categories for the stories of rejected subjects in the success condition

acted to increase the mean score of the entire experimental success condition over that of the failure condition.

It may be concluded that female subjects who were accepted by their group produced stories in the Thematic Apperception Test which were significantly different from the stories of rejected subjects in the three experimental conditions of the n Social procedures. The accepted subjects tended to employ more expressive and complex achievement imagery in the relaxed and failure conditions than did the rejected subjects. Moreover, the formal thematic characteristics of the stories produced by accepted subjects showed different changes between the various experimental conditions than were apparent in the stories of rejected subjects.

The Fourth Area of Investigation: The Extension of McClelland's Methods for Arousing and Scoring n Achievement to More Mature Subjects

McClelland's original n Achievement research was based entirely on male college undergraduates. Consequently, there was a need to determine whether or not the principles of projective behavior based on these subjects could be applied to older subjects. The findings for males (Tables VIII and IX) and for females (Tables XII and XVI) in the present investigation support the conclusion that the varieties of projective expression scored as n Achievement were generally the same for regular college students and for evening and extension division students who were approximately ten years older.

Within the experimental procedures designed to arouse a need for

achievement the more mature male subjects displayed higher frequencies of long-term involvement; fewer unrelated stories; and somewhat greater expressions of need, achievement thema, and aid or opposition from other persons. Certain categories, such as efforts which were successful in approaching the goal, did not increase in the failure condition with the evening groups as they had within the day groups. Achievement thema, which differed between the relaxed and failure conditions in the evening groups, did not change between these experimental conditions in the day groups.

The overall picture, however, was one of close similarity between the projective behavior of the day and evening subjects. A comparison of the mean need scores of day and evening subjects revealed no significant difference for either the relaxed or failure conditions.

Essentially the same results were obtained for female subjects. There was no significant difference in mean need scores between the relaxed and failure conditions of the n Achievement procedures for day school subjects. This same result was obtained with the evening school groups. The evening school subjects did have higher frequencies of stated need, successful goal directed activity, and statements of personal inadequacy (dp) in the relaxed condition than in the failure condition. The first two of these categories changed in the same direction in the day school groups, although the changes were not statistically significant. The last of these characteristics did not differ between the relaxed and failure conditions with younger female subjects. The picture is again one of overall similarity of the

Thematic Apperception Test responses for younger and more mature college females. It may be concluded that the projective behavior of more mature male and female subjects in the n Achievement procedures is similar to that for younger subjects, at least for those formal thematic characteristics which are represented by the McClelland scoring system.

A Discussion of the Thematic Characteristics Used in the McClelland Scoring System

The results of the experiments previously discussed may be considered from another, and in some ways more important, point of view. This view is apart from the differences in mean need scores and thematic characteristics resulting from the various experimental treatments. It concerns the value of the McClelland scoring categories as workable units for dealing with human verbal expressions. The results of the present investigation suggest that many of the thematic characteristics which McClelland defined may be of value in dealing with a wide range of psychological phenomena. These characteristics may be scored reliably to differentiate individuals who have been subjected to procedures arousing a need for achievement or a need for social acceptance. They have also been shown to reflect a physiogenic need for food. In addition (at least with females) these thematic categories may be employed to indicate to some degree the acceptance or rejection of an individual by his group. McClelland and his associates have also demonstrated that relationships exist between projective behavior scored in this manner and other behavioral measures, such as

productivity on a task, and the recognition times of need-related words.

Eleven of the thematic categories occurred with sufficient frequency in one or more of the experiments in this investigation to be of value in describing objectively a comparatively unstructured verbal response situation. McClelland has reported the usefulness of these categories in reflecting the intensity of n Achievement in the stories of males. The present research has demonstrated that these same categories were satisfactory for dealing with the verbal projective responses of female subjects in various social situations, and with more mature males in achievement areas.

The thematic characteristics proposed by McClelland apparently reflect with some degree of sensitivity individually or motivationally determined differences in Thematic Apperception Test responses. It is also of interest to note that the categories have a certain measure of independence within achievement stories. For example, a high mean need score in one experimental group may result from increased frequencies of expressed need and hostile or nurturant press with a low frequency of successful instrumental response. In a second group, a high mean need score may result from a high frequency of hostile or nurturant press and successful instrumental response with a low frequency of expressed need. Total-need scoring systems may thus be constructed to indicate the results of different experimental procedures or motivational states even when the mean need scores are equal when computed by the McClelland method. Of course, the stories may be examined with a view to

determining new scoring categories which may be used to reflect the presence of needs.

The Development of a Separate Scoring System for n Social

The differences in the mean need scores of accepted and rejected female subjects in the n Social procedures has been discussed in an earlier division of this chapter. During the scoring of the test records according to the McClelland system attempts were made to determine other thematic characteristics which might be used to indicate the presence of a need for social acceptance. None was found which seemed to be of value in differentiating either different experimental conditions or accepted subjects from rejected subjects. The mean need scores based on the McClelland categories did, however, differentiate in a satisfactory manner between the experimental conditions and between accepted and rejected individuals. Not all of the thematic categories contributed to maximize the differences between groups. Certain categories seemed to change in a different direction under need arousing procedures and tended to reduce the mean need score differences. In order to develop a scoring system which is consistent throughout it would be necessary to employ larger numbers of subjects than were used in the present investigation.

Since each of the characteristics did not occur in each record, the frequencies of several of the categories were not great enough to permit satisfactory establishment of the significance of differences in these categories between different experimental groups. The

characteristics which seem to be most useful in differentiating the relaxed condition from the failure condition for all female subjects in the n Social procedures were: long term involvement (gI); deprivation thema (D th); achievement thema (Ach th); expressed need (N); and positive or negative anticipation of outcome (Ga ✓ or Ga -). There was also a decrease in the frequency of nurturant or hostile press (nu P or ho P). If these differences are confirmed in further studies, the McClelland system of computing total need scores could be modified by crediting plus values for Ach th and minus values for nu P or ho P. This scoring system would maximize the difference between the relaxed and failure n Social conditions.

It has already been noted that accepted subjects in the relaxed condition showed higher frequencies of gI, dw, D th, and N and lower frequencies of U, tI, I ✓ and nu P or ho P than did the rejected subjects. If the McClelland scoring system were modified by assigning plus values to those characteristics with lower frequencies and minus values to those characteristics with increasing frequencies a maximum mean need score would result for rejected individuals and a minimum score for accepted subjects. A high score based on such a system would mean that the subject has produced a Thematic Apperception Test record more like those produced by rejected subjects than by accepted subjects. This score could be interpreted as a need score only if it can be demonstrated that rejected individuals express a high need for social acceptance.

This seems not to be the case; rather it seems that rejected

subjects write cautious task involved or unrelated stories in the relaxed condition while accepted subjects express more complete achievement imagery and thus secure higher mean need scores. The differences in the responses of the accepted and rejected subjects in the success and failure conditions have already been considered. In view of the complexity of these relationships it seems that any successful attempt to develop a meaningful n Social score must await the accumulation of data on additional experimental groups so that the changes in each of the thematic characteristics can be more definitely described.

Implications of this Investigation for Future Research

The verification and extension of the findings of this investigation with other subjects seems to be a necessary next step in research in this area. The n Social procedures should be repeated with similar male and female groups to permit the more precise statement of the thematic changes which occur. The relationships between the thematic changes in the n Social procedures and other measures of individual and group behavior should also be described. It seems apparent from the results of the present investigation that there is a measurable relationship (at least in females) between projective behavior, social status, and experimental success or failure. These relationships and other social behavioral correlates should be examined with a view to more accurate definition. Included in the relating of Thematic Apperception Test responses may be attitudes toward self, the level of acceptance by persons of the opposite sex, and the individual's

acceptance within the family group.

The meaning of the n Achievement scores for males is also in need of further definition in terms of achievement directed activity which is initiated by the individual, and the success or failure with which it meets. At present an investigation is in progress with a group of special college students who have a history of academic non-achievement or under achievement. The n Achievement scores of these subjects are being evaluated in terms of their level of occupational aspiration and college academic success.

The Thematic Apperception Test responses which are interpreted as n Achievement and n Social may also be considered in relation to projective behavior on other verbal and non-verbal tests. The Thematic Apperception Test and various word-association tests each deal with aspects of human verbal behavior. It is quite possible that the thematic categories of the McClelland scoring system can be related to free and controlled word-association and to responses on other semi-structured verbal test materials. This approach seems to offer opportunity for determining broader principles of projective behavior from which motivational states may be inferred. It may also serve to unify some of the observational and scoring units which are at present employed with other projective devices.

SELECTED BIBLIOGRAPHY

1. Alper, T. G. Memory for completed and incompleted tasks as a function of personality: analysis of group data. J. abnorm. soc. Psychol., 1946, 41, 403-420.

2. _____ Task-orientation vs. ego-orientation in learning and retention. Amer. J. Psychol., 1946, 59, 236-248.

3. _____ Task-orientation and ego-orientation as factors in reminiscence. J. exp. Psychol., 1948, 38, 224-238.

4. Alper, T. G., and Black, A. The effect of instruction, task, and population-sample on mental set. Amer. J. Psychol., 1949, 62, 295-300.

5. Atkinson, J. W., and McClelland, D. C. The projective expression of needs, II. The effect of different intensities of the hunger drive on thematic apperception. J. exp. Psychol., 1948, 38, 643-658.

6. Balken, E. R., and Masserman, J. H. The language of phantasy: III. The language of patients with conversion hysteria, anxiety states, and obsessive-compulsive neuroses. J. Psychol., 1940, 10, 75-86.

7. Beck, S. J. Introduction to the Rorschach method. A manual of personality study. Res. Monogr. Amer. Orthopsychiat. Ass., 1937, No. 1.

8. Bell, John E. Projective techniques. Longmans, Green and Co., New York, 1948.

9. Bellak, L. An experimental investigation of projection. Psychol. Bull., 1942, 39, abst. 489.

10. Benjamin, J. D., and Ebaugh, F. G. The diagnostic validity of the Rorschach test. Amer. J. Psychiat., 1938, 94, 1163-78.

11. Brown, J. F. Psychodynamics of abnormal behavior. New York, McGraw-Hill, 1940.

12. Bruner, J. S., and Goodman, C. C. Value and need as organizing factors in perception. J. abnorm. soc. Psychol., 1947, 42, 33-44.

13. Cantril, H., and Allport, G. W. Recent applications of the study of values. J. abnorm. soc. Psychol., 1933, 28, 259-273.

14. Carter, L. F., and Schooler, K. Value, need, and other factors in perception. Psychol. Rev., 1949, 56, 200-207.

15. Child, I. L., Potter, E. H., and Levine, E. M. Children's textbooks and personality development: an exploration in the social psychology of education. Psychol.Monogr., 1946, 60, No. 3, 279.

16. Clark, R. A., and McClelland, D. C. A factor analytic integration of imaginative performance, and case study measures of the need for achievement. Unpublished manuscript.

17. Dubin, S. S. Verbal attitude scores predicted from responses in a projective technique. Sociometry, 1940, 3, 24-48.

18. Dubois, C., and Oberholzer, E. Rorschach tests and native personality in Alor, Dutch East Indies. Trans. N.Y. Acad. Sci., 1942, 4, 168-70.

19. Frank, L. K. Projective methods for the study of personality. J. Psychol., 1939, 8, 389-413.

20. French, R. L. Changes in performance on the Rosenzweig Picture-Frustration Study following experimentally induced frustration. J. consult. Psychol., 1950, 14, 111-116.

21. Frenkel-Brunswick, E., and Sanford, R. N. Some personality factors in anti-Semitism. J. Psychol., 1945, 20, 271-91.

22. Freud, S. The Collected Papers of Sigmund Freud, Vol. I. (Trans. by Joan Riviere) International Psychoanalytic Library, Hogarth Press, London, 1949.

23. Hartman, A. A. An experimental examination of the thematic apperception technique in clinical diagnosis. Psychol. Monogr., 1949, 303.

24. Henry, W. E. The thematic apperception technique in the study of culture-personality relations. Genet. Psychol. Monogr., 1947, 35, 3-135.

25. Hilgard, E. R. Theories of learning, Appleton-Century-Crofts, Inc., New York, 1948.

26. Katy, I. Emotional expression in failure: a new hypothesis. J. abnorm. soc. Psychol., 1950, 45, 329-350.

27. Krech, D., and Crutchfield, R. S. Theory and problems of social psychology. McGraw-Hill, New York, 1948.

28. Krugman, J. E. A clinical validation of the Rorschach with problem children. Rorschach Res. Exch., 1942, 6, 61-70.

29. Masserman, J. H., and Balken, E. R. The psychoanalytic and psychiatric significance of phantasy. I. Psychoanal. Rev., 1939, 26, 243-79.

30. Matheny, W. G. A factorial study of incentives in certain learning and performance situations. Unpublished Ph. D. dissertation, University of Maryland, 1949.

31. Mayman, M. Review of the literature on the thematic apperception test. D. Rappaport, Ed., Diagnostic psychological testing. Chicago: The Year Book Publishers Inc., 1946, Appendix III, 496-505.

32. McCandless, B. R. The Rorschach as a predictor of academic success. J. appl. Psychol., 1949, 33, 43-50.

33. McClelland, D. C., Atkinson, J. W. The projective expression of needs: I. The effect of different intensities of the hunger drive on perception. J. Psychol., 1948, 25, 205-222.

34. McClelland, D. C., Atkinson, J. W., and Clark, R. A. The projective expression of needs: III. The effect of ego-involvement, success and failure on perception. J. Psychol., 1949, 27, 311-330.

35. McClelland, D. C., Clark, R. A., Roby, D., and Atkinson, J. W. The projective expression of needs: IV. The effect of the need for achievement on thematic apperception. J. exp. Psychol., 1949, 39, 242-255.

36. McClelland, D. C. and Lieberman, A. N. The effect of need for achievement on recognition of need-related words. J. Personality, 1949, 18, 236-251.

37. Mead, M. Male and female: a study of the sexes in a changing world. William Morrow and Co., New York, 1949.

38. Miale, F. R. Clinical validation of a Rorschach interpretation. The case of Lillian K. II. Rorschach interpretation. Rorschach Res. Exch., 1938, 2, 153-63.

39. Morgan, C. D., and Murray, H. A. A method for investigating phantasies, the thematic apperception test. Arch. Neurol. Psychiat., Chicago, 1935, 34, 289-306.

40. Morgan, C. T., Physiological psychology, McGraw-Hill, New York, 1943.

41. Murphy, G. Personality: a biosocial approach to origins and structure. Harper Brothers, New York, 1947.

42. Murray, H. A. The effect of fear upon estimates of the maliciousness of personalities. J. soc. Psychol., 1933, 4, 310-329.

43. _____ Explorations in personality. Oxford Univ. Press, New York, 1938.

44. _____ Manual for the thematic apperception test. Harvard Univ. Press, Cambridge, 1943.

45. Murray, H. A., and Stein, M. Note on the selection of combat officers. Psychosom. Med., 1943, 5, 386-391.

46. Postman, L., and Bruner, J. S. Perception under stress. Psychol. Rev., 1948, 55, 314-324.

47. Postman, L., Bruner, J. S., and McGinnies, E. Personal values as selective factors in perception. J. abnorm. soc. Psychol., 1948, 43, 142-154.

48. Proshansky, H. M. A projective method for the study of attitudes. J. abnorm. soc. Psychol., 1943, 38, 393-395.

49. Rodnick, E. H., and Klebanoff, S. G. Projective reaction to induced frustration as a measure of social adjustment. Psychol. Bull., 1942, 39, abst. 489.

50. Rorschach, H. Psychodiagnostics, a diagnostic test based on perception. (Trans. by P. Lemkau and B. Kronenburg), Grune and Stratton, 1942.

51. Rorschach, H., and Oberholzer, E. The application of the interpretation of form to psychoanalysis. J. nerv. ment. Dis., 1924, 60, 225-248, 359-379.

52. Rosenzweig, S. The picture-association method and its application to the study of reactions to frustration. J. Personality, 1945, 14, 3-23.

53. Rosenzweig, S., and Fleming, E. E. Apperceptive norms for the Thematic Apperception Test II, an empirical investigation. J. Personality, 1949, 17, 483-503.

54. Rotter, J. B., and Rodnick, E. H. A study of reactions to experimentally induced frustration. Psychol. Bull., 1940, 34, abst. 577.

55. Sarason, S. B. The TAT and subjective interpretation. J. consult. Psychol., 1948, 12, 285-299.

56. Sarason, S. B., and Rosenzweig, S. An experimental study of the triadic hypothesis: reaction to frustration, ego-defense, and hypnotizability. II. Thematic apperception approach. Char. and Person., 1942, 11, 150-165.

57. Sargent, H. Projective methods. Psychol. Bull., 1945, 42, 257-293.

58. Sanford, R. N. Procedure for scoring the thematic apperception test. Harvard Psychological Clinic, (Privately printed), Cambridge.

59. _____ The effect of abstinence from food upon imaginal processes: a preliminary experiment. J. Psychol., 1936, 2, 129-136.

60. _____ The effect of abstinence from food upon imaginal processes: a further experiment. J. Psychol., 1937, 3, 145-149.

61. Schmidt, H. O. The effect of praise and blame as incentives to learning. Psychol. Monogr., 1941, 53, No. 3.

62. Schwartz, L. A. Social-situation pictures in the psychiatric interview. Amer. J. Orthopsychiat., 1932, 2, 124-132.

63. Sears, P. S. Levels of aspiration in academically successful and unsuccessful children. J. abnorm. soc. Psychol., 1940, 35, 498-536.

64. Sears, R. R. Success and failure: a study in motility. Chapter 13 in: Studies in personality. Edited by Q. McNemar and M. Merrill, McGraw-Hill, 1942.

65. _____ Survey of objective studies of psychoanalytic concepts. Soc. Sci. Res. Coun. Monogr., 1943, Bull. 51.

66. _____ Personality. 105-119 in Annual review of psychology. Vol. I. Edited by C. P. Stone and D. W. Taylor, 1950, Annual Reviews, Inc., Stanford, Calif.

67. Sloan, W. Prediction of extramural adjustment of mental defectives by use of the Rorschach Test. J. consult. Psychol., 1948, 12, 303-309.

68. Stein, M. I. The Thematic Apperception Test. Addison-Wesley Press, Cambridge, 1948.

69. Symonds, P. M. The dynamics of human adjustment. D. Appleton-Century Company, New York, 1946.

70. _____ Adolescent fantasy. Columbia University Press, New York, 1949.

71. Taylor, J. L. Application of the Rorschach in a Jewish vocational agency. Jewish soc. Serv. Quart., 1949, 349.

72. Tolman, E. C. The nature and functioning of wants. Psychol. Rev., 1949, 56, 357-369.

73. Tomkins, S. S. The Thematic Apperception Test. New York, Grune and Stratton, 1947.

74. Vernon, P. E. The Rorschach ink-blot test. Brit. J. med. Psychol., 1933, 13, 89-118, 179-200, 271-291.

75. Waters, R. H., and Blackwood, D. F. The applicability of motivational criteria to emotions. Psychol. Rev., 1949, 56, 351-356.

76. White, R. W. Interpretation of imaginative productions. Chap. 6, Vol. I in Personality and behavior disorders. Edited by J. McV. Hunt, The Ronald Press Company, New York, 1944.

77. Young, P. T. Motivation of behavior. Wiley and Sons, New York, 1936.

APPENDIX A

ADMINISTRATION INSTRUCTIONS FOR THE RELAXED CONDITION OF THE N ACHIEVEMENT PROCEDURES

ADMINISTRATION INSTRUCTIONS

n Achievement--Relaxed Group

The test administrator is introduced by the instructor at the regular class session as a graduate student trying out some tests.

While an assistant passes out pencils to those who need them and distributes the test booklets (which are to be kept closed), say:

> These are some recently devised tests. They are in an early developmental stage and data are being gathered in order to perfect them. Since these tests have just been constructed, we have no way of knowing how difficult they are or what they really measure, if anything; so we will appreciate your cooperation in providing some information about these tests.
>
> If you will now read the instructions for Test I, we can get underway.
>
> Make as many different words as you can using only the letters in the key word. You may use long words or short words and may include the names of persons, places, or slang words. In any word that you make do not use a letter more times than it appears in the key word.
>
> In the sample problem the key word is WASHINGTON and below it have been written some of the words which can be made from the letters in WASHINGTON. Any word will do so long as it does not use a letter more times than it appears in the key word. Are there any questions?
>
> Turn to Page 8 and go ahead with Test I. The key word is GENERATION. (Time: 3 min.)
>
> Stop work on Test I and turn to Page D for the instructions for Test II.
>
> Each of the groups of letters below will form a word if it is correctly arranged. You are to find this word and write it in the blank space following the letter group.
>
> The sample shows that from NTA you can make the word NAT, and from [illegible] you can make the word [illegible] and so on with the third and fourth samples. You need not do them in order, but can skip around doing the easier items first. Are there any questions?
>
> Go ahead with Test II (Time: 3 min.)

Stop work on Test II. Turn to Page E and go right ahead with Test III. The instructions are the same as for the last test. (Time: 3 min.)

Stop work on Test III. Turn to Page 1, Test IV, Section A, and you will be given the instructions for this test.

This next test is a test of your creative imagination. A number of pictures will be projected on the screen before you. You will have 20 seconds to look at the picture and then 5 minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide you in your thinking and will enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.

Obviously there are no right or wrong answers, so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic, for this is a test of creative imagination. Do not merely describe the pictures that you see. Tell a story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any question use the reverse side.

Go ahead with the first picture. (lower lights for 20 seconds)
(Expose picture 1 for 20 seconds)
(Picture 1: boy-surgeon)

You should be on question 2 (at end of one minute).

You should be on question 3 (at end of two minutes).

Question 4 (at end of three minutes).

Finish up your story (at end of four minutes).

Now turn to the next page and be ready for the next picture (at the end of five minutes).

(use the same procedure for the remaining three pictures.
2-couple on beach-page 2-IV-B
3-farm scene-page 3-IV-C
4-two men's heads-page 4-IV-D)

(After the 4th picture)

Please do not turn to the next test until you are told to do so.

The next test is a word association test. You are to associate the stimulus word, which is in capital letters, with the response word which you find easiest to associate with it by drawing a line from the stimulus word to that response word.

For example: (illustrate on the board)

home

GO

out

You merely indicate your choice by drawing a line from the stimulus word GO to the response word. In this case I have indicated the response word home.

This test should be done very rapidly. Spend no more than 3 or 4 seconds on each item and plan to finish both pages of this test in five minutes.

Turn to Test V and start work - Complete both pages.

(Let everyone finish unless you have one or two extremely slow individuals. When nearly everyone has finished, have the questionnaire distributed.)

Close your test booklets, write your name on the front cover of your test booklet, and begin to fill out the Personal Data Sheet which has been given you.

Fill out the remainder of the blank using check marks wherever you can. On such items as your grade average and intelligence, give us your best estimate.

(When the questionnaire is completed, have them place it inside the test booklet and collect them.)

APPENDIX B

ADMINISTRATION INSTRUCTIONS FOR THE SUCCESS AND FAILURE CONDITIONS OF THE N ACHIEVEMENT PROCEDURES

ADMINISTRATION INSTRUCTIONS

n Achievement—Success and Failure Groups

The test administrator is introduced to the class as being from the Department of Psychology of the University of Maryland. The test booklets are to be passed out with no explanation concerning the experiment.

Say:

If you will turn to Page A and read the instructions for Test I, we can get underway.

Make as many different words as you can using only the letters in the key word. You may use long words or short words and may include the names of persons, places, or slang words. In any word which you make do not use a letter more times than it appears in the key word.

In the sample problem the key word is WASHINGTON and below it have been written some of the words which could be made from the letters in WASHINGTON. Any word will do so long as it does not use a letter more times than it appears in the key word. Are there any questions?

I wish to emphasize that you must follow these directions exactly since the tests are closely timed.

Turn to Page B and go ahead with Test I. The key word is GENERATION. (Time: 3 min.)

Stop work on Test I. Now calculate your score by counting the number of words you have made. Enter this score in the blank marked Score at the lower right of the page.

Now turn to Page C, the Personal Data Sheet, and complete it. Write in the information asked for or place a check in the proper place. Where you are not sure of the exact information requested put in your best estimate.

(Wait until most people are nearly through with the data sheet before reading the next paragraph.)

Apparently extemporaneous:

The tests which you are taking directly indicate a person's general

level of intelligence. These tests have been taken from a group of tests which were used to select people of high administrative capacity for positions in Washington during the past war. Thus, in addition to general intelligence, they bring out an individual's capacity to organize material, his ability to evaluate crucial situations quickly and accurately; in short, these tests demonstrate whether or not a person is suited to be a leader.

This present research parallels and supplements Naval research undertaken to determine which educational institutions turn out the highest percentage of students with the administrative qualifications shown by superior scores on these tests. For example, it has been found that the University of Maryland[1] excels in this respect. You are being allowed to calculate your own scores so that you may determine how well you do in comparison with the University of Maryland students.

I will have to request that you pay close attention while I read you the scores for the Maryland students for Test I[2].

The top 25% of the students or the best .. of the group had scores of 49 or above.

The second quarter of the students had scores below 49 and above 34.

The third quarter had scores between 23 and 34.

The fourth or lowest quarter had scores below 23.

Test number I has been found to be the single most diagnostic test of the entire battery. Thus, an individual's standing on this test would be a good indication of how well he might be expected to do on the test as a whole.

Now turn to Page D and read the instructions for Test II.

---

[1] Substitute Johns Hopkins University as the reference group for experimental groups on the College Park campus of the University of Maryland.

[2] For success groups substitute the following norm figures:

Top 25%	18
2nd quarter	18 - 14
3rd quarter	8 - 14
4th quarter	8

Each of the groups of letters below would form a word if it was correctly arranged. You are to find this word and write it in the blank space following the letter group.

The sample shows that from HTA you can make the word HAT, and from NOWG you can make the word GROW and so on with the third and fourth samples. You need not do them in order, but can skip around doing the easier items first. Are there any questions?

Go ahead with Test II. (Time: 3 min.)

Stop work on Test II. Turn to Page D and go right on with Test III. The instructions are the same as for the last test. (Time: 3 min.)

Stop work on Test III. Compute your score for Test II and for Test III by counting the number of words that you were able to unscramble for each test and enter that number in the blank marked Score at the lower right hand corner of each page.

Now take the separate scores for each of the tests and enter them in the table at the lower right hand corner of Page D. Add the three scores and record the sum in the blank marked Total Score Test I, II, III.

I will read the scores[1] of the University of Maryland students for the total of the first three tests. Again I will ask you to pay close attention while I read them. This will give you a chance to see how well you have done compared to Maryland students.

The top 25% or the best ¼ had scores of 80 or above.

The second quarter had scores below 80 and above 69.

The third quarter had scores between 52 and 69.

The lowest or fourth quarter had scores below 52.

Turn to Page 1, Test IV, Section A and you will be given instructions for the next test.

---

[1] For success groups substitute the following norms:

Top 25% 37
2nd quarter 37 - 22
3rd quarter 18 - 14
4th quarter 14

The next test is a test of creative imagination. A number of pictures will be projected on the screen before you. You will have 20 seconds to look at the picture and then five minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide you in your thinking and enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.

Obviously there are no right or wrong answers so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic, for this is a test of creative imagination. Do not merely describe the picture you see. Tell a story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any question, use the reverse side.

Go ahead with the first picture (lower lights for 20 seconds)
(Expose picture 1 for 20 seconds)
(Picture 1: boy-surgeon)

You should be on question 2 (at the end of one minute).

You should be on question 3 (at the end of two minutes).

Question 4 (at the end of three minutes).

Finish up your story. (at the end of four minutes)

Now turn to the next page and be ready for the next picture (at the end of five minutes).

(use the same procedure for the remaining three pictures.
2-couple on beach-page 2-IV-B
3-farm scene-page 3-IV-C
4-two men's heads-page 4-IV-D)

(After the 4th picture)

Please do not turn to the next test until you are told to do so.

The next test is a word association test. You are to associate the stimulus word which is in capital letters with the response word which you find easiest to associate with it by drawing a line from the stimulus word to that response word.

For example: (illustrate on the board)

home

GO

out

You merely indicate your choice by drawing a line from the stimulus word to the response word. In this case I have indicated the response word home.

This test should be done very rapidly. Spend no more than 3 or 4 seconds on each item and plan to finish both pages of this test in five minutes.

Turn to Test V and start work. Complete both pages.

(Let everyone finish unless you have one or two extremely slow individuals. Have the test booklets collected and explain the experimental procedure.)

APPENDIX C

A REPRODUCTION OF THE TEST BOOKLET AND PERSONAL DATA SHEET USED IN THE N ACHIEVEMENT PROCEDURES

* * * - * * *

COMPOSITE

PSYCHOLOGICAL EXAMINATION II

Form 1

12/15/50/3

- -

Test I

Instructions:

Make as many different words as you can using only the letters in the key word. You may use long words or short words and may include the names of persons, places, or slang words. In any word you make do not use a letter more times than it appears in the key word.

Sample:

Key word: WASHINGTON

1. WASH
2. HANG
3. TOW
4. SIT
5. THING

Stop Here - Do not turn the page to Test I until you are told to do so.

Test I

Time: 3 minutes

Key Word: GENERATION

1. _____.	25. _____.	49. _____.
2. _____.	26. _____.	50. _____.
3. _____.	27. _____.	51. _____.
4. _____.	28. _____.	52. _____.
5. _____.	29. _____.	53. _____.
6. _____.	30. _____.	54. _____.
7. _____.	31. _____.	55. _____.
8. _____.	32. _____.	56. _____.
9. _____.	33. _____.	57. _____.
10. _____.	34. _____.	58. _____.
11. _____.	35. _____.	59. _____.
12. _____.	36. _____.	60. _____.
13. _____.	37. _____.	61. _____.
14. _____.	38. _____.	62. _____.
15. _____.	39. _____.	63. _____.
16. _____.	40. _____.	64. _____.
17. _____.	41. _____.	65. _____.
18. _____.	42. _____.	66. _____.
19. _____.	43. _____.	67. _____.
20. _____.	44. _____.	68. _____.
21. _____.	45. _____.	69. _____.
22. _____.	46. _____.	70. _____.
23. _____.	47. _____.	71. _____.
24. _____.	48. _____.	72. _____.

Score _____

Instructions:

Each of the groups of letters below will form a word if it is correctly arranged. You are to find this word and write it in the blank space following the letter group.

Sample:

1. HTA HAT
2. ROWG GROW
3. DOFO FOOD
4. EILDF FIELD

Stop here - Do not begin Test II until you are told to do so.

- -

Time: 3 minutes

Test II

1. DONF _____
2. HRDA _____
3. OGLA _____
4. SATF _____
5. LEID _____
6. OFLO _____
7. RSAT _____
8. THEA _____
9. JLLT _____
10. MOHE _____
11. POFL _____
12. TQUI _____
13. DELH _____
14. NUSH _____
15. DIKN _____
16. VOLE _____
17. NOJI _____
18. YAES _____
19. REAN _____
20. YUBS _____
21. HRCI _____
22. WONK _____
23. WROYR _____
24. TANUT _____
25. PAHYP _____
26. DIPRE _____
27. LETAR _____
28. NEEYM _____
29. FRIEG _____
30. ROADE _____
31. RANST _____
32. BOUTD _____
33. DEIRT _____
34. VIDOA _____
35. RATHEY _____
36. RDEGRA _____
37. SIMYER _____
38. NOLSYL _____
39. NEIRDF _____
40. PTDSUI _____
41. YUDBD _____
42. JERCET _____
43. ROCTIV _____
44. ROSTNG _____
45. RHTLHEA _____

Score _____

Instructions: Unscramble the following scrambled words in the same way as in Test II.

Time: 3 minutes

Test III

1. NISK _____
2. CVIE _____
3. LUDI _____
4. RAEC _____
5. SIMS _____
6. YLUG _____
7. BSON _____
8. STOL _____
9. PLEH _____
10. FEMI _____
11. RKOW _____
12. DOGO _____
13. KEAM _____
14. SIKS _____
15. NUSB _____
16. NGAS _____
17. ISKR _____
18. KEAM _____
19. OPOR _____
20. HETAC _____
21. LANOE _____
22. HEMAS _____
23. KENSA _____
24. RUSPN _____
25. SUBAE _____
26. GICLN _____
27. RENES _____
28. PITES _____
29. TRIFD _____
30. RAMYR _____
31. ZREAL _____
32. KUINF _____
33. YOALL _____
34. MIFALY _____
35. NIUTLS _____
36. CEXEL _____
37. RANDGE _____
38. [illegible] _____
39. NIWREN _____
40. RITSVE _____
41. NIFSHI _____
42. BAMEMR _____
43. PEERAT _____
44. SSIRCI _____
45. WARERD _____
46. SAFUOM _____
47. KUNDIN _____
48. DNEERT _____
49. LOBENG _____
50. F[illegible]DEAT _____
51. RUFSEF _____
52. R[illegible]ADRY _____
53. NECRESI _____
54. NOCFROT _____
55. REP[illegible]FCT _____
56. HACIEEV _____
57. USFOPRT _____
58. CSUESSC _____
59. EPETCOM _____
60. VANADCE _____

Score Test I	
Score Test II	
Score Test III	
TOTAL SCORE	

I - IV - A

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

I - IV - B

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

I - IV - C

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

I - IV - D

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

II - IV Word Association Test

1. CROWD belong watch
2. CLASS committee failure
3. PERSONALITY understood famous
4. RELAX alone together
5. DISCOURAGING remarks grades
6. HAPPINESS fleeting earned
7. FAMILY expenses assistance
8. PERSONAL loss anxiety
9. LIFE OF trouble competition
10. FRIENDS respect affection
11. ECCENTRIC wealthy solitary
12. FAME achieve brief
13. MAKING friends enemies
14. ACCEPTING devotion resignation
15. WINNING support contest
16. BUILDING barriers relations
17. WORKING alone vainly
18. CAREER solitary champion
19. TASK muddle share
20. OVERCOME obstacle hostility
21. PLACE ON probation scholarship
22. CONTINUING success security
23. LEARN independently perfectly
24. EXAMINATION excel avoid
25. HOUSE home room
26. COURT marry jail
27. SELF realization preservation
28. PEOPLE worry help
29. NIGHT solitude shift
30. CAMPAIGN hate sales
31. WORK AND slave play
32. WAGES OF SIN poverty isolation
33. THEATRICAL flop hit
34. LIVE AND learn love
35. PRIVILEGE executive hermit
36. INCREASING enterprise expenses

GO RIGHT ON TO THE NEXT PAGE

37. PARTY joke dull

38. SPORT team lose

39. RECEIVE affection promotion

40. TALK sarcastic chat

41. IGNORE gossip barriers

42. PRACTICE alone perfect

43. PLAY hard partner

44. TENDER weak single

45. OVERWHELMING odds victory

46. LASTING fame marriage

47. COMPLETE college privacy

48. DAILY presents bills

49. CHURCH wedding appeal

50. AIRPLANE vacation dangerous

51. BRIDGE club build

52. NIGHT long date

53. TEST anxiety weakness

54. SUMMER long job

55. OFFER excuses comfort

56. PLAY unable solitaire

57. INTERVIEW nervous convince

58. LIFE striving security

59. DAY OF triumph reckoning

60. EFFORTS rewarded vain

61. CHILDREN comfort concern

62. COLLECTION family charity

63. GIRL popular ambitious

64. OUTSIDER snub greet

65. BORN TO BE troubled beaten

66. WORK AND worry master

67. PLACID inactive relaxed

68. ADVANCE unable uneasy

69. ATTEMPT quit gain

70. REGULAR increase meeting

71. MAN IS TOO ambitious inhibited

72. PERSONAL STANDARD attainable impossible

Personal Data

1. Number of test booklet_____ Date_____

2. Name_____ Age_____ Sex: M_____ F_____
(last) (first)

3. Home Address_____
(Street) (City) (State)

4. High School_____
(last attended)

5. College_____
(present)

6. School: A&S or Liberal Arts_____ Education_____

Business or BPA_____ Agriculture_____

Engineering_____ Special or CSCS_____

Other_____

7. Class: Fresh._____Soph._____Jr._____Sr._____Graduate_____ Special____

8. Major Area_____
(botany, pre-med, chemical engineering, etc.)

9. Occupation you are preparing to enter_____

Undecided_____

10. Are you a sorority or fraternity member? Yes_____ No_____

11. Name of sorority or fraternity_____

12. Grade average: D_____D/_____ C_____ C/_____ B_____ B/_____ A_____

13. Your general intelligence: Above average_____

Average_____

Below average_____

14. I. Q. (your best estimate) _____

APPENDIX D

ADMINISTRATION INSTRUCTIONS FOR THE RELAXED CONDITION OF THE N SOCIAL PROCEDURES

ADMINISTRATION INSTRUCTIONS

n Social--Relaxed Groups

The test administrator is introduced by the instructor at the regular class session as a graduate student trying out some tests.

While an assistant passes out pencils to those who need them and distributes the test booklets (which are to be kept closed), say in an apparently extemporaneous manner:

> These are some recently devised tests. They are in an early developmental stage and data are being gathered in order to perfect them. Since these tests have just been constructed we have no way of knowing how difficult they are or what they really measure, if anything. So we will appreciate your cooperation in providing some information about these tests.
>
> The first test is a test of your creative imagination. A number of pictures will be projected on the screen before you. You will have 20 seconds to look at the picture and then five minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide you in your thinking and will enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.
>
> Obviously there are no right or wrong answers, so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic, for this is a test of creative imagination. Do not merely describe the pictures that you see. Tell a story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any question use the reverse side.
>
> Go ahead with the first picture (Lower lights for 20 seconds)
> (Expose picture 1 for 20 seconds)
> (Picture 1: boy-surgeon)
>
> You should be on question 2 (at the end of one minute).
>
> You should be on question 3 (at the end of two minutes).
>
> Question 4 (at the end of three minutes).
>
> Finish up your story (at the end of four minutes).

Now turn to the next page and be ready for the next picture. (at the end of five minutes).

(use the same procedure for the remaining 3 pictures.
2-couple on beach-page 2-IV-B
3-farm scene-page 3-IV-C
4-two men's heads-page 4-IV-D)

(After the 4th picture)

Please do not turn to the next test until you are told to do so.

The next test is a word association test. You are to associate the stimulus word which is in capital letters with the response word which you find easiest to associate with it by drawing a line from the stimulus word to that response word.

For example: (illustrate on the board)

GO — home
GO — out

You merely indicate your choice by drawing a line from the stimulus word GO to the response word. In this case I have indicated the response word home.

This test should be done very rapidly. Spend no more than 3 or 4 seconds on each item and plan to finish both pages of this test in five minutes.

Turn to the word association test and start work - Complete both pages.

(Let everyone finish unless there are one or two extremely slow individuals.)

(Have the prepared roll sheets distributed)

Each of you has been given a roll sheet or a list of the members of this group with a number before each person's name. Will each of you find the number before your own name and place that number in the square marked Number on the front cover of your test booklets. Be sure to mark the number clearly in the block marked Number on the front page. Now pass in your test booklets.

(Have the test booklets collected at the same time as the ballots and envelopes)

The last step in today's procedure will involve again the roll sheets. We need to get an honest and accurate rating of the sub-groups within this class. You will be asked to list in a few minutes on this rating sheet the names of the five people who rate the highest on social acceptability or popularity or likeableness or whatever you may choose to call that quality which makes an individual the sort of person who is a good friend. These ratings are to disregard intelligence, money, clothes, school grades and so on. We realize that this class is not a permanent social group of the sort that will make up your eventual home, business and other social relationships. However, each of you has had an opportunity to create impressions on others in this group and to form your own opinion of the other class members. It is these impressions which we wish you to use to make these ratings.

We would also like you to list on line B of this rating sheet the five people who you feel are least acceptable on these social traits.

Before you make these ratings I would like to explain the procedure which has been arranged to secure complete secrecy and anonymity of this information which is certainly of a confidential nature. You will remember that your test booklets bore only the number which you placed on them and not your name. In the same way your ratings will not be made by name but by means of the numbers on the roll sheets. The roll sheets will be collected and destroyed before your ratings are collected. You will place your ratings in sealed envelopes which will be mixed in the ballot box as they are collected. There will be no way of ever connecting these ratings with anyone's name.

You will note that each of the roll sheets bears a serial number. There were just enough of these roll sheets made for this group. The stencil has been destroyed and as these sheets are collected they will be counted and destroyed in this room before you turn in your ballots.

Now will you please place your own code number in the space at the upper right hand corner of the rating sheet and carefully shield with your hand your ratings as you make them.

List in order in the spaces from 1 to 5 on line A the best liked person, then the next best liked and so on down to the fifth choice. Remember to use only the code numbers to indicate your selections. Pick those people who are most socially acceptable to you on the basis of likeableness and pleasantness. In short, list the five people who you feel make the best friends. In the spaces on line B list in order the five people you think are least socially acceptable or whom you like the least. Start at space 1 with the individual who is most unacceptable socially or whom you would least

like to have for a friend and then complete the list in order.

(Collect the roll sheets and destroy them - collect the ballots and thank the subjects for their cooperation.)

APPENDIX E

ADMINISTRATION INSTRUCTIONS FOR THE SUCCESS AND FAILURE CONDITIONS OF THE N SOCIAL PROCEDURES

ADMINISTRATION INSTRUCTIONS

n Social--Success and Failure Groups

The experimenter is introduced by the instructor as being from the Department of Psychology of the University of Maryland. While the class instructor distributes the test booklets and cautions the students to leave them face down until they are given other instructions make the following remarks in an apparently extemporaneous manner:

We hope to gather data on several different tests at this time. Although we will take up the test of social relationships as the last item on the schedule, it requires a bit more explanation than the other projects and it might be just as well to discuss this last test as Mr. .....(name of instructor) distributes the materials for the first two tests. Please leave these test materials closed and face down until we are ready to use them.

The area of social acceptance which we hope to study in our final test is an important one. We have the results of many studies of intelligence, achievement in college, and type of college curriculum in relation to yearly income or final occupational level. However, more important than intelligence or education are the factors involved in social acceptance, popularity, likeableness, or whatever you may choose to call that quality which makes a good friend. Final acceptance or happiness seems to be a matter of being liked or accepted by the social group. You must pass the test of other people's judgment of you. It may well be that your final satisfaction or success in life can best be predicted on the basis of your acceptance by college social groups. We hope to gather in the last test on our schedule some data concerning the characteristics of those of you who rate high on popularity or acceptance with the group and those of you who rate low.

In preparation for this test ratings have been secured on each member of the group. These ratings were made on the basis of popularity, likeableness, pleasantness - those qualities which make a person nice to have around. Intelligence, money, good school grades, clothes - all other factors were to be disregarded.

The ratings were secured from several students who from careful observation obviously rated high with the rest of the group on these measures of acceptance. The committee selected to make these ratings will, of course, remain nameless. Some of them are in this group now. They were told to consider each person carefully and to think of that person in relation to the characteristics of likeableness or social acceptability which we have just mentioned.

To make their task easier the raters were told to imagine that this group had to be reduced immediately to one half of its present size. They were told to classify the names of all the members of this group into two classes. Those who would be retained or who were the most desirable and those who would be left out of the group or who were least desirable.

Of course, this class is not a permanent social group of the sort that will make up your eventual home, business and other social relationships. However, each of you has had an opportunity to create impressions on the others in this group and to form your own opinion of the other members. If on the basis of that impression you have not been accepted by the rest of this group it is a good indication that for some reason you are not the sort of person who is accepted and liked by others.

To insure that there will be no unintended embarrassment on the part of anyone I will ask you to be very careful that you see only your own rating and no one else's. If you will turn over your test booklets and tear off the folded paper bearing your name you will be able to see your own rating. It will contain an "A" if you were found acceptable or an "R" if you were rejected or found not acceptable. As soon as you have noted your own rating tear it up or put it in your pocket. Do not tell anyone your rating or ask them theirs. We need these ratings for the final test, but we wish to embarrass no one with the release of any information which by its very nature is private and personal. Please remember this rating - an "A" if you were to be retained in the reduced group and an "R" if you were to be rejected or left out of the group. We will need the rating later after these tests have been completed.

We will leave these ratings now for our first two tests.

Will you put your name, age, sex and year in school in the proper spaces on the first page of the test booklet.

The next test is a test of creative imagination. A number of pictures will be projected on the screen before you. You will have 20 seconds to look at the picture and then five minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide you in your thinking and enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.

Obviously there are no right or wrong answers so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic, for this is a test of creative imagination. Do not merely describe the picture you see. Tell a

story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any question use the reverse side.

Go ahead with the first picture (Lower lights for 20 seconds)
(Expose picture 1 for 20 seconds)
(Picture 1: boy - surgeon)

You should be on question 2 (at the end of one minute).

You should be on question 3 (at the end of two minutes).

Question 4 (at the end of three minutes).

Finish up your story (at the end of four minutes).

Now turn to the next page and be ready for the next picture (at the end of five minutes).

(use the same procedure for the remaining 3 pictures.
2-couple on beach-page 2-IV-B
3-farm scene-page 3-IV-C
4-two men's heads-page 4-IV-D)

(After the 4th picture)

Please do not turn to the next test until you are told to do so.

The next test is a word association test. You are to associate the stimulus word which is in capital letters with the response word which you find easiest to associate with it by drawing a line from the stimulus word to the response word.

For example: (illustrate on the board)

GO — home
GO — out

You merely indicate your choice by drawing a line from the stimulus word to the response word. In this case I have indicated the response word home.

This test should be done very rapidly. Spend no more than 3 or 4 seconds on each item and plan to finish both pages of this test in five minutes.

Turn to the next test and start work. Complete both pages.

(Let everyone finish unless you have one or two extremely slow individuals)

(At the conclusion of this test have the prepared class rolls, the rating sheets and the envelopes distributed)

Each of you has been given a list of the names of all the members of this class with a two digit number before each person's name. Check to see that the number on the front cover of the test booklet is the same as that which precedes your name on this class roll. Now erase completely your name from the test booklet. If you cannot completely erase your name tear off that portion of the cover that has your name on it. Your name should not appear on the test booklet when it is collected. Now pass in your test booklets.

(Have the booklets collected, but do not collect the other materials)

Now that you have completed your work on the first two tests, I can give you some additional information concerning the major purposes of this research. We are, as I mentioned earlier, extremely interested in social relationships within groups and in finding some valid method of measuring some of these relationships. You have all heard the statements concerning the value of college social relationships or of sorority or fraternity ties. You have also heard stories about how serious a thing it is for some one person to be left out of the social groups in college. It may be that these statements will be capable of investigation at some time in the future on the basis of information concerning the measures of group relationships gathered in studies of the sort we are doing today. We hope to gather information which will enable us to establish some of the principles involved in group social relationships.

This, I am sure you will agree, is an important area and in view of its importance I hope you will understand that the procedures taken here today were all necessary ones. The ratings given to you at the beginning of the hour were part of these procedures. They were completely false. They were not made by any committee of people either here or anywhere else but were assigned by chance. The names of the people in this group were assigned to the accepted or rejected groups by a process similar to drawing names out of a hat. At no time during the assigning of these ratings was there any more than this chance connection between you and the rating you were given.

These ratings were given out not because there was any desire on our part to give out false information, but because it was only in this way that we could investigate these measures of social relationships with a completely unbiased approach. We hope that because of your cooperation in this work to be of assistance to individuals at some future time through our better knowledge of some of the basic factors involved. I think that my next request will be better understood in the light of this explanation.

The last step in today's procedure will involve again the roll sheets. We need now to get an honest and accurate rating of the sub-groups within this class. You will be asked to list in a few minutes on this rating sheet the names of the five people who rate the highest on social acceptability or popularity or likeableness or whatever you may choose to call that quality which makes an individual the sort of person who is a good friend. These ratings are to disregard intelligence, money, clothes, school grades and so on. We realize that this class is not a permanent social group, but as each of you has had a chance to impress the other members of the group in some way, either favorably or not, it is these impressions which we wish you to use to make these ratings.

We would also like you to list on line B of this rating sheet the five people who you feel are least acceptable on these social traits.

Before you make these ratings I would like to explain the procedure which has been arranged to secure complete secrecy and anonymity of this information which is certainly of a confidential nature. You will remember that your test booklets bore only a number when you passed them in and not your name. In the same way, your ratings will be made not by name but by means of the numbers on the roll sheets. The roll sheets will be collected and destroyed before your ratings are collected. There will be no way of ever connecting these ratings with anyone's name.

You will note that each of the roll sheets bears a serial number. there were just enough of these roll sheets made for this group. The stencil has been destroyed and as these sheets are collected they will be counted and destroyed in this room before you turn in your ballots.

Now will you please place your own code number in the space at the upper right hand corner of the rating sheet and carefully shield with your hand your ratings as you make them.

List in order in the spaces from 1 to 5 on line A the best liked person, then the next best liked and so on down to the fifth choice. Remember to use only the code numbers to indicate your selections. Pick those people who are most socially acceptable to you on the basis of likeableness and pleasantness. In short, list the five people who you feel would make the best friends. In the spaces on line B list in order the five people who you think are least socially acceptable or who you like the least. Start at space 1 with the individual who is most unacceptable socially or who you would least like to have for a friend and then complete the list in order.

(Collect the roll sheets and destroy them - collect the ballots. Then distribute the form letters and thank the subjects for their cooperation.)

APPENDIX F

A REPRODUCTION OF THE TEST BOOKLET

USED IN THE M SOCIAL PROCEDURES

- -

COMPOSITE

PSYCHOLOGICAL EXAMINATION

Form I

_____

_____

NUMBER

10/24/50/1

- -

Age _____ Sex: M_____ F _____ Year in School: Fr._____ Soph._____

Jr._____ Sr._____

- -

A. _____

B. _____

C. _____

Test IV - A

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

IV - B

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

IV - C

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

IV - D

1. What is happening? Who are the persons?

2. What has led up to this situation? That is, what has happened in the past?

3. What is being thought? What is wanted? By whom?

4. What will happen? What will be done?

II - IV Word Association Test

1. CROWD belong watch
2. CLASS committee failure
3. PERSONALITY understood famous
4. RELAX alone together
5. DISCOURAGING remarks grades
6. HAPPINESS fleeting earned
7. FAMILY expenses assistance
8. PERSONAL loss anxiety
9. LIFE OF trouble competition
10. FRIENDS respect affection
11. ECCENTRIC wealthy solitary
12. FAME achieve brief
13. MAKING friends enemies
14. ACCEPTING devotion resignation
15. WINNING support contest
16. BUILDING barriers relations
17. WORKING alone vainly
18. CAREER solitary champion
19. TASK muddle share
20. OVERCOME obstacle hostility
21. PLACE ON probation scholarship
22. CONTINUING success security
23. LEARN independently perfectly
24. EXAMINATION excel avoid
25. HOUSE home room
26. COURT marry jail
27. SELF realization preservation
28. PEOPLE worry help
29. NIGHT solitude shift
30. CAMPAIGN hate sales
31. WORK AND slave play
32. WAGES OF SIN poverty isolation
33. THEATRICAL flop hit
34. LIVE AND learn love
35. PRIVILEGE executive hermit
36. INCREASING enterprise expenses

37. PARTY joke dull

38. SPORT team lose

39. RECEIVE affection promotion

40. TALK sarcastic chat

41. IGNORE gossip barriers

42. PRACTICE alone perfect

43. PLAY hard partner

44. TENDER weak single

45. OVERWHELMING odds victory

46. LASTING fame marriage

47. COMPLETE college privacy

48. DAILY presents bills

49. CHURCH wedding appeal

50. AIRPLANE vacation dangerous

51. BRIDGE club build

52. NIGHT long date

53. TEST anxiety weakness

54. SUMMER long job

55. OFFER excuses comfort

56. PLAY unable solitaire

57. INTERVIEW nervous convince

58. LIFE striving security

59. DAY OF triumph reckoning

60. EFFORTS rewarding vain

61. CHILDREN comfort concern

62. COLLECTION family charity

63. GIRL popular ambitious

64. OUTSIDER snub greet

65. BORN TO BE troubled beaten

66. WORK AND worry master

67. PLACID inactive relaxed

68. ADVANCE unable uneasy

69. ATTEMPT quit gain

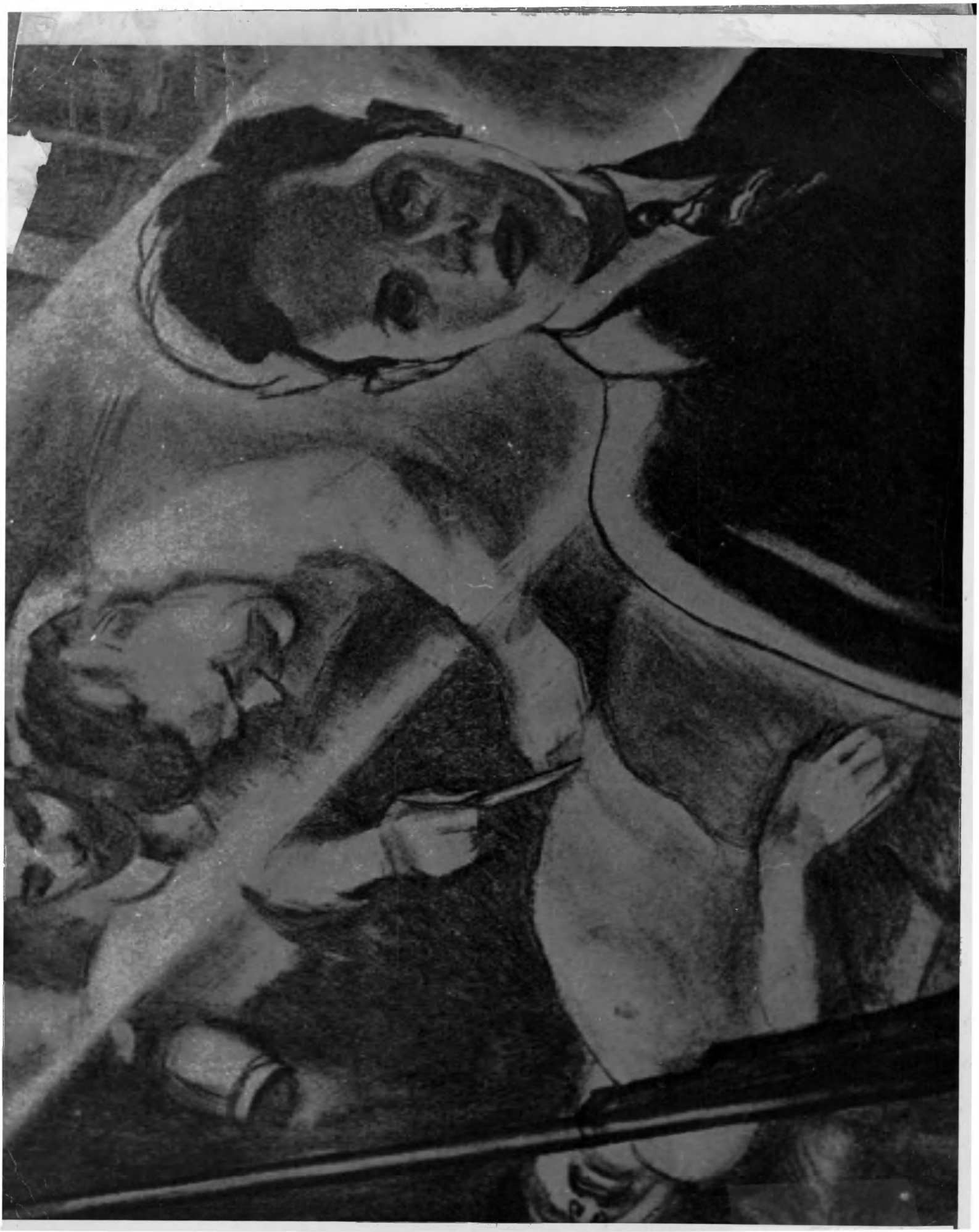
70. REGULAR increase meeting

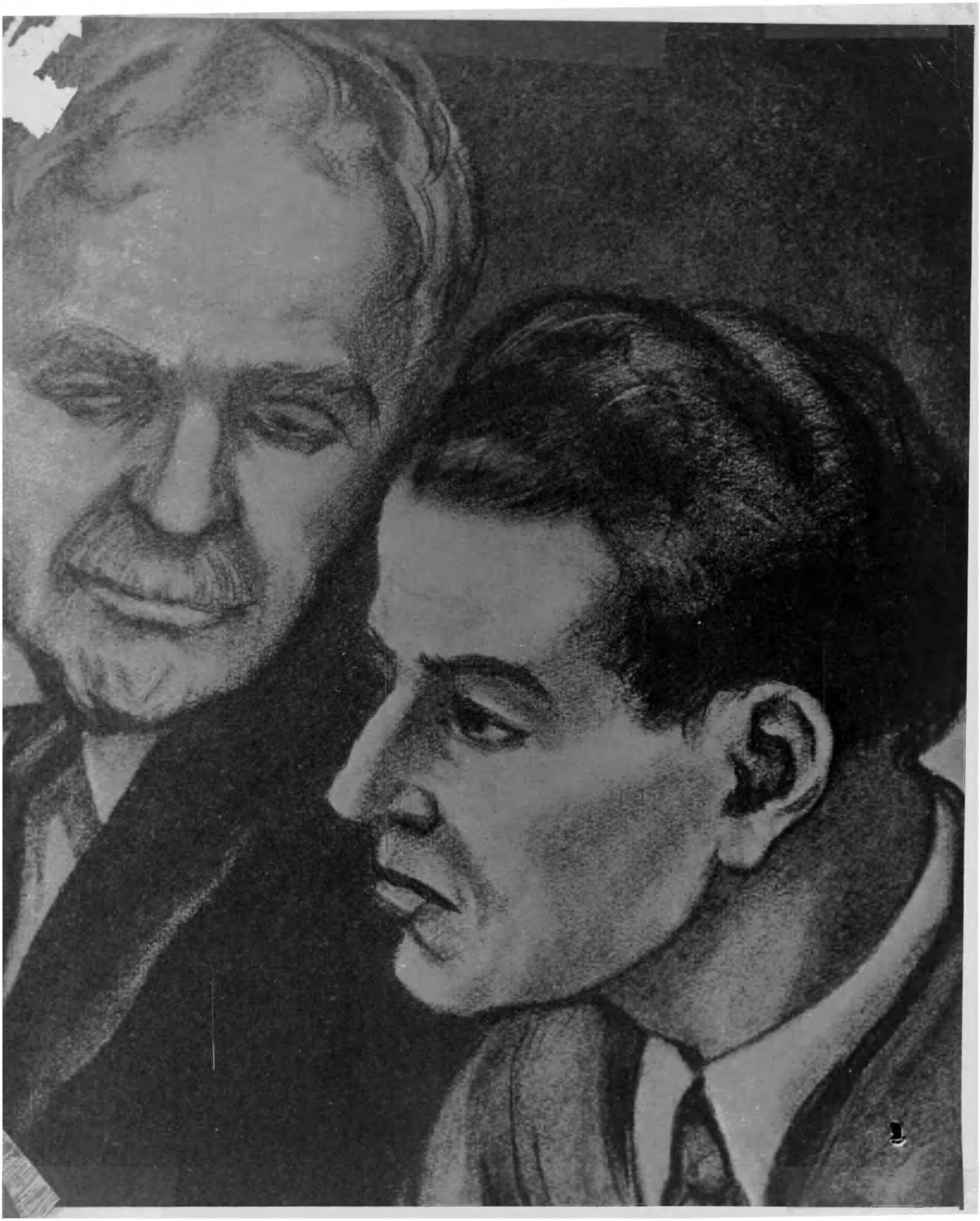
71. MAN IS TOO ambitious inhibited

72. PERSONAL STANDARD attainable impossible

APPENDIX G

REPRODUCTIONS OF THE FOUR PICTURES USED IN THE THEMATIC APPERCEPTION TEST





APPENDIX H

REPRODUCTIONS OF THE NOMINATING BALLOT, COMMITTEE RATING FORM, AND THE LETTER OF EXPLANATION USED IN THE H SOCIAL PROCEDURES

Rating Sheet

Your Number _____

- -

A. Highest Ratings (1)_____ (2)_____ (3)_____ (4)_____ (5)_____

B. Lowest Ratings (1)_____ (2)_____ (3)_____ (4)_____ (5)_____

Committee Rating Form

Do Not Open or
Remove this Paper

Your rating by the
committee was _____

November 4, 1950

The experiment in which you have participated was designed to provide data concerning the effects of failure on written stories and word associations. The ratings of "accepted" or "rejected" which were given to you at the start of the experimental session were planned to produce mild feelings of failure (R) or success (A). These ratings were assigned to individuals by a random or chance selection process similar in result to drawing your names from a hat. Whether you were listed as accepted or rejected had no relation to your real status in the group. The committee, supposedly responsible for these ratings, never existed. The operation of the committee was described to you only in order to make the ratings seem somewhat more real. There was no such committee, except in our imagination, as part of the experimental procedure.

The information given to you during the experimental session concerning the secrecy of your ballots was entirely correct. There is no list in existence which can be used in any way to connect either your ballots or your test booklet with your name. As was announced, your responses to the experimental procedure will be entirely anonymous during the analysis of the data.

While the present research is in its early stages, we hope eventually to determine some of the characteristics of individuals having real social difficulties and to devise more satisfactory methods of measuring social relationships.

We would like to offer you our sincere thanks and appreciation for your cooperation in this effort.

William F. Field
Graduate Student
Psychology Department
University of Maryland

APPENDIX I

SCORING INSTRUCTIONS FOR THE THEMATIC APPERCEPTION TEST

SCORING PROJECTIVE RECORDS FOR NEED ACHIEVEMENT (First Draft)[1]

Edgar L. Lowell and John W. Atkinson
Wesleyan University

SCORING CRITERIA

ACHIEVEMENT IMAGERY. (A)

Achievement imagery is indicated by any reference to a goal involving one or more of the characters in the story, in terms of which achievement motivation might be defined or inferred. The goal may be as specific as mastery of a task (fix a machine) or as general as vocational success (becoming a famous surgeon). In any case, it must be possible to infer that attainment of the goal would involve a personal feeling of satisfaction and accomplishment or general social approval for accomplishment. The goal is often a noun (inventor, artist), but may be a verb (or adjective), as in the case of "studying", in which the object of the verb is implied. Words which frequently indicate achievement relatedness are: success, failure, work, mastery, perfect, accomplish, achieve, strive, fame, glory, "get ahead", fix, etc.

The specific definitions of the other achievement related characteristics augment the general definition of Achievement Imagery already given. Thus the appearance of any other scorable characteristic would provide sufficient evidence for scoring the presence of Achievement Imagery.

INVOLVEMENT. (gI) (tI)

Involvement in the achievement activity may be either long term and general (gI) or short term and task involved (tI).

GENERAL LONG TERM INVOLVEMENT.

When the achievement goal of the story is a general, long term preoccupation at the level of the ego ideal (career, inventing something, being a success in life, an artistic creation) rather than a specific achievement goal (passing a test, fixing a machine) in which

---

[1] These scoring instructions were supplied by the authors in preliminary form. They are reproduced here with minor changes and omissions occasioned by the different picture series which was employed in this investigation.

long term involvement of the characters is lacking, gI is scored. In order to score general, long term achievement involvement, one of the following criteria must be met:

1. A culturally recognized goal - concern with becoming a doctor, scientist, successful business man, making a contribution to mankind, graduating from college, being a success in life, losing or getting a job, etc. (See Examples 1 and 4)

2. Personally determined goal - a goal not necessarily valued by society, but in which a long term interest is indicated by anticipation of success or failure. If the long term concern is suggested very weakly, a need for success ought to be stated or strongly implied.

3. Someone who has reached a culturally recognized status (inventor) is concerned with a new achievement or creation (artist). Very often someone is working on a new invention. If the culturally recognized status is weak, the long term interest may be indicated by such phrases as "working for years at it", etc. (See Example 4)

4. Examination situations are scored gI only when the person is definitely concerned or worried about how the mark fits into a long term concern (being admitted to medical school, graduating from college).

5. Goals which meet none of the above, but which are so important to the individual that they involve the "whole" person (being a complete failure in life).

Definitely excluded from gI are stories in which the goal is a solution to some personal or social problem, the performance of an everyday routine task, or simply an escape or an adventure goal.

TASK INVOLVEMENT

All achievement stories which are not scored gI are considered task involved and are scored tI.

UNRELATED IMAGERY. (U) All stories not scored (A).

No achievement related characteristic will appear in a story scored U. (See Example 3)

NEED. (N)

Someone in the story expresses the desire to reach an achievement goal. Expressions such as "He wants to become a doctor, fix the machine, finish the painting, succeed at the job" are the clearest examples. Very strong indications of the presence of the need as in phrases such as "is determined to be a doctor" and "hopes to do well" are also scored (N). The objective accomplishment desired may be specific (finish the invention); may refer to personal status (become a successful businessman);

or may be more general and altruistic (be a service to mankind). N is scored only once per story even if it appears more than once in varying forms.

To be certain that the stated need is n Achievement, the scorer might imagine the need satisfied and ask himself - "has an achievement goal state been reached?". It is immediately apparent that wanting assistance in reaching a goal (the mechanic wants his helper to hand him the hammer), is not n Achievement. The presence of need is not inferred from instrumental activity. (See Examples 1 and 4)

INSTRUMENTAL ACTIVITY. (I ✓) (I -) (I ?)

Activity (including mental activity) by one or more characters in the story indicating that something is being done about attaining the achievement goal is considered instrumental activity. There must be an actual statement of activity within the story independent of both the original statement of the situation and the final statement of outcome. Instrumental activity must not be inferred from either the statement of the situation or outcome. Instrumental activity may be successful (I ✓), unsuccessful (I -), or of doubtful outcome (I ?).

I ✓ Successful instrumental activity. Someone in the story does something that leads to attainment of his goal. The presence of instrumental activity will be apparent before it is known whether or not it is successful. To be scored I ✓, only the achievement related activity must be successful, but the general outcome of the story may be unsuccessful. (Example 4 illustrates I -. Example 5 illustrates I ?.)

ANTICIPATORY GOAL REACTIONS. (Ga✓) (Ga-) (Ga?)

Someone in the story anticipates either success or failure and/or the affective state associated with success or failure. Achievement related anticipations may usually be distinguished from escape daydreams by referring to the context in which they appear. Thus "the student is bored and pictures himself as pilot of the airplane overhead" would be considered escape rather than an achievement related anticipation.

Ga✓ Positive anticipatory goal reaction (Anticipation of success). Someone is thinking about the success he will achieve, expects that the invention will work this time, sees himself as a great surgeon, dreams of himself as a great man - all are scored Ga✓.

Ga- Negative anticipatory goal reaction (Anticipation of failure). Fear of failure, concern over the possibility that an invention won't work, expecting the worst - are scored Ga-.

Both Ga/ and Ga- may appear in the same story in which case both are scored. However, if either appears more than once it is scored only once. Anticipations may be uncertain. When anticipations take the form of "wondering whether or not", or whenever there is any question in the scorer's mind as to whether the anticipation is / or -, it should be scored Ga?. (See Example 4)

OBSTACLES. (dp) (dw)

The progress of goal directed activity is blocked in some way. Things do not run smoothly. There are obstacles to be overcome. The obstacle may be a previous deprivation, i.e. failure, which must be overcome before further progress towards the goal may be made, or the obstacle may be a present environmental factor.

dp If the obstacle may be located within the individual (lack of confidence prevents his getting ahead, inability to make a decision hinders his progress), or if the individual is responsible for the block or state of deprivation which must be overcome (he has to make up previous failures) it is scored dp. (See Example 4)

dw When the block to be overcome is part of the environment, i.e. may be located in the world at large, (the invention was almost finished when the gasket broke, his family couldn't afford to send him to medical school, competition was too keen for him) it is scored dw.

It is necessary to make a distinction between "apparent obstacles" which really define the achievement goal of the story and real obstacles to ongoing goal directed behavior. If a story begins with the statement, "Tony is getting ready to fix the machine that broke down", dw is not scored since the breakdown defines the achievement goal of the story. However, if "Tony has the machine practically fixed when the flywheel splits", then dw is scored. Now the breakdown is an obstacle to goal directed activity already in progress. In the first instance, the breakdown did not block any stated goal directed behavior.

Both dp and dw may occur in the same story, but each is scored only once in any one story.

PRESS. (nu P) (no P)

Forces in the story, personal in source, which either aid or hinder the ongoing achievement related activity of some character in the story.

nu P Nurturant press. Someone aids, sympathizes with, helps, encourages the person striving for achievement. The assistance must be in the direction of the achievement goal and not merely incidental to it, (the experienced machinist is trying to straighten things out for the apprentice and is encouraging him).

ho P Hostile press. Someone criticizes or works against the person wanting achievement. The hindrance is more hostile than the static block (dw). (The foreman bawled him out for his mistakes.)

Press must always be considered from the point of view of the character in the story who is striving for achievement. Press is either friendly or hostile to the ongoing achievement related activity.

GOAL STATES. (G/) (G-)

G/ Positive Goal State, (success). Someone in the story experiences (1) the positive affective state associated with active mastery and/or definite attainment of an achievement goal (he enjoys painting, he is proud of his accomplishment, they are very satisfied with their invention); or (2) definite objective benefits as a result of successful achievement which allow the inference of positive affect (his genius is acknowledged by millions, someone is proud of the inventor, fame and fortune were his). Note that G/ is more than successful instrumental activity. "He works his way through medical school and becomes a successful doctor" is I/. G/ would be scored only when a statement of positive affect was included, i.e. "....becomes a successful doctor and experiences a deep sense of satisfaction"; or if there were adequate indication of more than average objective benefits, i.e. "....he becomes a famous surgeon".

G/ may not be inferred from successful instrumental activity. It may occur within the story or in connection with the outcome of the story, but like all other characteristics is scored only once per story. (See Example 2)

G- Negative Goal State, (failure). Someone in the story experiences (1) the negative affective state associated with failure to attain mastery or an achievement goal (he was discouraged because he couldn't play the violin well, he became despondent after repeated failures); or (2) the objective concomitants of complete failure and deprivation (he became a drunken bum - the laughing stock of the community). As in the case of G/, we may not infer G- from the outcome of instrumental activity. The outcome must be modified as outlined above for G/ but now negatively. G- may occur within or at the end of a story but is scored only once per story.

THEMA. (D th) (Ach th)

Themas or plots may be scored if the achievement imagery is central to the story.

D th Deprivation Thema. If the plot is primarily concerned with someone who is in an achievement related difficulty it may be scored D th. The story ought to meet one of the following criteria:

1. Situations in which someone has failed completely, or is concerned over such a failure, or capitulates in the face of overwhelming forces.

2. Situations in which the central character has previously been deprived of achievement and is now trying to make up for lost ground, or is working against forces which keep him from an achievement goal that he has reached anticipatorily but not objectively. This includes obstacles in the form of mechanical failures that prevent achievement. (Example 4)

A story is not scored D th just because the outcome is unsuccessful. Such a story might be an Ach th with I-, unless, of course, the failure is complete in which case criterion 1 above would be met.

Ach th Achievement Thema. Other achievement related stories in which striving for the goal is predominant and difficulties, if present, are of relatively minor importance are scored Ach th. (See Example 1)

EXAMPLES

Story 1. Boy with mural behind him

Vince is thinking of his future in a most unusual way as shown by the crude figures of a doctor and assistant in an operation on a laborer (as shown by poor clothes).

Feeling the need of doing some good for people (N) and enjoying a good profession, Vince has become determined to be a doctor (gI) even though it means a long hard struggle financially.

He is thinking of some of the antiquated things in medicine and has high hopes of improving them when he is a doctor.

Vince will be a better than average doctor, specializing in surgery. He won't be terrifically famous, but will spend his life doing his best for humanity. (A, Ach th).

Story 2. Old man and young man talking

These two men are doctors on a consultation. The older man is the younger one's father and they are working together on this brain operation.

The woman who is undergoing the operation has a brain tumor. These two surgeons are supposed to be the best in the country (G+) and so they have been called to perform the operation.

These men realize that they must make their operation a success as a woman's life is in the balance. The woman wants to live too in order to finish caring for her husband and family.

The operation will be a success. The woman will be bedridden for awhile but later on will get well. (A)

Story 3. Boy with mural behind him

This boy is thinking what it will be like when he has his appendix removed. It is merely a vision in the background depicting the boy's thoughts.

The boy has chronic appendicitis. He knows that someday he will have to have an operation.

This boy is afraid of the operation. His only experience with doctors has been when he had to have his finger sewn up - it was unpleasant. He wants to have the operation over with.

Three months later he will have an acute attack and the operation will be deemed necessary. He will be up and around three days after the operation and will feel no ill effects. (D)

Story 4. Boy with mural behind him.

Bill is visiting a museum where he has seen some great masterpieces of art. He wants to become a great artist in the future. (N)

He is still very young and doesn't know much about painting. He has therefore gone to all the art places to get as much knowledge as possible. (I-)

He is wondering if he really has the ability to paint as the masters have painted. (Ga?) It is his lifelong ambition but he does not have the confidence in himself. (dp) Can he be a success?

Bill will eventually become a second rate artist. Since he hasn't enough self-confidence he will not be able to progress any further. (A, gI, D th)

Story 5. Old man and young man talking

Two scientists of some sort are intently watching a crucial experiment. (gI) Since they are in street clothes, they are probably just watching gauges or dials of some sort rather than taking an active part.

A series of theories and discoveries have been leading up to this experiment which may be vital in determining the validity or utility of the discovery.

They are both concentrating intently on the experiment, watching everything carefully, ready to intervene or change settings, etc., if anything goes wrong. (I-) They will regulate. The man on the right (younger man) seems to be doing most of the work. The other is his superior or advisor.

The experiment may or may not be a success. Who can tell? If a failure, they will try again - maybe with new equipment, maybe with slight modifications. (A)

APPENDIX J

SUPPLEMENTAL DESCRIPTIVE STATISTICS FOR THE N ACHIEVEMENT AND N SOCIAL EXPERIMENTAL GROUPS

Supplemental Statistics for the Experimental Subjects

Group and Procedure	Age Range	Mean Age	No. of Subjects	No. Stories Omitted	Sum of Squares
n Achievement					
Male - Day					
Relaxed Cond.	18-28	21.4	38	2	296.2
Failure Cond.	18-34	22.6	41	0	978.2
Success Cond.	18-30	21.5	50	1	602.6
Female - Day					
Relaxed Cond.	18-22	18.9	21	1	291.8
Failure Cond.	17-21	18.8	14	0	152.9
Success Cond.	18-24	19.6	34	0	259.1
Male - Eve.					
Relaxed Cond.	21-53	32.7	32	1	343.9
Failure Cond.	21-45	30.9	17	0	653.2
Female - Eve.					
Relaxed Cond.	19-49	29.0	31	2	495.0
Failure Cond.	19-52	33.4	22	0	411.5
n Social - Female					
Relaxed Cond.					
Accepted	18-21	19.3	19	0	124.4
Rejected	18-23	19.5	18	0	143.1
All	18-23	19.4	37	0	342.8
Failure Cond.					
Accepted	18-21	19.1	13	0	113.1
Rejected	18-24	19.2	13	0	111.2
All	18-24	19.2	26	0	243.4
Success Cond.					
Accepted	18-21	19.1	12	0	254.7
Rejected	18-20	19.4	13	0	250.3
All	18-21	19.3	25	0	517.8

Supplemental Statistics for the Experimental Subjects (cont.)

Group and Procedure	Age Range	Mean Age	No. of Subjects	No. Stories Omitted	Sum of Squares
n Social - Male					
Relaxed Cond.					
Accepted	20-30	22.1	11	0	56.6
Rejected	19-32	22.4	11	0	109.5
All	19-32	22.2	22	0	167.5
Failure Cond.					
Accepted	19-23	20.7	9	0	37.6
Rejected	18-21	19.9	8	0	144.0
All	18-23	20.3	17	0	214.2
Success Cond.					
Accepted	19-31	22.3	9	0	89.6
Rejected	19-26	20.7	9	0	145.6
All	19-31	21.5	18	0	221.6