1958

Personality differences between academically successful and unsuccessful college students as measured by the thematic apperception test

Leland Emil Mach

University of the Pacific

Follow this and additional works at: https://scholarlycommons.pacific.edu/uop_etds

Part of the Education Commons

Recommended Citation


This Dissertation is brought to you for free and open access by the Graduate School at Scholarly Commons. It has been accepted for inclusion in University of the Pacific Theses and Dissertations by an authorized administrator of Scholarly Commons. For more information, please contact mgbney@pacific.edu.
PERSONALITY DIFFERENCES BETWEEN ACADEMICALLY SUCCESSFUL
AND UNSUCCESSFUL COLLEGE STUDENTS AS MEASURED
BY THE THEMATIC APPERCEPTION TEST

A Dissertation
Presented to
the Faculty of the School of Education
College of the Pacific

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Leland Emil Mach
June 1958
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. INTRODUCTION TO THE STUDY</td>
<td>1</td>
</tr>
<tr>
<td>The Problem</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the problem</td>
<td>1</td>
</tr>
<tr>
<td>The hypothesis</td>
<td>1</td>
</tr>
<tr>
<td>Need and Justification for the Study</td>
<td>2</td>
</tr>
<tr>
<td>The Method and Techniques of Research</td>
<td>5</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>6</td>
</tr>
<tr>
<td>Projective test</td>
<td>6</td>
</tr>
<tr>
<td>Protocol</td>
<td>6</td>
</tr>
<tr>
<td>Story</td>
<td>6</td>
</tr>
<tr>
<td>Response</td>
<td>6</td>
</tr>
<tr>
<td>Probationary student</td>
<td>6</td>
</tr>
<tr>
<td>Honor student</td>
<td>7</td>
</tr>
<tr>
<td>Setting</td>
<td>7</td>
</tr>
<tr>
<td>Central Figure</td>
<td>7</td>
</tr>
<tr>
<td>Dominant Motivational State</td>
<td>7</td>
</tr>
<tr>
<td>Frustration</td>
<td>8</td>
</tr>
<tr>
<td>Facilitator</td>
<td>8</td>
</tr>
<tr>
<td>Inhibitor</td>
<td>8</td>
</tr>
<tr>
<td>Resolution</td>
<td>8</td>
</tr>
<tr>
<td>Reaction</td>
<td>8</td>
</tr>
<tr>
<td>Barrier</td>
<td>9</td>
</tr>
<tr>
<td>Consequences</td>
<td>9</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Conflict</td>
<td>9</td>
</tr>
<tr>
<td>Perceptual Organization (PO)</td>
<td>9</td>
</tr>
<tr>
<td>Perceptual Range (PR)</td>
<td>10</td>
</tr>
<tr>
<td>Perceptual Personalization (PP)</td>
<td>10</td>
</tr>
<tr>
<td>Organization of the Report</td>
<td>10</td>
</tr>
<tr>
<td>II. REVIEW OF THE LITERATURE</td>
<td>12</td>
</tr>
<tr>
<td>Literature Concerned with College Admissions</td>
<td></td>
</tr>
<tr>
<td>Practices and the Predictive Value of</td>
<td>12</td>
</tr>
<tr>
<td>Various Instruments</td>
<td></td>
</tr>
<tr>
<td>Literature Concerned with the Thematic</td>
<td></td>
</tr>
<tr>
<td>Apperception Test</td>
<td>22</td>
</tr>
<tr>
<td>III. THE EXPERIMENTAL DESIGN</td>
<td>27</td>
</tr>
<tr>
<td>The Experimental Design</td>
<td>27</td>
</tr>
<tr>
<td>Selection of the Subjects and Description</td>
<td>27</td>
</tr>
<tr>
<td>of the Groups</td>
<td></td>
</tr>
<tr>
<td>Administration of the Test</td>
<td>30</td>
</tr>
<tr>
<td>The Methods of Analysis</td>
<td>32</td>
</tr>
<tr>
<td>Social Setting</td>
<td>33</td>
</tr>
<tr>
<td>The Central Figure</td>
<td>33</td>
</tr>
<tr>
<td>The Dominant Motivational State</td>
<td>33</td>
</tr>
<tr>
<td>The Frustration</td>
<td>34</td>
</tr>
<tr>
<td>The Resolution</td>
<td>36</td>
</tr>
<tr>
<td>Perceptual Organization (PO)</td>
<td>39</td>
</tr>
<tr>
<td>Perceptual Range (PR)</td>
<td>39</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Perceptual Personalization (PP)</td>
<td>41</td>
</tr>
<tr>
<td>Scorer Reliability</td>
<td>42</td>
</tr>
<tr>
<td>Description of the Thematic Apperception Test</td>
<td>45</td>
</tr>
<tr>
<td>IV. PRESENTATION AND TREATMENT OF THE DATA</td>
<td>48</td>
</tr>
<tr>
<td>The Objective Scoring Method</td>
<td>48</td>
</tr>
<tr>
<td>The Story Analysis Method</td>
<td>51</td>
</tr>
<tr>
<td>Comparison of Major Dominant Motivational States</td>
<td>52</td>
</tr>
<tr>
<td>Analysis of Barriers</td>
<td>56</td>
</tr>
<tr>
<td>Analysis of Conflict stories</td>
<td>56</td>
</tr>
<tr>
<td>Resolutions--Reactions to Frustration</td>
<td>59</td>
</tr>
<tr>
<td>Motivational State held constant</td>
<td>59</td>
</tr>
<tr>
<td>Use of Facilitators and Inhibitors</td>
<td>68</td>
</tr>
<tr>
<td>Consequences</td>
<td>70</td>
</tr>
<tr>
<td>Agreement of Central Figure with sex of subject</td>
<td>72</td>
</tr>
<tr>
<td>Responses to specific pictures</td>
<td>72</td>
</tr>
<tr>
<td>V. INTERPRETATION OF THE DATA AND THE DEVELOPMENT OF DIFFERENTIATING CRITERIA</td>
<td>77</td>
</tr>
<tr>
<td>Differences which are Significant at .05 Level</td>
<td>78</td>
</tr>
<tr>
<td>Differences which are Statistically not Significant at .05 Level</td>
<td>81</td>
</tr>
<tr>
<td>Subjective Impressions</td>
<td>84</td>
</tr>
<tr>
<td>List of Criteria</td>
<td>84</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>PAGE</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>VI. APPLICATION OF THE CRITERIA</td>
<td>87</td>
</tr>
<tr>
<td>VII. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS</td>
<td>93</td>
</tr>
<tr>
<td>Summary and Conclusions</td>
<td>93</td>
</tr>
<tr>
<td>Summary</td>
<td>93</td>
</tr>
<tr>
<td>Conclusions</td>
<td>95</td>
</tr>
<tr>
<td>Recommendations for Further Study</td>
<td>97</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>100</td>
</tr>
<tr>
<td>APPENDIX Instructions for Story Analysis Method</td>
<td>103</td>
</tr>
</tbody>
</table>
### LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>44</td>
</tr>
<tr>
<td>II.</td>
<td>54</td>
</tr>
<tr>
<td>III.</td>
<td>57</td>
</tr>
<tr>
<td>IV.</td>
<td>60</td>
</tr>
<tr>
<td>V.</td>
<td>62</td>
</tr>
<tr>
<td>VI.</td>
<td>64</td>
</tr>
<tr>
<td>VII.</td>
<td>66</td>
</tr>
<tr>
<td>VIII.</td>
<td>67</td>
</tr>
</tbody>
</table>

**I. Scorer Reliability--Percentage of Agreement**
Between Two Scorers on Each of Twelve
Categories of the Thematic Apperception
Test When Analyzed by the Story Analysis

Method

**II. Major Dominant Motivational States of Stories**
Told by the Honor and Probationary Groups

**III. Numerical Rank of Barriers Used by Honor and**
Probationary Groups

**IV. Resolutions Used by Honor and Probationary**
Groups

**V. Barriers and Resolutions Used in Stories with a**
Major Dominant Motivational State of
Autonomy

**VI. Barriers and Resolutions Used in Stories with**
Major Dominant Motivational State of
Anxiety

**VII. Barriers and Resolutions Used in Stories with**
Major Dominant Motivational State of
Achievement

**VIII. Barriers and Resolutions Used in Stories with**
Major Dominant Motivational State of
Intranurturance
IX. Barriers and Resolutions Used in Stories with Major Dominant Motivational State of Sex ... 69

X. Criteria Developed for Distinguishing Between Groups ... ... ... ... ... ... ... ... ... ... 86

XI. Results of the Application of the Criteria ... 90
CHAPTER I

INTRODUCTION TO THE STUDY

The problems of college student mortality and the prognosis of academic success have long intrigued school administrators and educational psychologists. The prediction of academic achievement remains a problem and the tremendous waste represented by the high percentage of drop-outs continues to pose a serious challenge to our institutions of higher education.

I. THE PROBLEM

Statement of the problem

The problem with which this study was concerned was to determine what differences, measurable by the Thematic Apperception Test, exist between students who have been identified as successful in college and those who have been identified as unsuccessful.

The Hypothesis

The null hypothesis to be tested is that no difference, other than difference due to chance, exists between the responses made to the Thematic Apperception Test pictures by a group of honor students at the College of the Pacific and the responses made by a group of probationary students at the same institution and that identification of a validation group of honor and probationary students on the basis of the
Thematic Apperception Test will be no different from a chance identification.

II. NEED AND JUSTIFICATION FOR THE STUDY

The high percentage of students who fail to remain in a college or university long enough to complete a course of study calls attention to flaws in the current admission procedures, as well as in curricula and counseling facilities offered by the institutions.

Recent studies\(^1\) identify poor scholarship as the most frequently mentioned cause of student mortality. A close second is financial difficulty. Obviously the intake policy of a college can exercise little control over the financial status of its candidates, nor would this be a desirable criterion for admission. However, differing costs tend to make an institution indirectly selective on this basis.

Current admissions practices at most colleges, and universities make use of two criteria for admission, in one form or another.\(^2\) These are the student's high school


record and/or a college entrance examination. In admitting a student on the basis of his high school record, the institution selects on the basis of standing in the graduating class, or the grades earned. Thus an admitting institution may arbitrarily set a cutting point such as a position within the top 45 per cent of the graduating class or a certain grade point average.

Entrance examinations such as the American Council on Education College Entrance Examination and the Ohio State Psychological Examination are also currently popular with colleges as screening devices for admission. Studies have shown a positive and significant prognostic value for these two instruments. Cutting points for both of these instruments have been arbitrarily established, frequently on the basis of criteria other than the probability of success--such as space and class size.

Less frequently an institution attempts to evaluate the personality of the individual applicant. Such factors as motivation, attitudes and the value system of the individual student undoubtedly contribute in a large

---

3Cosand, loc. cit.

degree to his success or failure. Attempts at such evaluation have not been productive of many useful and usable instruments and techniques. There are a number of reasons for this lack of success, among which, perhaps the most outstanding is the difficulty of objective evaluation.

There have been attempts\(^5\) to utilize currently existing personality and attitude inventories to determine their predictive value. Other studies have reported attempts to develop new instruments.

There are factors which contribute to a student's success or failure in college which are not readily measurable by high school graduating class standing, grade point average, or a psychological college entrance examination which is essentially a measure of achievement in specified subject matter areas. The individual's approach to problems and the techniques he uses for problem solution, his reaction to various types of frustration, and the general level of adjustment to his environment are among such factors. This study was concerned with these factors and their relation to the total admissions picture.

It appeared that personality differences between successful and unsuccessful students exist and that these differences could be identified by means of a projective technique. Such a technique would be a valuable addition to current admissions practices. There appeared to be a need to investigate the causal factors underlying the observable phenomena, i.e., what are the characteristics which cause one student who is able to satisfy the requirements for college admission to fail academically while another student who also satisfied the same requirements becomes an honor student?

III. THE METHOD AND TECHNIQUES OF RESEARCH

The method of research was an experimental study using two groups of students to whom the Thematic Apperception Test was administered. The procedure was as follows:

1. Two groups of students were selected, one of which was identified as successful and the other as unsuccessful or probationary.

2. The Thematic Apperception Test was administered to each of the subjects.

3. The responses of the subjects were analyzed.

4. The data were treated statistically to discover differences between the groups.

5. Criteria were developed on the basis of differences between the two groups.

6. The criteria were tested by a blind analysis of the responses of a subsequent group of students.
IV. DEFINITION OF TERMS

Projective test

A test which attempts to gain insight into the individual personality by means of evaluation of responses to stimuli which provide an opportunity for the subject to reveal information concerning his motivations, perceptions, attitudes, reactions to frustration, and other aspects of his personality.

Protocol

The written record of a subject's responses to the Thematic Apperception Test.

Story

The response made by a subject to the pictures of the Thematic Apperception Test.

Response

This term is used interchangeably with "Story" in this study.

Probationary student

A student whose grade point average is not adequate for graduation. At the College of the Pacific at the time of this study (April, 1956) a student was placed on probation if his grade point average was below 1.0 (C). No
student was considered for graduation whose cumulative grade point average was not 1.0 or above.

**Honor student**

One whose grade point average is 2.5 or above at the College of the Pacific, at the time of this study "A" equals 3.

In the Thematic Apperception Test Story Analysis Method developed by Bijou which forms the basis for the analysis of the stories used in this study the following terms are used. A more complete definition of these terms will be made in Chapter III.

**Setting**

The social setting in which a story is told. Under this heading fall five sub-headings: Domestic interrelations; Social interrelations; Love, sex and marital relations; School and training; Vocational and economic.

**Central Figure**

The character in the story with whom the subject seems to identify.

**Dominant Motivational State**

The main motivational state as defined in terms of the behavior sequences given in the story. The Motivational States which are listed by Bijou are:
Abasement                  Creation
Achievement               Deference
Acquisition               Dominance
Affiliation               Excitance
Aggression—Emotional and Verbal Exposition
Aggression—Physical Social Intragression
Aggression—Physical Asocial Intranurtureance
Aggression—Destruction    Nurturance
Anxiety Physical          Fussivity
Anxiety Social            Sex
Autonomy                   Succorance
Cognizance                Sustenance

Frustration

Any event blocking or delaying the sequence of behavior which attempts to bring about the goal or goal reaction which satisfies the motivation state.

Facilitator

Any person, thing or event which directly or indirectly functions to assist the central figure in reaching his goal.

Inhibitor

Any person, thing or event which directly or indirectly functions to retard the central figure in reaching his goal.

Resolution

The reaction of the Central Figure to frustration. Used synonymously with "Reaction".

Reaction

Synonymous with "Resolution".
Barrier

A barrier is any person, thing or event which blocks or delays the behavior which attempts to bring about the goal or goal reaction which satisfies the motivational state. In stories where a barrier exists, the barrier becomes the frustration.

Consequences

Consequences are of two types—personal and social—and refer to the consequences of the course of action pursued by the central figure for resolution.

Conflict

A conflict exists when a central figure is torn between two strong, opposing motivational states. Where a conflict exists, this becomes the frustration.

The following terms form the basis of a second method of analysis developed by Dana⁶ and used in this study. All definitions are from Dana.

Perceptual Organization (PO)

This term is used to identify a category which reflects the subject's ability to follow the standard directions to "tell a story." Seven components are included: (a) card description (b) present behavior (c) past events (d) future

⁶Richard H. Dana, "A Manual for Objective TAT Scoring" (St. Louis, Missouri: St. Louis State Hospital, 1955. Mimeoographed.)
events (a) feeling (f) thought (g) outcome.

**Perceptual Range (PR)**

This term designates the degree to which a subject adheres to the norms for various aspects of the stories. Three stimulus properties were chosen for each card on the basis of inclusion by approximately 90 per cent of a "normal" group.

**Perceptual Personalization (PP)**

This term is used to designate deviations from a relatively consistent, organized, coherent protocol-product, the Thematic Apperception Test story.

These terms will be discussed more intensively in a future chapter.

V. ORGANIZATION OF THE REPORT

Chapter II deals with a review of the literature pertinent to this study and Chapter III describes the experimental design, the selection of the subjects and the techniques utilized. The following chapter presents the data and describes the treatment to which the data were subjected. The interpretation of the data and the development of the differentiating criteria are presented in Chapter V. Chapter VI discusses the application of these criteria. The final chapter presents a summary of the data,
conclusions, and recommendations for further study and research.
CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to review the literature pertaining to the study.

I. LITERATURE CONCERNED WITH COLLEGE ADMISSIONS

PRACTICES AND THE PREDICTIVE VALUE

OF VARIOUS INSTRUMENTS

Much has been written regarding the value of various techniques currently in use for the purpose of determining who shall be admitted to college and who shall be refused admission. The methods used in a large proportion of the institutions reported follow a closely similar pattern.

Cosand\(^1\) reviewed the literature pertaining to the admissions practices of colleges over the United States and found nine criteria categories prevalent:

1. Completion of a set pattern of courses in high school.
2. The requirement of minimum academic achievement in specified required courses.
3. The requirement of minimum academic achievement in secondary school.

4. Required minimum academic achievement for two or three years of preparatory school.

5. Rank in high school graduating class.


7. Principal, teacher and counselor recommendation.

8. Personal interview.

9. Combinations of two or more of the above.

Snyder\(^2\) reported three principal factors which provide the criteria for selection in characteristic independent residential colleges and universities in California. These were scholastic achievement in preparatory school, aptitude based on a test, and personal qualifications. He summarized as follows:

When admission is competitive, the quality of the candidate and his record become extremely important. This is the fundamental reason why so much weight is given to the results of the aptitude tests and to the recommendations of the candidate's teachers and principal. With these two factors in addition to the academic record, the admissions committee has a great deal more data on which to base its selection. It is better able to predict success or failure on the part of the candidate, although, like political pollsters, admissions committees are far from infallible.

Monroe\(^3\) expressed some question concerning the predictive ability of test scores. Following a discussion of


the prognostic value of tests he stated:

It is apparent that college aptitude ratings have some prognostic value. The predictive value is not high since students who score high on aptitude do not always score high in school.

Some institutions⁴ because of the extremely large numbers of candidates applying for admission, and the relatively small proportion of these that can be accepted, are able to be highly selective. Such institutions usually employ more elaborate screening techniques which continue to fall generally into the widely accepted pattern of aptitude test scores, high school grades, graduating rank, principal's recommendation and a personal interview. Such committees frequently look for special talents and other outstanding qualities in their screening procedures and depend heavily on the personal interview to provide additional indications of the qualities they are seeking.

Walker⁵ described the procedures followed by the Board of Admissions of Brown University which fall into this pattern. A serious attempt is made to evaluate all the qualities which can affect the candidate's success in college. The selection criteria are heavily weighted in favor of the

⁴Snyder, loc. cit.

College Aptitude Tests and the applicant's high school record. If a candidate scores low on both of these, he is refused admission. If he scores extremely high on both, he is almost certain to be admitted. If neither of these criteria is definitive, the Board frequently looks for special strengths or weaknesses and accepts or rejects on the basis of more or less subjective judgments.

Despite the efforts of college admissions boards to improve their techniques and to refine the instruments they use, college student mortality remains high.6

Monroe7 provides the following figures from the U.S. Office of Education regarding attrition. In 1937 the gross mortality in public institutions was equal to 64.5 per cent of the matriculating freshman class. Gross mortality is defined as the percentage of matriculating freshmen who do not remain in the institution of their first registration long enough to graduate. Net mortality is defined as the difference between the number of freshmen and the number in the graduating class four years later. Other figures reported are: Net mortality in public institutions was equal to 64.5 per cent of the matriculating freshmen. Gross mortality in private

7 Ibid., p. 1286.
institutions was equal to 58.5 per cent of a given freshman class. The net mortality in similar institutions was 39.9 per cent. It becomes apparent that the gross mortality figures include transfers to other institutions, and those who return after a year or more of delay, in addition to the actual drop-outs.

Iffert\(^8\) reported a study made by the United States Office of Education which proposed to answer three questions.

1. What is the rate of student drop-out relative to the type of institution, economic status, motivation of the student, academic performance, self help, extra curricular activities and residence? 2. What are the reasons given for withdrawal? 3. What are the implications of the nature and mobility of college student population for recruitment, selection, admission, counseling, scholarship and other policies and practices of colleges?

A tentative report shows that of those students enrolling in the fall of 1950:

- 11.0 per cent attended one semester or less,
- 26.7 per cent were casualties by the end of the first year,
- 15.0 per cent dropped out during the second year,
- 13.7 per cent did not finish the fourth year,
- 38.5 per cent graduated from the institution of first registration.

The percentage of students remaining in the institution of their first registration to graduate was 32.5 per cent from public institutions and 46.6 per cent from private institutions. He found further that academic failure was most often given as the reason for withdrawal, with financial

difficulty ranking second.

Monroe\(^9\) reported much the same type of information regarding the reason for withdrawal, stating, "Poor scholarship is the most frequent cause of mortality. Also it is the most reliable since college records are the basis for such elimination."

Certain studies\(^10\) examining college success base their conclusions on early year success or failure as compared to aptitude test score or graduating class rank. First year grades are the most common criterion used. Munger\(^11\) studied the relation between persistence in college and the common criteria for admissions—graduating class rank and the Ohio State Psychological Examination. He found significant relationships between persistence and both the psychological examination and the rank in graduating class. He was unable, however, to account for some of the differences which he also found. He concluded:

"Obviously factors not touched on in this study are operating to produce the dissimilarity between the relationship of first semester grades and persistence"

\(^9\)Monroe, loc. cit.


\(^11\)Munger, loc. cit.
in college of students who graduate in either upper, middle or lower third of their high school graduating classes. As was suggested before, it would seem that the level of aspiration is a strong factor. Students who do not achieve grades which are near what they expect as a carryover from secondary school are apt to drop out of college. . . . It seems clearly indicated that devices using third ranking and scholastic aptitude test scores are inadequate in indicating which students persist to graduation.

Farwell reported an admissions program which included additional testing and individual attention, including personality evaluation, with the conclusion that "many desirable candidates would have been refused admission if it were not for this type of an admissions program."

Boyer and Koken evaluated three criteria with significant results. Using the American Council on Education Psychological Examination for College Freshmen, the Ohio State University Psychological Examination, and high school graduating class rank, they found positive correlations between these criteria and the quality point averages of a group of college students. All of their "r's" were significant beyond .05; i.e., a correlation as high as the one observed would occur by chance less than five times in one hundred.


Despite the established high degree of correlation between selective instruments and subsequent success in college, whether the indicator be grade point average, persistence, or grades for a given semester, investigators continue to search for an evaluative instrument which will measure the as yet unidentified quantity or characteristic which causes as many as 50 per cent of college students to fail in college after having once satisfied the currently existing requirements for admission.

There have been attempts to develop new instruments to satisfy the need for this type of measurement. Gough\(^{14}\) reported such a study utilising items from the Minnesota Multiphasic Personality Inventory in addition to newly developed items. His study showed the Honor Point Ratio (HR) scale to correlate positively with the course grades in a college psychology class (r = 0.32). A subsequent validation study showed a slightly higher correlation (r = 0.48) when students from three institutions were measured. Bendig and Klugh\(^{15}\) validated Gough's study and found the HR scale to correlate the same as in Gough's original finding. They

---

also made use of Taylor's Manifest Anxiety Scale\textsuperscript{16} and found it virtually useless in predicting quality point averages. Bendig\textsuperscript{17} also reported the use of the same two scales in a separate study.

Attempts to use or adapt existing instruments as predictors of college success have also been made. Chabbari\textsuperscript{18} used two projective tests as part of a battery of tests to predict success in college. His findings were that the two projective tests contributed significantly to the value of the total battery.

Malloy\textsuperscript{19} developed a biographical data type of instrument for use in predicting college success. The instrument, which yielded a large amount of autobiographical information and undoubtedly some information regarding self and self concept, was found to correlate significantly \((r = .446)\) with the grades earned in various collegiate classes.

\begin{flushleft}

\textsuperscript{17} A. W. Bendig, "The Validity of Two Temperament Scales in Predicting Student Achievement in Introductory Psychology," \textit{Journal of Educational Research}, 50:571-579, April, 1957.


\end{flushleft}
Another technique was attempted by Young\textsuperscript{20} in which he evaluated the predictions made by a group of college freshmen for their own success. The students' predictions were found to correlate positively ($r=.63$) with grade point averages actually earned by the students. This prediction correlated better with actual achievement than any other single instrument used at the institution at which the study was made.

Cooper\textsuperscript{21}, attempting to validate a study by Monroe\textsuperscript{22}, used a group technique for the administration of the Rorschach Test in an attempt to make use of the test in group situations and for prediction. He used the technique with a group of students at San Francisco State College.

Following a group administration of the Rorschach Test, grade point averages were collected for each of three semesters. His findings were that the group Rorschach technique did not predict grade point averages accurately.

\textsuperscript{20}F. Chandler Young, "College Freshmen Judge Their Own Scholastic Promise," Personnel and Guidance Journal, 30:399-403, Mar. 1952.


the Inspection Rorschach predictions were ambiguous. The Inspection Rorschach failed to predict the G.F.A. for women but one correlation for men was significant at the 5 per cent level. The null hypothesis was not rejected.

II. LITERATURE CONCERNED WITH THE THEMATIC APPERCEPTION TEST

The Thematic Apperception Test was introduced by Murray and Morgan\(^{23}\) in 1935 and has since that time become one of the most widely used projective tests in clinical use, ranking second only to the Rorschach\(^{24}\).

Much has been written about the Thematic Apperception Test in clinical use and its value as a diagnostic instrument has been well established. Murray and Stein\(^{25}\) rated a number of officer candidates for leadership ability on the basis of Thematic Apperception Test stories. These ratings were then correlated with independent judgments of these men by their commanding officers and found to correlate highly (\(r=0.65\)).


Harrison and Rotter\textsuperscript{26} administered the test to forty patients at Worcester State Hospital and then drew inferences regarding diagnosis from the Thematic Apperception Test stories. The inferences agreed in approximately 32.5 per cent of the cases when compared with hospital records.

Cowden\textsuperscript{27} reported a study in which several diagnostic instruments, including the Thematic Apperception Test, were used with a group of patients on intake to a mental hospital. These same patients were retested with the same instruments upon their being considered for discharge to determine the ability of the tests to indicate improvement. The Thematic Apperception Test was found to indicate the degree of improvement significant at the .05 level, when compared with the judgment of the staff psychiatrists.

Eron\textsuperscript{28} analyzed the stories of a group of "diagnosed schizophrenics" and a group of college students on the basis of the themes. His conclusions were as follows:

1. Thematic material is more a function of the card material and less that of the disturbances of the subject.


2. For sixteen of twenty cards the differences in the number of themes does not distinguish between groups.
3. The number of subjects confused over the sex of the central character does not distinguish between groups.
4. The first ten cards produce more interpersonal themes than the second ten.
5. An examiner must be cautious in using the themes of the Thematic Apperception Test for diagnosis.

Kagan and Mussen\(^29\) used a group of male undergraduate students and analyzed stories to selected pictures for dependency themes. The subjects were then placed in a group pressure situation and observed. Those who were high in dependency themes were also high in yielding to group pressures.

Dana\(^30\) found that the Thematic Apperception Test discriminated significantly between psychotic, neurotic and normal subjects when a scoring technique which he developed was utilized.

Tomkins\(^31\) stated:

The TAT is peculiarly sensitive in eliciting material which the individual ordinarily guards zealously from public scrutiny. . . . Further knowledge of the test will probably improve the validity of the inferences we can make from the TAT.


Numerous scoring techniques have been developed during the past twenty years. These range from highly concentrated efforts to objectify to those which depend heavily on the subjective judgment of the examiner. The method developed by Murray is based on a system of needs and "presses" to which the central figure is subjected. Many of the subsequent methods have been variations on this original theme or adaptations of the process.

Perhaps the most common criticism of the Murray technique is that it is cumbersome and lacks objectivity. Davis developed a highly objective technique which consists of the enumeration of certain properties in the stories. Tomkins approached the test from the point of view of content analysis based on certain psycho-social


33 Murray, loc. cit.

34 Ibid.

35 Tomkins, loc. cit.
areas close to the subject. Bellak\textsuperscript{36} in collaboration with Murray developed a scoring blank which purported to simplify and objectify the procedure. Bijou\textsuperscript{37} drew from the needs and "presses" of Murray and the social settings of Tomkins for the analysis technique which he developed.

The available literature does not include a study utilizing the Thematic Apperception Test for the purpose which is of interest here. It was hypothesized that personality factors operate in the determination of the level of achievement attained by a college student and that certain of these factors assist while others hinder the student. It was further hypothesized that these factors would be measurable by the Thematic Apperception Test and be evident as differences between academically successful and unsuccessful students.

The literature on admissions shows numerous attempts to adapt or develop instruments which will predict college success more accurately. Certain personality tests have been used for this purpose but no study utilizing the Thematic Apperception Test for this purpose was found.


\textsuperscript{37}Sidney W. Bijou, "Story Analysis," (Unpublished material). Permission to quote granted by the author.
CHAPTER III
THE EXPERIMENTAL DESIGN

This chapter describes the experimental design, the selection of the subjects, and the techniques and procedures employed in this study.

I. THE EXPERIMENTAL DESIGN

Two groups of students were selected for this study, one from the Dean's Honor List which is composed of students who have earned a grade point average of 2.5 (A-3) or higher for a given semester, and the other from students on probation at the College of the Pacific. The Thematic Apperception Test was administered to each of these subjects and the results analyzed for differences between the two groups. The criteria evolving from this analysis were then applied to a subsequent group to determine their validity.

II. SELECTION OF THE SUBJECTS AND DESCRIPTION OF THE GROUPS

Sophomore students in their second semester at the College of the Pacific were used because this appeared to be the stage in their college career which would be best suited to this study. If a group were selected earlier in their college life it was felt that this would be too early to
consider them as being successful in college. If the group were selected from among third and fourth year students a large number of unsuccessful students would have been eliminated prior to this time.

The Dean of Men supplied two lists—one consisting of all fifteen students who were on probation and the other of seventeen comprising the Dean's Honor List.

Of the original fifteen on the probation list, one had dropped out of school between the selection of the list and the beginning of the study. Two more were eliminated because of a decision to use only Caucasian subjects. Studies\(^1\) have shown that subjects of races other than Caucasian respond to the Thematic Apperception Test in a characteristically different manner and it was felt that this would have the effect of injecting an additional variable into the study. One additional subject was unable to participate due to illness, having withdrawn from classes during the study but before taking the test. The final probationary group numbered eleven subjects to whom the Thematic Apperception Test was administered.

Of the honor group, three had dropped from school

between the time the list was prepared and the beginning of
the study. One was rejected for racial reasons and one was
rejected because she had been erroneously reported as a
sophomore but was actually a third year student. Four others
declined the invitation to participate in the study, leaving
eight subjects in the original group, making it necessary
to obtain additional subjects. From a second list supplied
by the Dean's office seven additional subjects were selected.
This list consisted of students who had a grade point average
of 2.0 (B) or above. These seven were randomly selected
from a list of fourteen subjects whose cumulative grade point
average satisfied the requirement. The final honor group
to whom the Thematic Apperception Test was administered
numbered fifteen.

At the initial contact, each subject was informed by
the examiner that he, the subject, was being asked to par-
ticipate in an experimental study which the examiner was
making as a part of his graduate work. If the subject
agreed to participate, an individual appointment was made
to explain the study more completely. At this time the
prospective subject was told that the experiment involved a
test in which the examiner was interested and that the
subject would participate by taking this test. The composition
of the groups or the reason for the selection of individual
subjects was not revealed, but each subject was told that
his name had been provided by the Dean of Men of the College of the Pacific.

Questions regarding the nature of the study were answered as accurately as possible without revealing to the subject that he had been selected because of his probationary or honor status. It was necessary to emphasize the examiner's interest in the test being used and his desire to learn what discriminative powers it possessed.

III. ADMINISTRATION OF THE TEST

The Thematic Apperception Test was administered to each of the twenty-six subjects by the same examiner. All twenty cards were used for each subject following the order suggested by Murray². Due to the press of time and the difficulty of arranging two sessions the entire twenty pictures were presented at a single sitting, with a ten to fifteen minute break between cards ten and eleven. During this break the examiner encouraged the subject to talk about himself and tried to help him to relax and become more comfortable, particularly if there appeared to be some amount of tension present.

The instructions to all subjects were identical.

Each subject was told:

This is a test of the imagination. I will present a series of pictures and I want you to tell a story about each one as it is presented to you. I would like to have you include three things in each story. Tell what led up to the situation in the picture, tell what is happening in the picture and then tell how it comes out. Try to tell me how the people feel and what they are thinking. Here is number one. See what you can do with it.

If a subject found it difficult to begin a story the examiner would say, "Perhaps it would help to begin, 'Once upon a time'," If some essential part of the first or second story was omitted, the examiner would say, "That was good but remember, we want you to tell what led up to the picture, what is happening in the picture and how it comes out."

Beyond this, no further instructions were given except to give encouragement to the subject. Following the break between pictures ten and eleven, the instructions were as follows:

You did a good job on the first ten stories. This next set will give you more opportunity to use your imagination. Now you go ahead and really let your imagination go.

Questions regarding number eleven, such as, "What is it?" were answered non-directively by encouraging the subject to go ahead and use his imagination. Card sixteen (blank) frequently necessitated additional instruction. When this became necessary, the examiner would say, "Perhaps it would help if you were to imagine a picture there and then tell a story about it."
A wire recorder was used to gather the verbatim responses to the pictures. Prior to analysis each story was transcribed to a typescript, following which the story was coded on a "Uni-Sort" card. The following information was punched out on the card:

- Group
- Sex of Subject
- Agreement of Sex of Central Figure with Sex of Subject
- Social Setting
- Major Dominant Motivational State
- Concurrent Dominant Motivational State
- Conflicting Dominant Motivational State
- Barrier
- Conflict
- Facilitator
- Inhibitor
- Resolution -- Conflict
- Resolution -- Barrier
- Personal Consequences
- Social Consequences

This enabled the experimenter to compare the groups on the basis of various determinants by selecting one determinant from among the total number and examining other determinants while holding one or more constant.

IV. THE METHODS OF ANALYSIS

Two methods of scoring and analyzing the Thematic Apperception Test stories were selected for use. One, developed by Bijou, formed the major part of this study.

---

3"Uni-Sort" is the trade name for an edge punched card system of filing and sorting. Copyrighted and marketed by Charles R. Hadley Co., Los Angeles, California.

and will be referred to as the Story Analysis Method. Each story was analyzed separately for Social Setting, Central Figure, Dominant Motivational State, Frustration, Resolution, and Consequences. All the following definitions and explanations are from Bijou.

Social Setting

The setting of the story may fall into any one of the five categories:

1. Domestic interrelations—in childhood, adolescence, or adulthood.
2. Social interrelations other than domestic.
3. Love, sex and marital relations.
4. School and training.
5. Vocational and economic.

The Central Figure

The Central Figure is that character in the story with whom the subject seems to identify. The Central Figure is particularly important in stories told to pictures in which the figures are indefinite or in which there is a choice of several characters with whom the subject can identify.

The Dominant Motivational State

The Dominant Motivational State is the main motivational state of the Central Figure. There are twenty-four such states in the story analysis technique used. These are:

Ibid
<table>
<thead>
<tr>
<th>Abasement</th>
<th>Creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Deference</td>
</tr>
<tr>
<td>Acquisition</td>
<td>Dominance</td>
</tr>
<tr>
<td>Affiliation</td>
<td>Excitance</td>
</tr>
<tr>
<td>Aggression—Emotional and Verbal</td>
<td>Exposition</td>
</tr>
<tr>
<td>Aggression—Physical Social</td>
<td>Intragression</td>
</tr>
<tr>
<td>Aggression—Physical Ansocial</td>
<td>Intranurturance</td>
</tr>
<tr>
<td>Aggression—Destruction</td>
<td>Nurturance</td>
</tr>
<tr>
<td>Anxiety Physical</td>
<td>Passivity</td>
</tr>
<tr>
<td>Anxiety Social</td>
<td>Sex</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Suggestance</td>
</tr>
<tr>
<td>Cognizance</td>
<td>Sustenance</td>
</tr>
</tbody>
</table>

These are described fully in the Appendix, page 104.

The motivational states which a subject uses in the stories he tells frequently indicate a great deal about the subject's motivation and the direction it will take. Consequently it was reasoned that differences would exist between the motivation of the students who comprised the two groups of students studied and that these differences would become apparent in the story material supplied by them.

The Frustration

As defined above, the frustration is an event blocking or delaying the sequence of behavior which attempts to bring about the goal or goal reaction which satisfied the motivational state, i.e., reduces or eliminates it. A Frustration may be a Barrier or a Conflict between two divergent Motivational States.

If the Frustration is a Barrier, it can take any one of the following forms:
1. A state of the Central Figure.
2. A trait of the Central Figure.
3. An individual.
4. A group of individuals—organized.
5. A group of individuals—unorganized.
6. Conventions, laws, mores, institutions.
7. Physical objects.
10. Space and place.

In the case of a Conflict, the Central Figure is frustrated by two conflicting motivations rather than by an external force.

Frequently an auxiliary force in the form of an Inhibitor or a Facilitator is used in a story. These forces, as their name implies, tend to assist or hinder the Central Figure in reaching his goal, or satisfying the Motivational State. These forces fall into the same categories as do the Barriers.

The Frustrations which a subject places before the Central Figure in his stories can reveal a great deal about the way in which the subject views obstacles in his path. This is not to say that the stories are necessarily auto-biographical since this would obviously be a tremendous
overimplification. The rationale of the Thematic Apper-
ception Test does emphasize, however, that the barriers in
the stories come from the story teller rather than from the
picture about which the story is told.

The Resolution

The Resolution or interaction between goal oriented
behavior and conflicting behavior or a Barrier is the action
which the Central Figure takes in each case. Under conditions
of conflict, i.e., situations with simultaneous motivational
states having incompatible instrumental act sequences, the
Central Figure reacts in one of the following ways:

1. Makes a choice.
   a. Alone.
   b. With assistance.

2. Does not make a choice—continues vacillatory
   behavior (fixation).

3. Compromises—modifies one or both motivational
   states.
   a. Alone.
   b. With assistance.

4. Leaves the situation.
   a. Runs away.
   b. Commits suicide.
   c. Resorts to drugs, alcohol, etc.
   d. Fantasy solution.
   e. Behavior disorder.
Under conditions of a Barrier, i.e., a situation in which the behavior sequence based on the Motivational State is delayed or blocked, the Central Figure reacts in one of the following ways:

1. Maintains the Motivational State.
   a. Takes whatever direct action is necessary to by-pass, eliminate, or destroy the Barrier alone or with assistance.
   b. Indulges in non-effective action. He may continue non-adaptive behavior or he may make an attempt, then give up and submit.
   c. Changes instrumental acts and goal behavior.
   d. Leaves the situation.
      (1) Runs away,
      (2) Does not enter,
      (3) Commits suicide,
      (4) Resorts to drugs, alcohol, etc.
      (5) Fantasy (verbal solution),
      (6) Behavior disorder.
   e. Accepts external resolution.

2. Changes Motivational State and attains new goal.

The consequences of a course of action form an important part of a story analysis. From this an examiner can gain some insight into the social acceptability of the subject’s attitude toward various modes of resolving a frustrating
situation. Two kinds of consequences occur in a story—
social and personal. Social consequences were divided into
three categories—the socially acceptable, the socially
unacceptable, and the questionable. Personal consequences
deal with the feelings of the Central Figure after the
problem has been dealt with. The four categories in this
section are Satisfaction, Anxiety, Neutral Feelings and
Ambivalence.

The story teller first creates a setting and places
within this setting a Central Figure with whom he identifies.
He then places a Frustration before this Central Figure, and,
if a story is complete, resolves this Frustration. It was
reasoned that students who were successful would respond in
a manner which was different from students who were proba-
tionary and in danger of being dropped from college.

A second method of analysis used in this study,
developed by Dana, is a technique which attempts to
objectify the analysis. In this study it will be referred
to as the Objective Method. Each protocol was analyzed
according to three scoring categories, Perceptual Organization
(PO), Perceptual Range (PR) and Perceptual Personalization
(PF).

6 Richard H. Dana, "A Manual for Objective TAT Scoring"
(St. Louis, Missouri: St. Louis State Hospital, 1955.
Mimeographed.)
Perceptual Organization (PO)

Perceptual organization reflects the subject's ability to follow the standard directions to "tell a story." Seven possible components are included: (a) card description, (b) present behavior, (c) past events, (d) future events, (e) feeling, (f) thought, (g) outcome. The selected stories in each protocol were analyzed for Perceptual Organization.

Perceptual Range (PR)

Perceptual Range measures how closely a subject adheres to norms for various aspects of the stories. Dans stated:

Empirical evidence has been used to establish criteria to content a group of "normal." So will include in their TAT stories a given percentage of the time. Three separate stimulus properties were chosen for each card on the basis of inclusion by approximately 90 percent or more of the "normal" group.

The selected stories in each protocol were analyzed for the presence of the fifteen stimulus properties and the score was the total number of these present.

The fifteen stimulus properties for males are:
Card 2 (a) family: young girl, woman, activity specified adult male
(b) fields or farm

Ibid., p. 3.
(c) books or school
Card 3 (d) figure, sex, and age specified
(e) emotions noted
(f) activity specified
Card 4 (g) male; emotions noted, activity specified
(h) woman; activity specified
(i) conflict or cooperation
Card 6 (j) man; emotions noted, activity specified
(k) woman; emotions noted
(l) personality referent
Card 7 (m) older male; activity specified, relationship specified
(n) male; emotions noted
(o) personality referent

The fifteen stimulus properties for women are:
Card 2 (a) family; young girl, activity specified; woman adult male
(b) fields or farm
(c) books or school
Card 3 (d) female
(e) emotions noted; activity specified
(f) story; death, murder, illness, frustration
Card 4 (g) male; emotions noted, activity specified
(h) woman; activity specified
(i) conflict or cooperation
Card 6 (j) male; activity indicated
(k) female; emotions noted
(1) relationship indicated
Card 7 (m) adult female; activity specified, emotions noted
(n) child, female, emotions noted
(o) relationship specified

Perceptual Personalization (PP)

Perceptual Personalizations are expressions, words, and phrases used in the stories which are incongruous and which have no obvious reference to the story that the subject is trying to tell. These inclusions are clearly neither stimulus reproductions nor additions to the stimulus.

PP are deviations from the relatively consistent, organized, coherent protocol-product, the TAT story. These deviations, in order to be scored, must be extreme. They may refer to things labeled performance adequacy, comments, parenthetical remarks, qualifications, picture criticisms, adventitious descriptions, vagueness, evasion, or direct personal reference.

Five selected cards from each protocol were used for analysis by the Dana technique. This method of analysis was developed on the basis of certain selected cards and the stories resulting from these cards were used in this study. The cards for males were 2, 3M, 4, 6M, and 7M. For females the cards were 2, 30F, 4, 60F, and 70F.

The scoring was done according to the method described in ibid., p.4.
by Dana, the total responses present in each category being the score for each of the categories, Perceptual Organization, Perceptual Range, and Perceptual Personalization.

V. SCORER RELIABILITY

The reliability of the scoring procedure used in the Objective Thematic Apperception Test Scoring appeared to be adequately established and no further attempt was made to establish scorer reliability in this study for this scoring procedure.

It was deemed desirable, however, to establish scorer reliability for the Story Analysis Method and the following procedure was followed:

Twenty-five stories were randomly selected from the total number of responses to be analyzed. These twenty-five stories were analyzed by the examiner who administered the test and by another psychologist who had had some experience with the test and with this method of analysis. This second analysis was done "blind", i.e., no information other than the sex of the subject was supplied with the story material.

The story analysis sheets were then tabulated and the number of instances of agreement and disagreement were re-

9Ibid., p. 1.
10Ibid., p. 10.
11Clarence L. Hall, School Psychologist, Humboldt County, California.
corded. It should be noted that the simple percentages of agreement are not a completely adequate indication. Certain of the categories presented a much greater opportunity for error than others. The Social Setting presented five possibilities, while the Central Figure was limited only by the number of characters in the story. There are twenty-four possible Motivational States. Facilitators, Inhibitors and Frustrations present eleven possibilities and the Resolutions present ten possibilities. In the case of consequences there are three possibilities in each category.

Two stories were considered unscoreable by one of the scorers, one of which was analyzed by the other. These were scored as disagreements.

The percentage of agreement varied from 64 per cent to 100 per cent with an average agreement of 82.3 per cent. On the Social Setting the agreement was 88 per cent, on Central Figure 100 per cent, on Major Dominant Motivational State 80 per cent, on Concurrent Motivational State 64 per cent, on Conflicting Motivational State 96 per cent, on Frustration—barrier 72 per cent, on Frustration—conflict 92 per cent, on Facilitators 88 per cent, Inhibitors 68 per cent, on Resolution 90 per cent, on Personal Consequences 80 per cent, on Social Consequences 80 per cent. These data are presented in Table I.
<table>
<thead>
<tr>
<th>Category</th>
<th>Agree</th>
<th>Disagree</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Setting</td>
<td>22</td>
<td>3</td>
<td>93</td>
</tr>
<tr>
<td>Central Figure</td>
<td>25</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Dominant Motivational State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major</td>
<td>20</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Concurrent</td>
<td>16</td>
<td>9</td>
<td>64</td>
</tr>
<tr>
<td>Conflicting</td>
<td>24</td>
<td>1</td>
<td>96</td>
</tr>
<tr>
<td>Frustration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barrier</td>
<td>18</td>
<td>7</td>
<td>72</td>
</tr>
<tr>
<td>Conflict</td>
<td>23</td>
<td>2</td>
<td>92</td>
</tr>
<tr>
<td>Facilitator</td>
<td>22</td>
<td>3</td>
<td>88</td>
</tr>
<tr>
<td>Inhibitor</td>
<td>17</td>
<td>8</td>
<td>68</td>
</tr>
<tr>
<td>Resolution</td>
<td>20</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Consequences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td>20</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Social</td>
<td>20</td>
<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>247</td>
<td>53</td>
<td>82.3</td>
</tr>
</tbody>
</table>
VI. DESCRIPTION OF THE THEMATIC APPERCEPTION TEST

The rationale of the analysis and the theory of the Thematic Apperception Test have been briefly mentioned in one or more instances previously in this report. It seems appropriate to devote some space to a more complete discussion of the Thematic Apperception Test, its theory and characteristics.

The term projective test stems from the psychoanalytic term projection and in this sense is a misnomer. Projection is defined as a defense mechanism by which an individual projects upon others those attributes and characteristics he finds unacceptable in himself. Projective tests have taken on a much broader meaning and test not only projection but all conceivable mental mechanisms, both expressive and defensive.\(^\text{12}\)

The Thematic Apperception Test is a relatively unstructured instrument. The pictures were selected to provide a varied stimulus situation and to allow for varied interpretation by the viewer and are intentionally somewhat ambiguous. The stories, then, are the product of the subject's motivations, frustrations and attitudes toward self and others. The stimulus material (the

Thematic Apperception Test pictures) bears essentially the same relation to the story as the day residue does to a dream in Freud's theory of dream formation.  

The subject identifies with the characters in the stories he tells and thus reveals the vantage point from which he views his environment.  

The hypothesis of this study is based on these characteristics of the Thematic Apperception Test. If this instrument can successfully identify the subject's motivation, frustration, and characteristic way of reacting to frustration, it will then be able to distinguish between successful and unsuccessful students to the extent that these characteristics operate in a student's success or failure.  

The hypothesis was that the Thematic Apperception Test can discriminate between the honor and probationary groups of students, and the groups were compared as follows:  

On the basis of the Objective Method the groups were compared as to the number in each of the three categories Perceptual Organization, Perceptual Range, and Perceptual Personalization. The mean, standard deviation, and range were computed for each group for each category.  

\[13 \text{Ibid., p. 183.}\]
The two groups were compared on the basis of the following components of the Story Analysis method: Motivational State, Barrier, Resolution or Reaction to Frustration, Resolution with relation to Motivational State, Use of Facilitators and Inhibitors, the Consequences of Resolutions used, and the identification of the sex of the Central Figure with the sex of the subject.

Special attention was given to the responses made to the pictures on Cards 1, 2, 4, 5, 10, 11, 13, 14, 15, 16, 19, and 20, which occur in the sets presented to both sexes.

The Thematic Apperception Test was administered to two groups of students, one designated as honor students and the other as probationary. The responses were subjected to analysis by two methods, one an intensive analysis of content and the other an objective method based on enumeration of certain characteristics.
CHAPTER IV

PRESENTATION AND TREATMENT OF THE DATA

The purpose of this chapter is to present the data gathered and to describe the treatment to which the data were subjected. The two data gathering methods are discussed and the data provided by each method are presented. The findings of each method are stated.

I. THE OBJECTIVE SCORING METHOD

In this analysis the stories told to the five selected pictures were analyzed for Perceptual Organization (PO), Perceptual Range (PR), and Perceptual Personalization (PP). The cards used were cards 2, 3GF, 4, 6GF, and 7GF for females and cards 2, 3BM, 4, 6BM, and 7BM for males.

In the Perceptual Organization category the mean number was 24.7 for the honor group with a standard deviation of 4.9 and a range of 15. For the probationary group the mean number was 24.7 with a standard deviation of 4.6 and a range of 14.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honor</td>
<td>24.7</td>
<td>4.9</td>
<td>15</td>
</tr>
<tr>
<td>Probationary</td>
<td>24.7</td>
<td>4.6</td>
<td>14</td>
</tr>
</tbody>
</table>

In the Perceptual Range category the mean for the honor group was 11.5 with a standard deviation of 1.5 and a range of 4. The mean for the probationary group was 11.1
with a standard deviation of 2.6 and a range of 10.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honor</td>
<td>11.5</td>
<td>1.5</td>
<td>4</td>
</tr>
<tr>
<td>Probationary</td>
<td>11.1</td>
<td>2.6</td>
<td>10</td>
</tr>
</tbody>
</table>

In the Perceptual Personalization category it was necessary to eliminate the contribution of one subject in the honor group due to the extremely high number of Perceptual Personalizations present in his protocol. This subject’s stories were eliminated from consideration in all three categories of this analysis. This one subject produced a greater number of Personalizations than the total of the other twenty-four subjects combined. This excessively large number of Personalizations (55) strongly suggested that this subject was somewhat emotionally disturbed. The Perceptual Personalization category, according to Daze, is the most sensitive of the three categories in its ability to identify disturbed subjects.

In the Perceptual Personalization category the mean for the honor group was .7 with a standard deviation of 1.0 and a range of 3. For the probationary groups the mean was 2.9 with a standard deviation of 3.4 and a range of 10.

Upon inspection it was apparent that no significant difference existed between the two groups in either the Perceptual Organization or Perceptual Range categories but the difference between the groups in Perceptual Personalization
appeared to warrant further analysis and was treated statistically. The data were compared for differences between means using the formulas \( s_D = \sqrt{s_1^2 + s_2^2} \) and \( t = \frac{D}{s_D} \) according to Lacey.\(^1\)

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honor</td>
<td>.7</td>
<td>1.0</td>
<td>3</td>
</tr>
<tr>
<td>Probationary</td>
<td>2.9</td>
<td>3.4</td>
<td>10</td>
</tr>
</tbody>
</table>

Difference between means = 2.1

\( t = 1.9 \)

\( P \) greater than .05 but less than .10

This treatment yielded a "t" of 1.9 which is between the .05 and .10 levels of confidence, i.e., that a ratio as high as the one observed could occur by chance more than 5 per cent but less than 10 per cent of the time.

In view of the relatively high degree of probability of a discrepancy as great as the one observed, this scoring category was considered a questionable criterion for distinguishing between the two groups. Perhaps the most significant finding of this scoring method was to indicate that these two groups of students are much more similar than they are dissimilar insofar as their adjustment is the differentiating factor.

II. THE STORY ANALYSIS METHOD

The Story Analysis method analyzes the content of the stories and draws inferences as to the personality of the subject from this content.

The goal of both methods of analysis was to develop criteria which could be used to discriminate between the successful and unsuccessful students. It was reasoned that a difference might exist between the two groups which would not be statistically significant (P > .05) but could be a valuable clue in discriminating in a blind analysis. It was further reasoned that if a large number of these relatively insignificant clues was gathered together, the combined weight would be considerably greater. In cases where there appeared to be an appreciable difference but where the numbers falling into each category were quite small the data were not analyzed statistically but the differences were noted for use in an analysis to determine the validity of the criteria developed.

The entire protocol of one subject was rejected because none of the responses was considered scoreable. Responses were rejected if they lacked more than one of the parts that were considered essential, viz. Major Dominant Motivational State, Frustration, or Resolution. Responses were also rejected in instances where the subject merely described the picture, or indulged in a symbolic interpre-
tation instead of telling a story. In a few cases a card was completely rejected by the subject and no response was forthcoming.

The Story Analysis method was used with a total of 359 stories from both groups. Of the 359 usable stories, 207 were told by the honor group and 152 were told by the probationary group.

A large number of comparisons was made by the Story Analysis method. The responses of the two groups were compared first by inspection and if an appreciable difference was apparent the criterion was subjected to statistical analysis by the use of the Chi square technique for enumeration data.²

Comparison of Major Dominant Motivational States

The Major Dominant Motivational States were first arranged in numerical order. Autonomy was used most frequently as a Major Dominant Motivational State by both groups. In the honor group Anxiety—Physical was second in rank with Achievement third, Intranurturance fourth and Sex fifth. Inspection indicated that there was a high positive correlation between the two groups and that there was essentially no difference between the two groups in the first five ranking Major Dominant Motivational States which

²Ibid., pp. 132-143.
comprise 55.6 per cent of the total number used by the honor group and 58.4 per cent of those used by the probationary group. These data are presented in Table II. In view of the relatively small number of stories using each of the remaining Major Dominant Motivational States, no further intra-category comparison was attempted.

The stories involving two of the three types of Aggression appeared to indicate further analysis but due to the relatively small number of cases in some of the cells, these Motivational States were not analyzed by Chi square. The number of stories told by the honor group had a higher ratio of Aggression--Emotional and Verbal to Aggression--Physical Asocial than did the probationary group. The number of Aggression--Emotional and Verbal was nine for the honor group and three for the probationary group while the number of Aggression--Physical Asocial for the honor group was five and for the probationary group it was eleven. Despite their relatively small numbers the ratios appeared to be important.

In the Cognizance Motivational State the ratio between honor and probationary groups was nine to two while the ratio of total stories used was approximately four to three. In view of these differences this Motivational State was considered an important one.
<table>
<thead>
<tr>
<th>Motivational State</th>
<th>Honor Group</th>
<th>Probability</th>
<th></th>
<th>Motivational State</th>
<th>Honor Group</th>
<th>Probability</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>26</td>
<td>13.4</td>
<td></td>
<td>Autonomy</td>
<td>26</td>
<td>18.3</td>
<td></td>
</tr>
<tr>
<td>Anxiety--Physical</td>
<td>23</td>
<td>11.3</td>
<td></td>
<td>Achievement</td>
<td>19</td>
<td>13.4</td>
<td></td>
</tr>
<tr>
<td>Achievement</td>
<td>21</td>
<td>10.3</td>
<td></td>
<td>Anxiety--Physical</td>
<td>14</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>Intranurturance</td>
<td>21</td>
<td>10.3</td>
<td></td>
<td>Intranurturance</td>
<td>13</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>17</td>
<td>03.8</td>
<td></td>
<td>Sex</td>
<td>11</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Dominance</td>
<td>10</td>
<td>05.2</td>
<td></td>
<td>Aggression--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggression--Emotional</td>
<td></td>
<td></td>
<td></td>
<td>Physical--Asocial</td>
<td>11</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Aggression--Emotional</td>
<td></td>
<td></td>
<td></td>
<td>Domains</td>
<td>7</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Cognizance</td>
<td>9</td>
<td>04.6</td>
<td></td>
<td>Nurturance</td>
<td>7</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td>9</td>
<td>04.6</td>
<td></td>
<td>Succorance</td>
<td>6</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Succorance</td>
<td>8</td>
<td>04.1</td>
<td></td>
<td>Intraregression</td>
<td>6</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Nurturance</td>
<td>7</td>
<td>03.0</td>
<td></td>
<td>Anxiety--Social</td>
<td>6</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Passivity</td>
<td>6</td>
<td>03.1</td>
<td></td>
<td>Affiliation</td>
<td>4</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Aggression--</td>
<td></td>
<td></td>
<td></td>
<td>Aggression--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical--Asocial</td>
<td>5</td>
<td>02.6</td>
<td></td>
<td>Emotional--Verbal</td>
<td>3</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Deference</td>
<td>4</td>
<td>02.1</td>
<td></td>
<td>Excitance</td>
<td>3</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Abasement</td>
<td>3</td>
<td>01.5</td>
<td></td>
<td>Cognizance</td>
<td>2</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Intraregression</td>
<td>3</td>
<td>01.5</td>
<td></td>
<td>Acquisition</td>
<td>1</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Sustenance</td>
<td>3</td>
<td>01.5</td>
<td></td>
<td>Creation</td>
<td>1</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Acquisition</td>
<td>2</td>
<td>01.0</td>
<td></td>
<td>Deferece</td>
<td>1</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Anxiety--Social</td>
<td>2</td>
<td>01.0</td>
<td></td>
<td>Aggression--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creation</td>
<td>2</td>
<td>01.0</td>
<td></td>
<td>Physical--Social</td>
<td>1</td>
<td>0.7</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE II

**MAJOR DOMINANT MOTIVATIONAL STATES OF STORIES TOLD BY THE HONOR AND PROBATIONARY GROUPS**

<table>
<thead>
<tr>
<th>Motivational State</th>
<th>Number</th>
<th>Per Cent</th>
<th>Motivational State</th>
<th>Number</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Continued)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggression--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Social</td>
<td>2</td>
<td>01.0</td>
<td>Passivity</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Aggression--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Destruction</td>
<td>1</td>
<td>0.5</td>
<td>Sustenance</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Excitance</td>
<td>1</td>
<td>0.5</td>
<td>Aggression--</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Exposition</td>
<td>0</td>
<td>0.0</td>
<td>Destruction</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Totals</td>
<td>194</td>
<td>99.7</td>
<td></td>
<td>142</td>
<td>99.8</td>
</tr>
</tbody>
</table>
Analysis of Barriers

The Barriers were ranked numerically by type for each group. It was found that the three first ranking types of Barriers, An individual, A state of the Central Figure, Acts of Nature, were the same for both groups. These three types of Barriers comprised 72.9 per cent of the total number in the honor group and 74.6 per cent of the total number used by the probationary group. Further inspection indicated that the ratios among these Barriers was highly similar and that no significant difference existed between the groups with respect to the number of the various types of Barriers. Data pertaining to Barriers are found in Table III.

Analysis of Conflict Stories

Those stories in which the Frustration consists of a conflict between two irreconcilable Motivational States were examined. The honor group told a total of nine stories in which the Frustration was a conflict and the probationary group told seven such stories. Inspection showed that the ratio of the honor group to the probationary group was approximately the same in this type of story as in the total number of stories told. Because of the relatively small numbers of stories in this category there was no opportunity for statistical analysis.

Only one type of conflict occurred in more than one
### TABLE III

**Numerical Rank of Barriers Used by Honor and Probationary Groups**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Honor Group</th>
<th>Probationary Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per cent</td>
</tr>
<tr>
<td>An Individual</td>
<td>53</td>
<td>30.2</td>
</tr>
<tr>
<td>A State of the Central Figure</td>
<td>48</td>
<td>25.0</td>
</tr>
<tr>
<td>Acts of Nature</td>
<td>34</td>
<td>17.7</td>
</tr>
<tr>
<td>Group of People Unorganized</td>
<td>16</td>
<td>8.3</td>
</tr>
<tr>
<td>Physical Object</td>
<td>15</td>
<td>7.8</td>
</tr>
<tr>
<td>Animal</td>
<td>6</td>
<td>3.1</td>
</tr>
<tr>
<td>A Trait of the Central Figure</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>Customs, Laws, and Mores</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Time</td>
<td>3</td>
<td>1.6</td>
</tr>
</tbody>
</table>
### TABLE III

**Numerical Rank of Barriers Used by Honor and Probationary Groups**

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Honor Group</th>
<th></th>
<th></th>
<th></th>
<th>Probationary Group</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per cent</td>
<td></td>
<td></td>
<td>Number</td>
<td></td>
<td>Per cent</td>
<td></td>
</tr>
<tr>
<td>(Continued)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Space and Place</td>
<td>2</td>
<td>1.0</td>
<td></td>
<td></td>
<td>1</td>
<td>.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group of People</td>
<td>1</td>
<td>.5</td>
<td></td>
<td></td>
<td>Customs, Laws, and</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Organized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Mores</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>192</td>
<td>99.9</td>
<td></td>
<td></td>
<td>142</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
story. Three subjects in the honor group told stories with a conflict between Autonomy and Deference. This was seen as a possibility from which an inference might be drawn but due to the limited number of such stories it was not deemed advisable to emphasize this.

Resolutions—Reactions to Frustration

The Resolution or Reactions to the Frustrations in the stories told by both groups seemed to indicate some difference between the two groups. On inspection there appeared to be some difference between the numerical ranking of the Resolutions and also in the ratio between certain types of Resolution. The discrepancy appeared to be the greatest between resolution by taking direct action and resolution by accepting external resolution. The honor group resolved Frustration by Direct Action taken alone in seventy-eight instances and in thirty-eight by accepting external resolution while in the probationary group this ratio was sixty-six to twenty. When this was subjected to analysis by Chi square the data yielded a Chi square of 2.18 which falls between the .10 and .20 levels of confidence. (Table IV)

Motivational State Held Constant

The responses of the two groups were compared on the basis of the five most numerous Dominant Motivational States, holding the Motivational State constant and studying the Barriers and Resolutions.
## TABLE IV

RESOLUTIONS USED BY HONOR AND PROBATIONARY GROUPS

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Honor Group</th>
<th></th>
<th></th>
<th>Probability Group</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Per Cent</td>
<td></td>
<td>Number</td>
<td></td>
<td>Per Cent</td>
</tr>
<tr>
<td>Takes Direct Action Alone</td>
<td>73</td>
<td>39.4</td>
<td></td>
<td>66</td>
<td>46.5</td>
<td></td>
</tr>
<tr>
<td>Accepts External Resolution</td>
<td>38</td>
<td>19.2</td>
<td></td>
<td>26</td>
<td>18.3</td>
<td></td>
</tr>
<tr>
<td>Non-effective Action</td>
<td>37</td>
<td>18.7</td>
<td></td>
<td>20</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>Takes Direct Action with Assistance</td>
<td>17</td>
<td>8.5</td>
<td></td>
<td>12</td>
<td>8.5</td>
<td></td>
</tr>
<tr>
<td>Leaves the Situation</td>
<td>15</td>
<td>7.5</td>
<td></td>
<td>7</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Changes Motivational State and Attains New Goal</td>
<td>10</td>
<td>5.1</td>
<td></td>
<td>5</td>
<td>4.2</td>
<td></td>
</tr>
<tr>
<td>Changes Instrumental Acts</td>
<td>3</td>
<td>1.5</td>
<td></td>
<td>5</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>198</td>
<td>99.9</td>
<td></td>
<td>142</td>
<td>99.3</td>
<td></td>
</tr>
</tbody>
</table>
Autonomy. When the stories with a Motivational State of Autonomy were inspected, it was found that both groups used an individual as the Barrier in the bulk of the stories. This occurred 56 per cent of the time in the honor group and 69 per cent of the time in the probationary group. In stories using Autonomy for the Dominant Motivational State, the Resolution was Direct Action taken alone in 40 per cent of the cases for the honor group and in 67 per cent of the cases for the probationary group. These data are presented in Table V. When the two groups were compared on this basis--comparing the ratio of Resolution by Direct Action taken alone to the other types of Resolutions and the ratios subjected to analysis by Chi square, the data yielded a Chi square of 2.84, which is at the .01 level of confidence.

Anxiety. For the purpose of the next comparison the two Major Dominant Motivational States of Anxiety--Physical and Anxiety--Social were combined. This was done partly because of the similarity between the two Motivational States and partly because of the small number falling into the Anxiety--Social category. The honor group told twenty-five stories with Anxiety as a Major Dominant Motivational State and the probationary group told twenty. The two groups were very similar in this category. The numbers falling into each of the several categories of Barriers were generally quite small and no attempt was made to do further analysis.
<table>
<thead>
<tr>
<th>Honor Group (N = 26)</th>
<th>Probability Group (N = 26)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barrier</strong></td>
<td></td>
</tr>
<tr>
<td>An Individual</td>
<td>17</td>
</tr>
<tr>
<td>Group of People</td>
<td></td>
</tr>
<tr>
<td>Unorganized</td>
<td>5</td>
</tr>
<tr>
<td>A Trait of the Central Figure</td>
<td>1</td>
</tr>
<tr>
<td>Group of People</td>
<td></td>
</tr>
<tr>
<td>Organized</td>
<td>1</td>
</tr>
<tr>
<td>Customs, Laws, and Mores</td>
<td>1</td>
</tr>
<tr>
<td>Physical Object</td>
<td>1</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td></td>
</tr>
<tr>
<td>Takes Direct Action</td>
<td>12</td>
</tr>
<tr>
<td>Accepts External Resolution</td>
<td>7</td>
</tr>
<tr>
<td>Non-effective Action</td>
<td></td>
</tr>
<tr>
<td>Changes Motivational State</td>
<td>1</td>
</tr>
</tbody>
</table>
There appeared to be two interesting differences between the two groups. The honor group used Acts of Nature in eight stories or in 32 per cent of the stories while the probationary group used this Barrier in two cases or in 10 per cent of the time. In the area of Resolution, the honor group used Direct Action taken alone in nine stories or in 36 per cent of the cases and the probationary group used this same means of resolution twice or in 10 per cent of the cases. This appeared to be important because in the total productions, the probationary group used Direct Action taken alone as a means of resolution in a proportionately greater number of responses than did the honor group. These data are presented in Table VI.

Achievement. When the Major Dominant Motivational State was Achievement the honor group used a state of the Central Figure and a Physical Object each in seven or 33.3 per cent of their stories while the probationary group used a Physical Object in six cases and a state of the Central Figure in four cases, or in 35.3 per cent and in 23.5 per cent of the cases respectively. The remainder of the stories were distributed among several Barriers. The honor group used Direct Action taken alone as a form of resolution in seventeen or 80.9 per cent of the cases. The probationary group used this Major Dominant Motivational State in thirteen or 76.4 per cent of the cases. Inspection of these data,
| Table VI |
|------------------|------------------|
| **Barriers and Resolutions Used in Stories with Major Dominant Motivational State of Anxiety** |

<table>
<thead>
<tr>
<th>Honor Group</th>
<th>N = 25</th>
<th>Probationary Group</th>
<th>N = 20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barrier</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A State of the Central Figure</td>
<td>8</td>
<td>A State of the Central Figure</td>
<td>9</td>
</tr>
<tr>
<td>Acts of Nature</td>
<td>8</td>
<td>An Individual</td>
<td>3</td>
</tr>
<tr>
<td>Animal</td>
<td>5</td>
<td>Animal</td>
<td>3</td>
</tr>
<tr>
<td>An Individual</td>
<td>2</td>
<td>Group of People Organized</td>
<td>2</td>
</tr>
<tr>
<td>Physical Objects</td>
<td>2</td>
<td>Acts of Nature</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group of People Unorganized</td>
<td>1</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Action</td>
<td>10</td>
<td>Non-Effective Action</td>
<td>8</td>
</tr>
<tr>
<td>Leaves the Situation</td>
<td>6</td>
<td>External Resolution</td>
<td>5</td>
</tr>
<tr>
<td>External Resolution</td>
<td>6</td>
<td>Direct Action</td>
<td>4</td>
</tr>
<tr>
<td>Non-effective Action</td>
<td>1</td>
<td>Leaves the Situation</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Changes Instrumental Acts</td>
<td>1</td>
</tr>
</tbody>
</table>
which are presented in Table VII, showed that there was no appreciable difference between the two groups with respect to the stories they told using a Major Dominant Motivational State of Achievement.

Intranurturance. The honor group told twenty-one stories with Intranurturance as a Major Dominant Motivational State and the probationary group told thirteen. This ratio is considerably different from the ratio of total stories but the data did not yield a significant Chi square when analyzed. The barriers were very evenly distributed among the several possibilities and the relatively small number in each category made any valid contrast virtually impossible. The same was true of the methods of resolution chosen by subjects of the two groups. (Table VIII).

Sex. The honor group told seventeen stories with Sex as a Major Dominant Motivational State as compared with eleven for the probationary group. An individual was the Barrier in ten or 58.7 per cent of the stories told by the honor group and in six or 54.5 per cent of the stories told by the probationary group. The Resolutions were well distributed among seven possible types of Resolutions and consequently statistical analysis was not practicable because of the small numbers. One rather outstanding difference was apparent in the Resolutions. The honor group used Acceptance of External Resolution in six stories while the pro-
TABLE VII
BARRIERS AND RESOLUTIONS USED IN STORIES WITH MAJOR DOMINANT MOTIVATIONAL STATE OF ACHIEVEMENT

<table>
<thead>
<tr>
<th>Honor Group</th>
<th>N = 21</th>
<th>Probability Group</th>
<th>N = 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A State of the Central Figure</td>
<td>7</td>
<td>Physical Object</td>
<td>6</td>
</tr>
<tr>
<td>Physical Object</td>
<td>7</td>
<td>A State of the Central Figure</td>
<td>4</td>
</tr>
<tr>
<td>An Individual</td>
<td>1</td>
<td>Acts of Nature</td>
<td>2</td>
</tr>
<tr>
<td>A Group of People Unorganized</td>
<td>1</td>
<td>An Individual</td>
<td>2</td>
</tr>
<tr>
<td>Space and Place</td>
<td>1</td>
<td>A Group of People Organized</td>
<td>1</td>
</tr>
<tr>
<td>Not stated</td>
<td>4</td>
<td>Space and Place</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Animal</td>
<td>1</td>
</tr>
<tr>
<td>Resolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Action Alone</td>
<td>17</td>
<td>Direct Action Alone</td>
<td>13</td>
</tr>
<tr>
<td>Direct Action with Assistance</td>
<td>2</td>
<td>Changes Instrumental Acts</td>
<td>2</td>
</tr>
<tr>
<td>Changes Instrumental Acts</td>
<td>1</td>
<td>Non-effective Action</td>
<td>1</td>
</tr>
<tr>
<td>Accepts External Resolution</td>
<td>1</td>
<td>Direct Action with Assistance</td>
<td>1</td>
</tr>
</tbody>
</table>
### Table VIII

**Barriers and Resolutions Used in Stories with Major Dominant Motivational State of Intranunturance**

<table>
<thead>
<tr>
<th>Honor Group</th>
<th>N = 21</th>
<th>Probability Group</th>
<th>N=13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Barrier</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A State of the</td>
<td></td>
<td>A State of the</td>
<td></td>
</tr>
<tr>
<td>Central Figure</td>
<td>6</td>
<td>Central Figure</td>
<td>5</td>
</tr>
<tr>
<td>A Group of People</td>
<td></td>
<td>An Individual</td>
<td>1</td>
</tr>
<tr>
<td>Unorganized</td>
<td>2</td>
<td>A Group of People</td>
<td>1</td>
</tr>
<tr>
<td>Physical Object</td>
<td>1</td>
<td>Unorganized</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Barrier</td>
<td>1</td>
</tr>
<tr>
<td><strong>Resolution</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepts External</td>
<td></td>
<td>Non-effective</td>
<td>5</td>
</tr>
<tr>
<td>Resolution</td>
<td>7</td>
<td>Action</td>
<td></td>
</tr>
<tr>
<td>Non-effective Action</td>
<td>5</td>
<td>Changes Motivational</td>
<td></td>
</tr>
<tr>
<td>Direct Action</td>
<td>5</td>
<td>States</td>
<td>3</td>
</tr>
<tr>
<td>Changes Instrumental</td>
<td></td>
<td>Accepts External</td>
<td></td>
</tr>
<tr>
<td>Acts</td>
<td>2</td>
<td>Resolution</td>
<td>2</td>
</tr>
<tr>
<td>Changes Motivational</td>
<td></td>
<td>Direct Action</td>
<td>2</td>
</tr>
<tr>
<td>States</td>
<td>2</td>
<td>Leaves the Situation</td>
<td>1</td>
</tr>
</tbody>
</table>
bationary group used this form of resolution in only one story. (Table IX).

Use of Facilitators and Inhibitors

The honor group used Facilitators in forty-nine or 23.6 per cent of their stories and the probationary group used Facilitators in twenty-seven or 17.7 per cent of their stories. The proportion of Facilitators was analyzed by the Chi square method and yielded a Chi square of 1.63 which falls between the .10 and .20 levels of confidence.

Inhibitors were used in twenty-five or 12.07 per cent of the cases by the honor group and in twenty-four or 15.7 per cent of the stories. When the numbers of the Inhibitors were analyzed by Chi square they yielded a Chi square of 1.02 which falls approximately at .30 level. None of the Chi squares was statistically significant.

The ratio of Facilitators to Inhibitors used by each group was compared by use of Chi square. This analysis yielded a Chi square of 2.95 which is significant between the .05 and .10 levels of confidence. The same group of data yielded Chi squares which were significant at three levels. In view of the purpose to which the criteria developed in the analysis of the experimental groups would be put it remained to select the method of comparison which would be most practical in the analysis of a single set of responses. The number of responses made by one subject is necessarily
<table>
<thead>
<tr>
<th>Barrier</th>
<th>Honor Group N = 17</th>
<th>Probationary Group N = 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Individual</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Acts of Nature</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>A State of the Central Figure</td>
<td>1</td>
<td>Acts of Nature</td>
</tr>
<tr>
<td>Customs, Laws and Mores</td>
<td>1</td>
<td>Time</td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Space and Place</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>A Trait of the Central Figure</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resolution</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepts External Resolution</td>
<td>6</td>
<td>Non-effective Action</td>
</tr>
<tr>
<td>Non-effective Action</td>
<td>5</td>
<td>Takes Direct Action</td>
</tr>
<tr>
<td>Takes Direct Action</td>
<td>4</td>
<td>Leaves the Situation</td>
</tr>
<tr>
<td>Leaves the Situation</td>
<td>2</td>
<td>Changes Instrumental Acts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepts External Resolution</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Changes Motivational States</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
small--twenty or less--and consequently criteria for determining whether the subject is an honor student or one on probation will need to be those which make the most clear cut distinction.

Consequences

The consequences of the mode of resolution presented a pronounced difference between the two groups. In the category of Personal Consequences there are possible four kinds of consequences stated as feelings of the Central Figure. These were Satisfaction, Anxiety, Neutral Feelings and Ambivalence. In a number of cases the subject did not state how the Central Figure felt and although feelings were frequently implied, unless a feeling was specifically stated, the response was placed into a separate category thus creating a fifth category, "Unstated."

In the honor group the Personal Consequences were distributed as follows:

<table>
<thead>
<tr>
<th>Honor Group</th>
<th></th>
<th>Probability Group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>98</td>
<td>Satisfaction</td>
<td>46</td>
</tr>
<tr>
<td>Anxiety</td>
<td>23</td>
<td>Anxiety</td>
<td>34</td>
</tr>
<tr>
<td>Neutral Feelings</td>
<td>18</td>
<td>Neutral Feelings</td>
<td>12</td>
</tr>
<tr>
<td>Ambivalence</td>
<td>3</td>
<td>Ambivalence</td>
<td>4</td>
</tr>
<tr>
<td>Unstated</td>
<td>65</td>
<td>Unstated</td>
<td>56</td>
</tr>
</tbody>
</table>

The ratios of Satisfaction to Anxiety, Satisfaction to Neutral Feelings and Satisfaction to Unstated were analyzed.
as were the Anxiety to Neutral Feelings and Anxiety to Unstated.

The ratio of Satisfaction to Anxiety yielded a Chi square of 13.06 which is significant far beyond the .01 level of confidence.

<table>
<thead>
<tr>
<th>Honor Group</th>
<th>Probationary Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>98:23</td>
<td>46:34</td>
</tr>
</tbody>
</table>

Chi square = 13.06

P < .01

The ratio of Satisfaction to all others yielded a Chi square of 16.38 which is also significant beyond .01.

<table>
<thead>
<tr>
<th>Honor Group</th>
<th>Probationary Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>98:109</td>
<td>46:106</td>
</tr>
</tbody>
</table>

Chi square = 16.38

P < .01

In the area of Social Consequences there were four possibilities. Either the outcome was socially acceptable, it was unacceptable, it was questionable or no consequence was stated. Of the stories told by the honor group, 152 had outcomes that were socially acceptable, 17 were socially unacceptable, 23 fell into the questionable category and 15 did not state a consequence. The probationary group had 91 stories with socially acceptable consequences, 24 with unacceptable consequences, 23 that were questionable and 14 that did not state a Social Consequence.
The ratio between stories with acceptable and with unacceptable social consequences yielded a Chi square of 4.52, which is significant beyond the .05 level of confidence.

Agreement of Central Figure with Sex of Subject

Each story was coded with regard to the agreement of the sex of the Central Figure with the sex of the subject. Nine stories were omitted from this analysis because of the neutral nature of the Central Figure. In these stories the Central Figure was usually an animal. Of the remaining stories the honor group told stories in which the Central Figure agreed with the sex of the subject in 140 cases and disagreed in 62 cases. The probationary group told stories in which the sex of the Central Figure agreed with the sex of the subject in 121 cases and disagreed in 27 cases.

The ratio of agreement to disagreement was analyzed by Chi square, yielding a Chi square of 6.93, significant beyond the .01 level of confidence.

Responses to Specific Pictures

The stories told to cards which are common to both cases—1, 4, 5, 10, 11, 13, 14, 15, 16, 19, and 20—were selected for further analysis. The responses to these cards made by each subject in both groups were recorded and the number of each type of determinant was studied. The intent in this step of the total analysis was to establish, if possible, a characteristic response to each of these cards.
for the honor and the probationary groups. Because of the small number of cases the comparisons did not lend themselves to statistical analysis but certain differences were noted.

On Card 1, no appreciable differences were noted, with the exception that the honor group used an individual as a Barrier more frequently than did the probationary group who used a Physical Object more frequently. The Dominant Motivational State and Resolutions were distributed with close similarity between the two groups.

The honor group distributed Major Dominant Motivational States among five states, avoided stating a Barrier in five of twelve stories and made use of Direct Action in over half of the stories for Resolutions with Satisfaction for the Central Figure in six of twelve stories told to Card 2. Social Consequences were acceptable in ten of twelve stories. Five members of the probationary group made unscorable responses to this card. Of the six remaining stories, four used Autonomy as a Major Dominant Motivational State. The Barriers and Resolutions were rather evenly distributed as were the Consequences.

On Card 4 the honor group told a greater proportion of stories using Sex for a Major Motivational State as compared to a larger proportion of Autonomy used by the probationary group. In the Barrier category, and in Resolution and Consequences, both groups were very similar.
The responses to Card 5 were so varied and so well distributed that no difference was noticeable with the exception of Personal Consequences in which category the honor group had a large proportion of Satisfaction and the probationary group did not state Consequences. Eleven of the honor group rejected Card 10 as compared to two rejections in the probationary group. The two groups were very similar in their responses to this card in all other respects.

On Card 11, Anxiety was the most frequently used Major Dominant Motivational State in both groups, but the honor group used Direct Action in a much larger number of stories for resolution. In the area of Personal Consequences the action of the Central Figure brought satisfaction in the stories told by the honor group in over two-thirds of the cases, Card 13 provided such a wide variety in all the determining categories that no difference was observable.

The responses of the groups to Card 14 pointed to similarity rather than difference. In none of the categories was there an appreciable difference. Card 15 was rejected by five of the honor group and by eleven of the probationary group. Those responding used a wide variety of Dominant Motivational States and the Barriers used were similar. The honor group told stories in which the Central Figure indulged in non-effective action in over 50 per cent of their stories with a Personal Consequence of Anxiety.
Card 16 (blank) was rejected by ten, or 71.4 per cent of the honor group and by five or 45.4 per cent of the probationary group. Because of the limited number of responses, it was virtually impossible to draw any inference. The same was true of Card 19. It should be stated that the responses to Card 19 were of a nature which would be valuable in a clinical setting but did not lend themselves to the analysis at hand. Much of the material was of a symbolic nature.

The responses to Card 20 made by both groups utilized a number of Motivational States, none of which suggest a difference between groups. The honor group used a state of the Central Figure as a Barrier in fewer stories than did the probationary group. Resolutions were approximately equally distributed but in the Personal Consequence category there was some difference. The honor group indicated satisfaction in a proportionately larger number of cases than did the probationary group.

From these data were developed the criteria to be used in the analysis of other protocols. These will be discussed in the next chapter.

One of the scoring categories on the Objective Scoring method showed some difference between the responses of the two groups. The Story Analysis method yielded four differences which were significant at the .05 level of con-
fidence and nine which did not meet this level of significance but which appeared to have some differentiating value.
CHAPTER V

INTERPRETATION OF THE DATA AND THE DEVELOPMENT
OF DIFFERENTIATING CRITERIA

This chapter is concerned with interpretation of the
data presented in Chapter IV and the description of the
criteria selected from the data. Only those criteria which
appeared to be usable as discriminants are described.

The Objective Scoring method did not yield any
differences significant at the .05 level and only one of the
categories, Perceptual Personalization, appeared to suggest
some difference between the two groups. Since it was not
deemed advisable to use this one scoring category in
connection with the more intensive Story Analysis method,
the criteria described in this chapter are developed from
information provided by the Story Analysis method.¹

Subsequent to the analysis and recording of the
comparisons it became apparent that the data fell naturally
into two divisions—those differences that were significant
at the .05 level and those that yielded a Chi square which
was not significant at this level but which approached the
desired level of significance. Included in the second
group are those that were numerically unsuited to statistical

¹Bijou, loc.cit.
analysis but which, upon inspection, appeared to point to a valid difference. These two groups of data are treated in separate sections of the chapter.

1. DIFFERENCES WHICH ARE SIGNIFICANT AT THE .05 LEVEL

The difference between the groups as shown by the Personal Consequence of the Resolution employed by the Central Figure was the most significant difference. The ratio of Satisfaction to Anxiety yielded a Chi square of 13.22 which is significant beyond .01, i.e., that a difference as great as this would occur by chance less than one time in one hundred.

The inference drawn from this information is that the subjects of the honor group were satisfied with their choice of action once a course is decided upon. By this inference, a member of the probationary group is more frequently anxious about a course of action and less frequently satisfied. In order to organize this information into a criterion to use for distinguishing between honor and probationary students, reference was made to the ratio between the two categories in the original data and a generalization formulated from the information available. In this case the generalization was developed as follows: The ratio between Satisfaction and Anxiety for the honor group was approximately 4:1. The ratio for the probationary
group was 1:1. This information necessitated a subjective judgment with regard to those that fell near the center of the spread. It was decided arbitrarily to use the mid-point of the spread as the division line and designate those that fell at or above this point as honor students and those that fell below as probationary students.

When the ratio between the personal Consequence of Satisfaction to all other Consequences was subjected to analysis by Chi square, the result was significant at .01. While this criterion is similar to the previous one, it was reasoned that in the analysis of a single protocol, it would be advisable to make use of all the Consequences available in determining a ratio. The inference drawn in this case would be the same as in the case of the Satisfaction to Anxiety comparison. The honor group had a ratio of approximately 1:1 between a Consequence of Satisfaction and all others while in the probationary group the ratio was approximately 1:2. It was decided to use a ratio of 1:1.5 or above as indicative of probation and a ratio of less that 1:1.5 as indicative of honor status.

From the information provided by the Social Consequences it might be inferred that the subjects in the honor group are more concerned with the social acceptability of their actions.

The ratio between socially acceptable and socially
unacceptable consequences yielded a significant Chi square. As above in the personal consequences category, the subjects in the honor group told stories with a higher ratio of acceptable to unacceptable consequences than did the probationary group.

Stated in terms of a discriminatory criterion, if a subject's ratio of socially acceptable consequences to those that are unacceptable is 5:5:1 or above, this subject would be considered an honor student on the basis of this criterion. If the ratio is below 5:5:1 he would be considered a probationary student. In this case, as in the above, the mid-point of the spread is considered the dividing point for honor or probationary classification. The honor group ratio was 7:1 and the probationary group ratio was 4:1.

In the case of the agreement of the sex of the Central Figure with the sex of the subject, the honor group had a lower ratio of agreement to disagreement than did the probationary students. In terms of a criterion, if a subject's ratio of agreements to disagreements falls below 3:1 the subject would be considered an honor student. If his ratio is 3:1 or above he would be considered a probationary student.
II. DIFFERENCES WHICH ARE STATISTICALLY
NOT SIGNIFICANT AT THE .05 LEVEL

A number of differences were apparent in the exam-
ination of the data but only the four discussed above were
significant at the .05 level. It was reasoned that these
other differences were valid and could be used in developing
criteria on which to base an evaluation of a student. Among
these differences are included those which were treated
statistically and in which cases the probability of a chance
occurrence exceeded .05, and also those that were not
treated statistically but which were considered appreciable
by the experimenter. It was reasoned that some valid in-
ferences could be drawn from these data.

The comparison of the modes of resolution presented
one such difference. The two modes of resolution studied
were resolution by taking Direct Action and resolution by
accepting External Resolution. The ratio of Direct Action
to External Resolution as used by the honor group was 78:32
while the ratio as used by the probationary group was 66:24.
Treated statistically by the use of Chi square this yielded
a Chi square which fell between the .10 and .20 levels. A
ratio of 1:2.5 or higher was considered indicative of pro-
bationary status and a ratio of below 1:2.5 was considered
indicative of honor status.

From this information it could be inferred that the
students who comprise the honor group are more readily able
to accept direction and more freely submit to external pressures. Conversely the students in the probationary group are more likely to meet frustration with direct action.

The use of Cognizance as a Dominant Motivational State appeared to point to a difference worthy of further study. The ratio between groups in this category differed considerably from the ratio between groups in total stories told. There were relatively few stories which had a Dominant Motivational State of Cognizance and the preponderance of these were told by the honor group. On the basis of this information, if a subject told a story using Cognizance as a Dominant Motivational State the probability was greatly in favor of his being an honor student. Consequently the presence of a story using Cognizance was considered an indicator of honor group status.

The Motivational State of Cognizance is defined as follows: "To explore (moving and touching), To ask questions, To satisfy curiosity, To look, listen, and inspect, To read and seek knowledge." From the presence of one or more stories with this Motivational State present it could be inferred that the subject is interested in acquiring knowledge. Thus it could be generalized that the honor group was

\[\text{2Sidney W. Bijou, "Story Analysis," (Unpublished material). Permission to quote granted by the author.}\]
the more intellectually curious.

The Motivational State of Anxiety provided a further suggestion for a differentiating criterion. The honor group used Acts of Nature as a Barrier in a greater proportion of their stories than did the probationary group. The ratio of stories using Anxiety to Acts of Nature as a Barrier in the honor group was approximately 3:1 and in the probationary group this ratio was 10:1. A ratio of 6.5:1 was considered a dividing point with subjects falling at or above this point being considered probationary and those below, honor.

From the comparison of numbers of stories using Facilitators and Inhibitors, it was decided to use the ratio of Facilitators to Inhibitors as the criterion because this comparison yielded the highest Chi square. The ratio of Facilitators to Inhibitors was nearly 2:1 for the honor group and approximately 1:1 for the probationary group. In this case subjects having a ratio of 1.5:1 or above were considered honor students and those falling below this ratio were considered probationary. The inference in this case is that the students in the honor group were more ready to accept assistance from outside sources than were those in the probationary group.

In the attempt to analyze the responses to cards which were common to both sexes there were certain rather subtle differences which were extremely difficult to identify
and which were not readily usable.

III. SUBJECTIVE IMPRESSIONS

In addition to the differences listed above certain differences between the two groups were apparent to the experimenter and would be of value in practical situations where counseling would be the natural outcome of such testing. Certain of these impressions were quite strong but at the same time virtually defied objectification.

The following are examples of some of these apparent differences:

The stories told by subjects in the honor group appear to be better organized and follow the instructions of the examiner more closely.

The probationary group told stories in which the Central Figure, by his own actions, seemed to defeat himself. This was apparent in the tone of the stories rather than in the content which could be analyzed.

In their expression and construction the subjects in the honor group were more precise while those in the probationary group used more slang and poorer English.

The honor group told longer stories than the probationary group.

IV. LIST OF CRITERIA

From a total of thirteen recognizable differences,
eight criteria were developed. These criteria are shown with appropriate ratios in Table I.

Certain differences which were observed were found to be statistically significant at the .05 level of confidence. Others were considered important although they did not meet this level of significance. From those which it was possible to objectify, a list of differentiating criteria was developed. In addition to these objective criteria a number of subjective impressions were obtained.
<table>
<thead>
<tr>
<th>Criterion</th>
<th>Honor Group Ratio</th>
<th>Probationary Group Ratio</th>
<th>Division Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction to Anxiety</td>
<td>4:1</td>
<td>1:1</td>
<td>2.5:1</td>
</tr>
<tr>
<td>Satisfaction: all others</td>
<td>1:1</td>
<td>1:2</td>
<td>1:1.5</td>
</tr>
<tr>
<td>Socially Acceptable: Unacceptable</td>
<td>7:1</td>
<td>4:1</td>
<td>5:5:1</td>
</tr>
<tr>
<td>Agreement of Sex</td>
<td>2:1</td>
<td>4:1</td>
<td>3:1</td>
</tr>
<tr>
<td>Direct Action: External Resolution</td>
<td>2:1</td>
<td>3:1</td>
<td>2:5:1</td>
</tr>
<tr>
<td>Cognizance as a Motivational State</td>
<td>Presence</td>
<td>Absence</td>
<td></td>
</tr>
<tr>
<td>Facilitators: Inhibitors</td>
<td>2:1</td>
<td>1:1</td>
<td>1.5:1</td>
</tr>
</tbody>
</table>
CHAPTER VI

APPLICATION OF THE CRITERIA

A part of the study is a test of the validity of the criteria developed. This chapter will describe the application of the criteria reported in Chapter V and will discuss the findings of this test of their validity.

Two groups of students were selected for the validation sample. One group was from Stockton College, a public junior college located in Stockton, California. The second was selected from the sophomore class at the College of the Pacific during 1956-57, the year following the start of the study. The list from Stockton College was supplied by the Dean of Students and the list from the College of the Pacific was provided by the Dean of Men.

The only requirement was that the students be high sophomores and that some of the students fall in each of the two classes—honor and probationary.

The Thematic Apperception Test was administered to each of eleven subjects, five from Stockton College and six from the College of the Pacific. Administration was done under standard conditions by an examiner, not connected with this study, who was thoroughly familiar with the test and its administration. The protocols were then labeled
with a coded identification to avoid the possibility of identification of the subject by name and were then analyzed using the Story Analysis method. Following this analysis the experimenter assigned each subject to one of the two groups—honor and probationary on the basis of the experimenter's subjective judgment.

When all of the eleven protocols had been analyzed for Setting, Central Figure, Frustration, Resolution and Consequences for each of the 220 stories and the results recorded on summary sheets, the data were evaluated on the basis of the eight criteria as presented in Table X.

The summary sheet for each subject was inspected and the ratios of the subject's responses compared to the ratios of the experimental groups in each of the areas for which criteria had been developed. Following the comparison, each of the eleven validation subjects was assigned to either the honor or the probationary group.

Of the eleven subjects, seven possessed characteristics which were more similar to the honor group and three possessed characteristics which were more similar to the probationary group. One possessed characteristics which were equally divided between the two groups. The placement of the ten subjects on the basis of this evaluation was then compared with the actual placement of the students. Nine of the ten evaluations which were made on the basis of the
experimentally developed criteria agreed with the actual placement of the student.

Upon inspection of the information provided by studying Table XI certain characteristics of the evaluative criteria became apparent.

The ratio between a Personal Consequence of Satisfaction and one of Anxiety discriminated successfully in eight of the eleven cases. As might have been expected, in view of the large Chi square it provided, this criterion was one of the most successful discriminants. Similarly the ratio between a Personal Consequence of Satisfaction and all other personal consequences discriminated successfully in eight of the eleven cases.

The ratio of Acceptable to Unacceptable Social Consequences also discriminated successfully in eight of the eleven cases.

On inspection the agreement between the sex of the subject and the sex of the Central Figure was found to discriminate successfully in eight of the eleven cases but closer examination revealed that this criterion was very closely related to the sex of the subject. All the male subjects of the validation sample were rated probationary by this criterion and all females were rated as honor students. This characteristic of the criterion will need further examination in order to determine the cause for
## TABLE XI

### RESULTS OF THE APPLICATION OF THE CRITERIA

<table>
<thead>
<tr>
<th>Subject</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>M</td>
<td>M</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>College</td>
<td>SC</td>
<td>SC</td>
<td>COP</td>
<td>SC</td>
<td>COP</td>
<td>SC</td>
<td>SC</td>
<td>COP</td>
<td>COP</td>
<td>COP</td>
<td>COP</td>
</tr>
<tr>
<td>Criterion 1</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>2</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
</tr>
<tr>
<td>3</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>H</td>
<td>P</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
</tr>
<tr>
<td>4</td>
<td>P</td>
<td>P</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>H</td>
<td>P</td>
<td>H</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>5</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>H</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>6</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>7</td>
<td>X</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>P</td>
<td>P</td>
</tr>
<tr>
<td>8</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>P</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>H</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>

### Subjective Evaluation

| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

### Placement by Criteria

| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

### Actual Placement

| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
this phenomenon. A more careful control of the composition of an experimental group would be desirable in an attempt to control the variables affecting this criterion.

The ratio between Direct Action and External Resolution discriminated correctly in seven of the eleven cases and consequently must be considered a less important criterion.

In the development of the criteria it was decided to use the presence of a story using Cognizance as a Dominant Motivational State as an indicator of honor group status and, conversely, the absence of a Cognizance story as an indicator of probationary status. In the application of the criteria it was found that the presence of a story with a Dominant Motivational State of Cognizance did indicate honor group status but the converse was not true and consequently this criterion discriminated successfully in only five of the eleven cases.

Of the eleven subjects, nine told stories using Anxiety as a Dominant Motivational State. Of these nine, the criterion of the ratio between this Motivational State and a corresponding Barrier of Acts of Nature was found to identify eight as honor or probationary students.

The ratio of Facilitators to Inhibitors was a highly successful discriminant in those cases in which it applied, i.e., in those protocols in which the Facilitators and Inhibitors were used. Of the eleven subjects, four did
not make use of either a Facilitator or an Inhibitor. In those cases in which the two determinants occurred, the criterion discriminated successfully in all cases.

The data concerned with these criteria are presented in Table XI.

Of the students in the validation sample it was possible to identify nine of ten as either honor or probationary students by the use of the experimentally developed criteria. One was identified incorrectly and one possessed an equal number of the characteristics of each group.
CHAPTER VII

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of the final chapter is to summarize the analysis of the data and to report the findings and the conclusions based on these findings, as well as to make recommendations for the use of the information and for needed research.

I. SUMMARY AND CONCLUSIONS

Summary

The purpose of this study was to determine what differences, measurable by the Thematic Apperception Test exist between students who have been identified as successful in college and those who have been identified as probationary.

The null hypothesis to be tested was that no difference other than difference due to chance exists between the responses made to the Thematic Apperception Test pictures by a group of honor students at the College of the Pacific and the responses made by a group of probationary students at the same institution and that identification of a validation group of honor and probationary students on the basis of the Thematic Apperception Test will be no different from a chance identification.

Two methods of analysis were utilized, one of which provided no significant differences and had the effect of
emphasizing the similarity between the two groups, insofar as personal adjustment is the evaluative criterion. The second method of analysis yielded four criteria which were significant at the .05 level of confidence and four which did not meet this level of significance, but which were considered usable as discriminants. Those which were statistically significant at the .05 level were (1) the ratio of a Personal Consequence of Satisfaction to one of Anxiety; (2) the ratio of a Personal Consequence of Satisfaction to all other Consequences; (3) the ratio of socially acceptable Consequences to those that were unacceptable; and (4) the agreement of the sex of the Central Figure with the sex of the subject.

Those which were not statistically significant at the .05 level but were considered usable were (1) the ratio of Resolution by Direct Action to External Resolution; (2) the presence of a story using Cognizance as a Dominant Motivational State; (3) the ratio of Anxiety as a Dominant Motivational State to Acts of Nature as a Barrier; and (4) the ratio of Facilitators to Inhibitors. The discriminating criteria were applied to a validating population of eleven and were found to be able to discriminate between the honor and probationary students in nine cases out of ten. One case remained unidentifiable, possessing an equal number of the characteristics of each group.
Conclusions

In testing the hypothesis this study has shown that it is possible to discriminate between honor and probationary students on the basis of objective type criteria developed from Thematic Apperception Test responses. It was possible for the experimenter to evaluate the eleven subjects of the validation group and to identify nine of ten subjects correctly on the basis of the criteria developed in this study. One was incorrectly identified and one possessed an equal number of characteristics of each group—honor and probationary.

The probability of a chance occurrence of such identification is approximately equal to .01. The null hypothesis, therefore, must be rejected and the existence of measurable differences between the two groups be acknowledged.

From the stories told by these students it was possible to hypothesize about the nature of honor and probationary students. The honor students told stories in which the Central Figure was quite flexible, amenable to external suggestion, easy to influence and frequently depended on others for help. They also told stories in which the Central Figure was satisfied with the results of a course of action once decided upon. The outcomes of the stories told by this group of students were usually socially acceptable, i.e., right prevailed.
The probationary students told stories in which the Central Figure was frequently rigid, and likely to meet frustration with channeled direct action. The Central Figure was frequently anxious about the actions he had taken or had decided upon. The stories told by this group of students frequently had outcomes which were questionable in terms of their social acceptability.

The hypothesis that these characteristics also describe the students telling the stories is acceptable to the degree that the subject closely identified with the Central Figure and that the story was to this degree autobiographical. A subject, in telling a story with a Dominant Motivational State of Achievement, may be highly motivated and actually be quite successful. This same subject may, however, be unsuccessful, and the story he tells be an indication of his frustration and an indicator of failure. The validity of such a hypothesis has not been established and will remain for further studies to accept or reject.

The stories told by honor students suggest a resemblance to Whyte's "organization man"1 in that there appears to be a concern with adherence to middle class values and a strong desire to conform on the part of these students.

The probationary students frequently told stories in which the outcome suggested less concern with these values and less desire to conform.

This hypothesis, if validated, would suggest that our educational system, by rewarding the conforming student, has the effect of contributing to the development of the conformist phenomenon the "organization man."

II. RECOMMENDATIONS FOR FURTHER STUDY

This study dealt with two groups of students from the extremes of the population, i.e., one an honor group and the other on probation. The criteria developed were able to discriminate between the two extreme groups. A study of the marginal student to determine the discriminative ability of the criteria in this area would be highly desirable.

Criticism has been directed at the Thematic Apperception Test because it is cumbersome and expensive of time. This characteristic would make it impractical for use by admissions committees as an admissions instrument. It was not the purpose of this study to develop an instrument which would be readily usable by admissions committees, but rather to explore the possibility that personality differences do exist and that such differences are measurable by a personality evaluating instrument, in this case the Thematic
Apperception Test. That such differences exist can be accepted and further research should be directed toward providing methods by which the differences identified in this study can be made practical for use by admissions committees.

Certain questions arose with regard to two of the criteria developed in this study and further investigation of these is indicated. The criterion based on the agreement of the sex of the Central Figure and the subject is one which needs further study. It is recommended that the distribution of the subjects according to sex be controlled in a subsequent experimental study.

The second of these is the criterion utilizing the presence of a Motivational State of Cognizance. The presence of a Thematic Apperception Test story using a Motivational State of Cognizance is a strong indicator of honor status but the relative paucity of such stories in any Thematic Apperception Test protocol makes it difficult to exploit this characteristic. It is recommended that the dynamics which underlie the use of this Motivational State be studied with the development of an instrument which can utilize these dynamics more effectively as a goal.

The problem of college student mortality will probably continue for many years to come, but this study has identified an area for investigation—the study of the
personality characteristics of students who succeed and those who fail—the thorough investigation of which may well make a real contribution to its control.

A suggestion is also made for the study of the college curriculum. A study of the personalities of succeeding and failing students can provide colleges with valuable information about the kinds of demands they are making on students.
BIBLIOGRAPHY
A. BOOKS


B. PERIODICALS


Taylor, Janet A. "A Personality Scale of Manifest Anxiety," 
Journal of Abnormal and Social Psychology, 48:285-289, 
1953.

Weintraub, David. "Graduation Prospects of Entering 
Freshmen," Journal of Educational Research, 39:116-126, 
1945.

Young, F. Chandler. "College Freshmen Judge Their Own 
Scholastic Promise," Personnel and Guidance Journal, 

C. ESSAYS AND ARTICLES IN COLLECTIONS

Walker, Emery J. "Admissions Requirements in Action," 
College Admissions, Princeton, N. J.: College Entrance 
Examination Board, a/o Educational Testing Service, 

D. GOVERNMENT PUBLICATIONS

Kelly, J. F. Continuity of College Education. U. S. 

He Neely, Hugh. College Student Mortality. U. S. Office 

E. ENCYCLOPEDIA ARTICLES

Monroe, Walter B. (ed.). Encyclopedia of Educational 

F. UNPUBLISHED MATERIALS

Bijou, Sidney W. "Story Analysis." Permission to quote 
granted by the author.

Dana, Richard H. "A Manual for Objective TAT Scoring." 
St. Louis, Missouri: St. Louis State Hospital, 1955. 
(Mimeoographed.)
APPENDIX
STORY ANALYSIS  
(January 1949 Revision)  

Section I  
The Story Work Sheet  
Each story is to be analysed on a separate work sheet. (See last page of this outline.) It will be noted that the work sheet is divided in half. The upper half is for an abstract of the story; the lower for an analysis of the abstract in the conceptual terms suggested in Section III.  

Section II  
Abstracting the Stories  
Each story is abstracted or briefed so as to emphasize the main components of the story, and to eliminate minor segments, elements and part stories. The abstract should be kept at the phenomenological level, i.e., conceptualization should be avoided.  

Section III  
Intrastory Analysis  

I. Social setting of the story. (Modification of Tomkins' classification. (6) Indicate which areas describe the social setting of the story.  
A. Domestic interrelations predominantly in the period of  
   1. Childhood  
   2. Adolescence  
   3. Adulthood  
B. Social interrelations (other than domestic)  
C. Love, sex, and marital relations. (Note whole phrase and underline words which apply.)  
D. School and training (Note whole phrase and underline one.)  
E. Vocational and economic (Note whole phrase and underline one.)  

II. Central figure  
A. Indicate central figure  
B. Note all words describing the central figure. (E.g., bright, young, ambitious)
III. Dominant motivational state. Indicate the main motivational state as defined in terms of behavior sequences (actions and verbalizations) given in the story. (List and definitions after Murray [3,4] with minor modifications.) Also indicate what data it refers to, e.g. "Ach -- desire to be a successful businessman" or "Auto -- to be free of parental domination". Also indicate concurrent states.

A. Abasement (Abas) To submit to coercion or restraint in order to avoid blame, punishment, pain or death. To suffer a disagreeable press (insult, injury, defeat) without opposition. To confess, apologize, promise to do better, atone, reform. To resign himself passively to scarcely bearable conditions. Masochism. Self-depreciation.

B. Achievement (Ach) To work at something important with energy and persistence. To strive to accomplish something creditable. To get ahead in business, to persuade or lead a group, to create something. Ambition manifested in action. To overcome obstacles, to exercise power, to strive to do something difficult as well as quickly as possible.

C. Acquisition (Acq) To gain possessions and property, To grasp, snatch or steal things. To bargain or gamble. To work for money or goods.

D. Affiliation (Aff) To form friendships and associations. To greet, join, and live with others. To cooperate and converse socially with others. To love. To join groups.

E. Aggression, Emotional and Verbal (Aff - E & V) To hate (whether or not the feeling is expressed in words). To get angry. To engage in a verbal quarrel; to curse, criticize, belittle, reprove, blame, ridicule. To excite aggression against another person by public criticism.

F. Aggression; Physical, Social (Agg - PS) To fight or kill in self-defense or in defense of a loved object. To punish an offense. To pursue, catch or imprison a criminal or enemy.

G. Aggression; Physical, Asocial (Agg - PA) To hold up, attack, injure, or kill a human being unlawfully. To initiate a fight without due cause. To avenge an injury with excessive brutality. To fight against legally constituted authorities. To fight against his own country. Sadism.

H. Aggression, Destruction (Agg - D) To attack or kill an animal. To break, smash, burn, or destroy a physical object.

I. Anxiety, Physical (Anx - P) To avoid pain, physical
injury, illness and death. To escape from a dangerous situation. To take precautionary measures.

J. Anxiety, Social (Ans. S) To avoid blame, ostracism or punishment by inhibiting social or unconventional impulses. To be well-behaved and obey the law.

K. Autonomy (Auto) To resist influence or coercion. To defy an authority or to seek freedom in a new place. To strive for independence.

L. Cognition (Cog) To explore (moving and touching). To ask questions. To satisfy curiosity. To look, listen and inspect. To read and seek knowledge.

M. Creation (Cr) To manifest ability to produce and develop original ideas; to devise new methods, construct hypotheses, offer novel explanations, create a work of beauty.

N. Defiance (Def) To admire and willingly follow a superior S. To cooperate with a leader. To serve gladly.

O. Dominance (Dom) To try to influence the behavior, sentiment or ideas of others. To work for an executive position. To lead, manage, govern. To coerce, restrain, imprison.

P. Excitement (Excit) To seek excitement. To enjoy and thrive on exciting and stimulating events.

Q. Exposition (Exp) To point and demonstrate. To relate facts. To give information, explain, interpret, lecture.

R. Intransgression (Intrans) To blame, criticize, reprove or belittle himself for wrongdoing, stupidity, or failure. To suffer feelings of inferiority, guilt, remorse. To punish himself physically. To commit suicide.

S. Intransmurtrance (Intransur) To comfort himself, self-pity, to get some enjoyment out of his own grief. To seek consolation in liquor or drugs.

T. Nurture (Nur) To express sympathy in action. To be kind and considerate of others, to encourage, pity, and console. To aid, protect, defend or rescue an object.

U. Passivity (Pass) To enjoy quietude, relaxation, sleep. To feel tired or lazy after little effort. To enjoy passive contemplation or the reception of sensuous impressions. To yield to others out of apathy and inertia.

V. Sex (Sex) To seek and enjoy the company of the opposite sex. To have sexual relations. To fall in love. To get married.

W. succourance (Suc) To seek aid or consolation. To ask, or depend on someone else for encouragement.
forgiveness, support, protection, care. To enjoy receiving sympathy, nourishment or useful gifts. To feel lonely in solitude, homesick in a strange place, helpless in a crisis.

X. Sustenance (Sus) To strive to make a living, or to take care of oneself. To do what is necessary to eat, sleep, and shelter oneself within marginal limits.

IV. Nature of frustration. (1) Indicate which of the following concepts describe the nature of the frustration. A frustration is any event blocking or delaying the sequence of behavior which attempts to bring about the goal or goal reaction which satisfied the motivation state, i.e., reduces or eliminates it. (2) Also indicate the data involved.

A. State or states of the central figure.
B. Trait or traits of the central figure.
C. An individual
D. A group of individuals
   1. Organized
   2. Unorganized
E. Conventions, laws, mores, institutions
F. Physical objects
G. Acts of nature
H. Time
I. Space and place
J. Animal

V. Nature of facilitator or facilitators. (1) Indicate which facilitator or facilitators apply, if any. A facilitator is any person, thing or event which directly or indirectly functions to assist the central figure reach his goal. (2) Also indicate the data involved.

A. State or states of the central figure.
B. Trait or traits of the central figure.
C. An individual
D. A group of individuals
   1. Organized
   2. Unorganized
E. Conventions, laws, mores, institutions
F. Physical objects
G. Acts of nature
H. Time
I. Space and place
J. Animal

VI. Nature of inhibitor or inhibitors. (1) Indicate which inhibitor or inhibitors apply, if any. An inhibitor is any person, thing, or event which directly or indirectly functions to retard the central figure reach his goal. It is on a continuum with the concept of
frustration. (2) Also indicate the data involved.
A. Status or states of the central figure.
B. Traits or traits of the central figure.
C. An individual
D. A group of individuals
   1. Organized
   2. Unorganized
E. Conventions, laws, mores, institutions.
F. Physical objects
G. Acts of nature
H. Time
I. Space and place
J. Animal

VII. Resolution or interaction between goal oriented behavior
and conflicting behavior or a barrier. (1, 2, 5) State
which of the following possibilities apply.
A. Under conditions of conflict. These situations with
simultaneous motivational states having incompatible
instrumental act sequences. Under such circumstances
the central figure
1. Makes choice
   (a) Alone
   (b) With assistance
2. Does not make choice, continues vacillatory
   behavior (fixation)
3. Compromises - modifies one or both motivational
   states
   (a) Alone
   (b) With assistance
4. Leaves situation
   (a) Runs away
   (b) Commits suicide
   (c) Resorts to drugs, alcohol, etc.
   (d) Fantasy (verbal solution)
   (e) Behavior disorder
   (f) External resolution
B. Under conditions of a barrier. These are situations
in which the behavior sequence based on the motiva-
tional state is delayed or blocked. Under such
circumstances, the central figure
1. Maintains the motivational state, and
   (a) Takes whatever direct action is necessary
   to by-pass, eliminate, or destroy the barrier
      (1) Alone
      (2) With assistance
   (b) Indulges in non-effective action
      (1) Continual non-adoptive behavior (fixation)
      (2) Makes attempt, gives up, submits,
VIII. Consequence of course of action used for resolution. (How does he feel)
A. Personal
   1. Changes emotional state
      a) Satisfaction
      b) Anxiety
      c) Neutral feelings
      d) Ambivalence
   2. Relationship (proportionality, appropriateness) between mode of resolution and changes in emotional state. Judgement necessary.
B. Social - proportionality between act (mode of resolution) and the social consequence.

IX. Other remarks.
A. Note features of the story not included in the analysis.
B. Note behavior accompanying all or part of the story (blocks, excitement, etc.)

Section IV

INTERSTORY ANALYSIS

I. Interstory analysis is accomplished by "holding one condition constant" and see what is contained in the other conditions. The following are suggestions for analysis.
A. Divide the stories on the basis of social settings and examine
   1. The motivations
   2. The reactions to frustration and conflict
   3. Facilitators and Inhibitors
   4. Consequences
B. Divide the stories on the basis of motivation and proceed as above.
C. Divide the stories on the basis of reactive adjustments and proceed as above.
D. Compare conflict stories with barrier stories.

II. Summarize the findings obtained from above analysis.

III. Relate your findings to those obtained from all clinical procedures. Compare first and last ten.

REFERENCES