AN ANALYSIS OF METROPOLITAN MALE COLLEGE STUDENTS INVOLVED IN DISCIPLINE PROBLEMS

> Thesis for the Degree of Ed. D. MICHIGAN STATE UNIVERSITY Osborne B. Parker 1964

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AN ANALYSIS OF METROPOLITAN MALE COLLEGE STUDENTS

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presented by

Osborne B. Parker

has been accepted towards fulfillment of the requirements for

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Osborne B. Parker

## AN ABSTRACT OF A THESIS

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

DOCTOR OF EDUCATION

#### ABSTRACT

#### AN ANALYSIS OF METROPOLITAN MALE COLLEGE STUDENTS INVOLVED IN DISCIPLINE PROBLEMS

by Osborne B. Parker

The purpose of this study is to contribute to the basic understanding of factors involved when certain individuals get themselves involved in discipline situations while others do not. The intent of the study is to contribute by discriminating between the non-discipline potential of one individual and the discipline potential of another individual at the time of matriculation.

The population studied consisted of the Freshmen Males of the Fall Term, 1958, at Michigan State University who came from Standard Metropolitan Statistical Areas. The discipline situations were limited to those who were recorded in the Dean of Students Office. The discipline group was sub-grouped into minor misconduct, disorderly conduct, alcohol and other, theft and burglary, and miscellaneous.

Matriculation data collected were size of the metropolitan area, central city growth rate, outside central city growth rate, parental education level. father's occupation, College Qualification Test score, Test of Critical Thinking scores, Michigan State University Reading Test scores, and Differential Values Inventory scores.

The Multiple Discriminant Function Analysis technique was applied to the data. This technique will statistically differentiate the intensity and direction to a maximum degree between the several groups.

A reading-socio-economic background function differentiated the groups at a .07 level of significance. The remaining functions resulting from the analysis were of negligible statistical significance.

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#### THE PROBLEM

The literature on college discipline abounds with philosophical statements, but few are substantiated by defensible research. Mueller<sup>1</sup> has stated that the first step in a disciplinary program is to not admit deviant personalities; however, she did not state how this was to be done. Other writers<sup>2,3</sup> have commented on the general subject without presenting theories or research. The words of Kvaraceus<sup>4</sup> may well be paraphrased to say, "We suffer no lack of opinions, but we do suffer from a severe shortage of facts in the paucity of research directed towards prevention and control of 'college discipline situations'.

<sup>1</sup>Kate H. Mueller, "Theory for Campus Discipline", <u>The Personnel and Guidance Journal</u>, Vol. 36, January, 1958, pp. 302-308.

<sup>2</sup>Esther Lloyd-Jones and M. R. Smith, Student Personnel Work as Deeper Teaching, New York: Harper and Brothers, 1954.

<sup>3</sup>Gilbert C. Wrenn, <u>Student Personnel Work in</u> College, New York: Ronald Press Co., 1951, pp. 460-471.

<sup>4</sup>W. C. Kvaraceus, "The Counselors' Role in Combating Juvenile Delinquency", The Personnel and <u>Guidance Journal</u>, Vol. 36, October 1957, pp. 99-103.

### Importance of the Problem

Foley<sup>1</sup> reported (1473) disciplinary situations over a six-year period from 1941 to 1947 at the University of Minnesota with a distribution in various categories as follows:

Disorderly conduct, financial irregularity, theft and burglary, and sex misconduct have, at least, legal overtones; yet the student personnel worker faces these with little training, research insight, or other training outside his personal experience span.

Costar's<sup>2</sup> study indicated that approximately twenty-eight percent of the situations that occurred at Michigan State University over a four-year period had legal overtones.

<sup>&</sup>lt;sup>1</sup>John D. Foley, "The Role of Counseling in Discipline", <u>Trends in Student Personnel Work</u>, (E. G. Williamson, ed.) <u>Minneapolis</u>: <u>University of Minnesota</u> Press, 1949, pp 201-212.

<sup>&</sup>lt;sup>2</sup>James Costar, "Academic Adjustment of Selected Male Students Reported for Disciplinary Action", (Unpublished doctoral dissertation), Michigan State University, 1958.

Thus, it can be seen that there are some basic needs that can be listed as follows:

1. For the individual:

More and better psycho-social information might lead to preventive measures, better disposition of the situations, aid in the development of educational programs and thusly, save the individual time, money, and embarrassment.

2. For society:

The improvement of the handling of disciplinary situations could lead to the completion of education for many creative individuals who would otherwise be lost to society. Also, those previously lost to society in the creative sense may have become increasing burdens when returned thereto.

3. For the institution:

The needs of the institution are, of course, to some degree confounded with the needs of the above; however, it can be noted how this information might lead to greater savings in staff time and salaries as well as the betterment of many other programs.

### Purpose of The Study

In this study, the intent is to determine whether or not it is possible to discriminate between the discipline potential of one group and the non-discipline potential of another group at the time of matriculation.

Administrators of colleges and universities are interested in the basic differences between the disciplinary and non-disciplinary individuals and these differences often become a major topic of conversation at various national meetings. Therefore, the purpose of this study is to contribute to the basic understanding of the factors involved when students get themselves into college disciplinary situations.

#### Postulates of the Study:

It is postulated that there are six main variables that condition the young college male prior to his matriculation. The four variables were selected because of their relevance in evaluating disciplinary potential at the time of matriculation.

The six main variables which take the form of minor research postulates, leading to the general hypothesis, may be defined as follows:

- Postulate I Individuals who come from progressively larger metropolitan areas would be expected to show progressively greater potential for disciplinary situations.
- Postulate II Individuals who come from areas of progressively higher population growth rates outside the central city would be expected to show progressively greater potential for disciplinary situations.
- Postulate III Individuals who come from areas of progressively lower population growth rates in the central city would be expected to show progressively greater potential for disciplinary situations.
- Postulate IV Measures of the parents' educational levels and the father's occupational level combine into a single score by

- Postulate V Measures of the individual intellectual ability would indicate to some degree the individual's ability to learn acceptable affect and ability to learn to make rational decisions and adjustments. Therefore, it would be expected that the higher the measured mental ability the lower the potential for disciplinary behavior.
- Postulate VI The value system of the individual would best condition the individual to know within himself the social expectations without any dependence upon peer environment. Therefore, it would be expected that the more internally independent the value system the less the disciplinary potential.

These portulates imply interaction such that no factor could be considered as an entity; rather, each will be to a degree a measure of the modifications of the others.

#### Statement of Hypothesis

Following the purposes, concepts, limitations and postulates previously stated, the hypothesis of the study will be as follows:

Paul L. Dressel, Irvin J. Lehmann and Stanley O. Ikenberry, Critical Thinking, Attitudes, and Values in Higher Education: A Preliminary Report, East Lansing, Michigan: Michigan State University Press, 1959, Appendix

It is possible to differentiate among groups of students classified as Minor Misconduct Behavior, Disorderly Conduct Behavior, Alcohol (only factor) Behavior, Alcohol and Other Behavior, Theft and Burglary Behavior, Miscellaneous Disciplinary Behavior and Non-disciplinary Behavior via measures of Metropolitan Area, Socio-economic Background, Intellective Ability, and Value Systems.

If, in the analysis of the data, the directional hypothesis is supported, the differences among the groups will be inspected as differences of direction and intensity in multidimensional space.

#### Delimitations of the Study

The limitations of the study are listed as follows:

- 1. The groups analyzed will be limited to males who were freshmen of the Fall Term, 1958, who come from Standard Metropolitan Statistical Areas<sup>1</sup>.
- 2. The discipline group is limited to those reported in the Michigan State University's Dean of Students' Office.
- 3. The limited amount of matriculation data and a sample from one institution mark the research as a pilot study.

#### Thesis Organization

In the second chapter will be found a critical review of a selected group of related researches.

10. S. Consus Bureau, Preliminary Report, 1960, United States Consus Bureau, Washington, D. C.; United States Printing Office, 1961. In the third chapter will be found the methodclogy including sampling, instrumentation, the processing of data, and the analysis procedures.

In the fourth chapter will be found the results of the analysis of data.

#### CHAPTER II

#### THE LITERATURE

The following review of the literature will include, theories of juvenile delinquency, studies involving juvenile delinquency, and studies of college discipline. Because of the limited nature and extent of materials relating directly to the area under study, this chapter will be somewhat limited. Studies of legal-age delinquency in the general population will be limited to the studies most directly related to the present study.

#### Delinquency Theories

The theories of juvenile delinquency are being included in the review of literature because of their relevancy to the present study. These theories of juvenile delinquency are, however, only empirical in relationship to the present study.

An analysis of delinquency theories indicate several common areas of emphasis. The theories and a short description follow:

1. Psychoanalytic Theory<sup>1</sup>:

A theory which holds that the individual has innate antisocial drives which are only

LE. R. Eissler, (ed.), Searchlights on Delinquency, New York: International Universities Press, pp. 3-25.

modified through integration of socially acceptable values, value systems, and behavior patterns into the ego and superego. Thus, the individual is in a state of conflict resulting from the opposition of instinctive nature and the demands of his culture during maturation. The psychoanalytic school tends to give little, if any emphasis to environmental conditions, and the school would hold that delinquency is an adaptive mechanism to frustration during maturation, somewhat, like that of psychoses; however, it is a distinctive set of disorders. It is, then. a form of withdrawal from normal behavior and values of a society. The theory also holds that the "effective" delinquent is keen, alert, and a manipulator of others.

#### 2. Identity Diffusion and Psychosocial Moratorium<sup>1</sup>:

An orientation which develops from psychoanalytic thought of a less classical nature. It holds that the individual develops according to standards of significant others as a result of re-occurring situations of inner and outer conflict. At adolescence, the healthy personality develops ego identity as contrasted with ego diffusion. This theory gives emphasis to both physical and human environment. Ego identity is basically a function of adolescence. When a youth develops a sense of incongruity between how he is recognized by significant others and the way in which he sees himself, there is a disturbance in the personality, which may or may not create an acute or chronic personality defect. If there is the development of a personality defect, it may be noted in delinquent acts; however, this is but one aspect of identity diffusion.

Psychosocial Moratorium has reference to the societal extension of the period of education

Leric H. Erickson, "Growth and Crisis of the 'Healthy Personality'", Symposium on the Healthy Personality, (J. S. Milton, ed.), New York: Josiah Macy, Jr., Foundation, 1950. and childhood wherein the individual is not expected to assume complete and normal responsibilities of adulthood. Thus, during the period of adolescence nearly all behavior is acceptable or at least not strictly punished; however, without a line of demarcation, the individual finds himself in the period where psychosocial moratorium and activities previously accepted are now rejected.

3. Delinquent Ego Theory1,2:

The theory draws from psychoanalysis, psychology. psychiatry and sociology. It holds that the ego is delinquent in situations where it defends impulse gratification at any cost when in opposition to the normative value orientation in which the individual is being nurtured. In the sociological sense, this theory holds that the delinquent needs as much support as does a normal. The delinquents get their support from joining forces with other delinquents and develops self images that are in harmony with the group. The delinquent ego school sees the individual doing two basic things after having been delinquent: 1) The individual uses rationalisation to avoid the pressures of inner conflict; 2) The individual uses his acumen to manipulate his environment.

#### 4. Cultural Transmission Theory<sup>3</sup>:

The theory emphasizes the social and cultural aspects of the problem. Noting that there are differentials in delinquency rate, it has been theorized that delinquent attitudes and behavior are learned in the social setting. Thus, the theory holds that the individual is not maladjusted, antisocial, or disorganized, but within

Frits Redl and David Wineman, Children Who Hate, Glencoe, Illinois: The Free Press, 1951, pp. 143-195.

<sup>2</sup>Fritz Redl and David Wineman, <u>Controls</u> from <u>Within</u>, Glencoe, Illinois: The Free Press, 1952.

<sup>3</sup>Clifford R. Shaw and Henry D. McKay, Juvenile Delinquency in Urban Areas, Chicago: University of Chicago Press, 1942, pp. 436-441. the expectations of his social environment. In these areas that he is living of delinquency, traditional beliefs and attitudes have developed wherein that segment of society feels that its activities will bring a positive change in status. It is stated that these areas of high delinquency are isolated and in opposition to the dominant orientation of the greater community.

#### 5. Differential Association Theory1:

The theory is not an outgrowth of a general theory of human behavior, but rather (it is related only to) criminal and delinquent behavior. It has nothing to do with emotional upsets, intelligence per se, or social status. Rather, it has to do only with behavior as a result of learning. Thus, the theory states that criminal and delinquent behavior and attitudes are learned in social settings that are prominently criminal and prominently delinquent. The theory holds that any community is geared to both delinquent behavior and normal behavior; however, the resulting behavior of the individual is dependent upon the duration and intensity of the exposure to the two influences. The theory overemphasizes the social and underemphasizes the individual.

## 6. Delinquent Subculture Theory<sup>2</sup>:

The theory holds that there will be the emergence of a delinquent subculture within the greater culture whenever there is a collection of individuals having common maladjustment problems which appear insoluble by normal social behavior. The maladjusted grouping provides its own morality code for delinquent behavior. Of primary importance in this theory is the lack of status achievement within the subcultural group, and it requires a complete rejection

LEdwin H. Sutherland, Principles of Criminology, Fourth Ed., Philadelphia: J. B. Lippincott Co., 1947, pp. 1-10.

<sup>2</sup>Albert K. Cohen, <u>Delinquent</u> Boys, Glencoe, Illinois: The Free Press, 1955, pp. 59-140. of whatever normal status was held to gain any degree of status in the subcultural grouping. A basic criticism of the theory is that the theory is more applicable to working class groups than any other.

7. Social Disorganization Theory<sup>1,2</sup>:

The theory states that delinquency is greatest in areas wherein there is a lack of social organization. The lack of organization is generally due to demographic changes such as the development of suburbia or the ever shifting population in low class housing. In both situations, there is little or no development of community traditions to which the individual is expected to adhere. Many of the adherents of this theory give the school a major responsibility in creating traditions and expectations for youth which will counteract the lack in the general community.

### 8. Aggressive Behavior Theory<sup>5</sup>:

The theory is based on the belief that all social behavior is understandable in terms of motivation of people in certain situations. Thus, important to understanding is knowledge of goals and values in operation and the situation in which these goals and values are operating. If the situation is such that goal attainment is being frustrated, aggressive behavior can be expected. Aggressive behavior, recognized as a concomitant of delinquency, arises according to the orientation from insecurity in interpersonal relations. There is also anxiety which comes from overfelt inadequacy for performance standards which come from the society of important others. The theory

Bertram M. Beck, "The School and Delinquency Control", The Annals of the American Academy of Political and Social Science, November, 1953 p. 66.

<sup>2</sup>Bernard Lander, Towards a Better Understanding of Juvenile Delinquency, New York: Columbia University Press, 1954.

<sup>3</sup>Talcott Parson, "Certain Primary Sources and Patterns of Aggression in the Social Structure of the Western World", Psychiatry, May, 1947, pp. 167-181.

also holds that one common feature in these situations is the lack of love and consistency of attitude expressed by the parents. The inadequacy for performance is the result of, or the combination of, standards set too high. repeated comparison to higher achievement of others, and/or standards unattainable in the particular situation. The individual who is presented with these conditions over a prolonged period develops a shell of protection such that aggressive impulses become fixed and there is a resultant behavior pattern without any self-control. The fixed aggressive impulse is directed towards the least threatening objectives within the reach of the individual. The theory gives as the important factor that boys tend towards delinquency more than girls, the fact that girls find it easier to continue the feminine pattern started in early childhood through contact with the mother. Whereas. boys must make a second adjustment to develop male identification. The readjustment by the boy is overacted in exemplifying prowess and "bad" behavior to prove himself a man.

### 9. Theory of Anomiel:

The term anomie is rooted in the Greek and means 'without norm' or normless. The theory states that the normlessness is a result of the lack of opportunity to achieve cultural values in the environmental social setting. Thus, in the society in which success is highly valued, an individual from certain segments of that society may well not integrate that value system because of the lack of opportunity. It might also be said that the individual is not integrated into the society in terms of normal achievement. In this way, the illegal attainment of surface symbols of

<sup>1</sup>Robert K. Merton, <u>New Prespectives</u> for <u>Research</u> on Juvenile Delinquency, H. L. Witmer and R. Kotinsky, eds., Washington: United States Department of Health, Welfare and Education, 1955, pp. 25-50. status are accounted. This theory is a sociological parallel for 'Psychopath' theory in abnormal psychology.

#### Related Research

This review of related research will include journal articles, dissertations, and books of research in the related areas. It should be stated that some of the journal articles may be unduly criticized as a result of the restrictions placed on authors by the editors of various publications.

Each review will be related to the several postulates and will include a short description of the research which will be followed by a critical review. Stated improvements made in the present work will be found following the reviews. The critical review will follow the outline presented by Farquhar and Krumboltz<sup>1</sup>.

I.	Def:	inition of problem.
	Α.	Was the problem clearly defined?
	Β.	Was a verifiable hypothesis formulated?
	C.	Was the hypothesis one which was logi-
		cally deducted from some theory or problem?
II.	The	design.
	Α.	Was the statistical design employed in
		the investigation appropriate to the
		particular experimental methods, condi-
		tions, subjects, and hypothesis under
		test?
	в.	Was the population studied clearly
		defined?

Lwilliam W. Farquhar and John D. Krumboltz, "A Check List for Evaluating Experimental Research in Psychology and Education", Journal of Educational Research, 52: pp. 353-354, 1959.

- C. Was the method or methods of drawing the sample clearly defined?
- D. Was the control group chosen in the same manner and from the same population as the experimental group?
- E. Were the various treatments including the control assigned at random to the groups?
- F. Did the experiment include replication?
- G. Was the level of significance necessary to reject the null hypothesis specified before the data was collected and analyzed? The procedure
- III. The procedure.
  - A. Were the treatments and methods of collecting data described so that an independent investigator could replicate the experiment?
  - B. Were the size and characteristics of the sample adequately described?
  - C. Were the treatments administered so that extraneous sources of error were either held constant for all treatments and control groups or randomized among subjects within all groups?
  - IV. The analysis.
    - A. Was the criterion of evaluation appropriate to the objectives of the study?
    - B. Was the evidence of the reliability of the criterian measure given for the experimental sample?
    - C. Were the statistical assumptions which were necessary for a valid test of the hypothesis satisfied?
    - V. The interpretation.
      - A. Were the conclusions consistent with the obtained results?
      - B. Were the generalizations confined to the population from which the sample was drawn?

The summary at the end of the chapter will include the weaknesses of all the reviews to be corrected in the present study.

Ivy Bennett<sup>1</sup>, while at London University, in cooperation with the late Kate Friedlander, did a study which

Ivy Bennett, Delinquent and Neurotic Children, London, England: Tavistock Publication Ltd., 1959. at its inception was to have differentiated between normal, delinquent, and neurotic children in psychoanalytic terms. The Bennett study is related to all six postulates of the present study. The data for the study was collected at three rural English Child Guidance Clinics which serve towns, villages, and countryside alike. Diagnostic assessments were made by a psychiatric team which included a psychiatrist, and educational psychologist. a psychiatric social worker, and a psychoanalyst or a child psychotherapist. Maladjustments were categorized into eleven classifications, and only those that were clearly neurotic. delinquent or normal were utilized in the study. During the course of the three-year study the "normal" classification which was to have been selected from the children erroneously referred by the parents was dropped for lack of psychiatric information and because it was noted that referral behavior was to a great degree common with the delinquent and neurotic group.

The problem was clearly defined and was supported by a pilot study; however, the problem of the normal grouping should have been noted during the pilot study. Many others have noted the problem of the so-called normal group and some have stated that the results may be a study of those apprehended rather than of information collected.

By categorizing three hundred items of information collected on each individual under, 1) the child at large,

2) the child at home, or 3) the child himself, the author developed fifty-four hypotheses which include varying numbers of the above mentioned three hundred items. These hypotheses were related basically to current psychological and sociological theories of delinquency.

The items under each of the several hypotheses were dichotomized according to the occurrence of the lack thereof in the individual cases. The items were then placed into 2x2 tables in relation to delinquent and neurotic behavior leading to a Chi-square test of each item. Thus, a hypothesis could be wholly or partially rejected or accepted, and as a result of this methodology there were thirty-seven hypotheses that were wholly confirmed and the remaining seventeen were either partially or wholly rejected.

The sample, population, level of significance, and randomization were well defined; however, no provisions were made for replication.

The control of the various psychiatric teams would be the major deterrent in any attempts to replicate this study. This particular phase of the research would be of major importance in the reliability of the criterion measures. One using the weekly meeting of all teams involved could be assured of reliability within one study; however, it would be somewhat tenuous to assume any reliability from one study to another using new teams in different settings.

The conclusions were consistent with the results; however, the results left many hypotheses in an indeterminant condition. Therefore, the study had an appearance of a pilot study. There was more information gained related to the delinquent behavior problems than could be related to neurotic behavior problems.

Osborne, Sanders, and Young<sup>1</sup> did a study, which is related to the fifth postulate of the present study, of freshmen women to determine whether or not the patterns on the Minnesota Multiphasic Personality Inventory would be effective in predicting or identifying unsocial behavior and/or potential behavior deviates. This study appeared to be largely problem oriented and failed to set forth any hypothesis as such.

The authors used critical ratio to test the various non-clinical scales as well as scores on the American Council on Education Psychological Examination, the Cooperative English: Reading Comprehension and the first term grade point averages which were apparently put into the study as an after thought. The clinical scales were tested by analysis of variance technique.

The "experimental" group was a non-random group of forty-one girls who get themselves into various kinds of difficulty during their first term in college. No

<sup>&</sup>lt;sup>1</sup>R. T. Osborne, Wilma Sanders, and Florence Young, "MMPI Patterns of College Disciplinary Cases", Journal of Counseling Psychology, 3: pp. 52-56, 1956.

attempt was made to develop any subgrouping according to the kind of difficulty in which they found themselves. The control group was a random selection of forty-one girls from the remainder of the freshmen class.

This was termed a pilot study and no provision was made for replication; however, it was implied that were the results worthy of further effort the intention was to pursue the problem. It was determined to report the results at both the .05 and .01 level. The design of this study would lead to easy replication by others.

"t" ratios were made comparing group means for the Grade Point Averages, American Council on Education Psychological Examination, Cooperative English: Reading Comprehension, and the L, F, and K scales of the Minnesota Multiphasic Personality Inventory, all of which indicated no significant differences. However, an analysis of the clinical scales of the Minnesota Multiphasic Personality Inventory resulted in the following:

> Between scales.....01 Between groups.....05 Groups X scales....01

of these scales the neurotic triad and the Pd scales were not significant; however, on the Pa, Pt, Sc, and Ma scales the behavior problem girls were significantly higher, while the control group was found to be significantly higher on the Mf scale.

Lents<sup>1</sup> in his dissertation, which is related to postulates one, two, and three of the present study, attempted to differentiate rural and urban juvenile delinquency characteristics of four-hundred twenty boys at the Wisconsin School for Boys during 1948 and 1949. Of this group, one-hundred thirty were of rural origin and two-hundred ninety were of urban origin. It was noted that the majority of the rural offenders came from towns and villages. The study was based on current juvenile delinquency theories, and the investigator found that it was possible to differentiate these two groups.

The problem was clearly defined and verifiable hypotheses were developed concerning: 1) types of offense, 2) membership in gangs, 3) skill in commission of offense, and 4) official handling of an offense.

Statistical analysis of the data was done by critical ratio, and Chi-square using Yule's "Q" for degree of association wherever applicable, and the .05 percent level was chosen for significance.

It would be relatively easy for this study to be replicated; however, no provision for replication was noted in the report of the study itself.

Lwilliam P. Lontz, "Rural-Urban Differences and Juvenile Delinquency", Journal of Criminal Law, Criminology and Police Science, 47: pp. 331-339, 1956.

The criterion measures were to a degree subjective in that they depended on the reporting of police and court reports and/or the reporting of the offender himself. It was noted that there was no provision made for testing the reliability of these measures.

He found the rural offender to be significantly more often involved in misconduct and nominal breaking and entering; whereas the urban youth was significantly more often involved in car theft. Also, the urban group was significantly more active in gangs. In the rural group the reputation of the family was a significant feature in the official handling of the case. It was noted that eighty percent of all of the offenders came from low socio-economic family status.

At Michigan State University, Costar<sup>1</sup> conducted a study which is related to postulate five of the present investigation. The Costar study was concerned with the academic adjustment of males reported for disciplinary action during their four years in the university. A secondary concern of the study was the characteristics of the disciplinary problem student at time of matriculation. This study included both transfers

<sup>&</sup>lt;sup>1</sup>James William Costar, "Academic Adjustment of Selected Male Students Reported for Disciplinary Action at Michigan State University", Unpublished dissertation, Michigan State University, 1958.

and freshmen who came to the campus in the Fall Term 1953 and continued through Spring Term 1958.

The problem was well defined, with hypothesis developed out of the framework of the problem.

The use of Cni-square and "t" tests with a predetermined .05 level of significance were appropriate to the needs of the study. The control and "experimental" group selection was adequately defined in terms of a specified population. This design did not include replication; however, an independent investigator could replicate the study.

All of the criterion measures were highly reliable, and the statistical assumptions were met.

The conclusions of the study were consistent with the findings of the study and were extended only to the population under study.

The findings of the study worthy of note were the following:

- 1. The disciplinary group made a significantly greater number of contacts with the Counseling Center during their second and third years in college.
- 2. The disciplinary group made a significantly greater number of changes in major during their second and third years in college.
- 3. Significantly fewer of the disciplinary group withdrew during their first year in college.
- 4. A significantly greater number of the disciplinary group enrolled in improvement services during the second year in college.
- 5. Significantly fewer of the disciplinary group attempted to accelerate courses.
- 6. The disciplinary group repeated a significantly greater number of courses.
- 7. The disciplinary group had significantly lower grade point averages during nine of the twelve terms in college.

Costar was able to state relatively little about the characteristics of the disciplinary group at time of matriculation because of the limited nature of information taken at the time.

### SUMMARY

The present study will attempt to avoid the errors noted in the reviewed research as follows:

- 1. By the utility of the extensive matriculation data collected from the 1958 entering freshmen, the present study will attempt to overcome the limitations noted by Costar1.
- 2. By segregating the urban offenders the present study will attempt to avoid confounding of the groups found to be different by Lentz<sup>2</sup>.
- 3. By using a more sophisticated statistic, the present study will attempt to forego the problems of multiple hypotheses as was found in Bennett<sup>3</sup>.

<sup>2</sup>William P. Lentz, "Rural-Urban Differences and Juvenile Delinquency", Journal of Criminal Law, Criminology and Police Science, 47: pp. 331-339, 1956.

<sup>3</sup>Ivy Bennett, Delinquent and Neurotic Children, London, England: Tavistock Publications Ltd., 1959.

<sup>&</sup>lt;sup>1</sup>James William Costar, "Academic Adjustment of Selected Male Students Reported for Disciplinary Action at Michigan State University", (Unpublished dissertation), Michigan State University, 1958.

- 4. By using more objective data the present study will attempt to avoid the problem of subjective reliability as was found in Bennett.
- 5. By the utility of data collected prior to the observation of behavior the present study will attempt to be predictive rather than post-dictive as was found in Costar<sup>2</sup>, Lentz<sup>3</sup>, and Bennett<sup>1</sup>.
- 6. By retaining the normal grouping, the present study will attempt to compare the various behavior groups with the normal rather than compare the behavior groups within themselves as was found in Bennett.
- 7. By increasing the length of time for behavior to be observed, the probability of picking all of the behavior problems is increased differing from the study of Osborne et al<sup>4</sup>.
- 8. By using sociological data the present study will attempt to increase the predictive potential rather than using purely psychological data as in Osborne et al<sup>4</sup>.

lvy Bennett, Delinquent and Neurotic Children, London, England: Tavistock Publications Ltd., 1957.

<sup>2</sup>James William Costar, "Academic Adjustment of Selected Male Students Reported for Disciplinary Action at Michigan State University", (Unpublished dissertation), Michigan State University, 1958.

<sup>3</sup>William P. Lentz, "Rural-Urban Differences and Juvenile Delinquency", <u>Journal of Criminal Law</u>, <u>Criminology</u> and Police Science, 47: pp. 331-337, 1956.

<sup>4</sup>R. T. Osborne, Wilma Sanders, and Florence Young, "MMPI Patterns of College Disciplinary Cases", Journal of Counseling Psychology, 3: pp. 52-56, 1956.

#### CHAPTER III

## THE METHODOLOGY

In keeping with the heretofore stated postulates, hypotheses, limitations, and improvements on previous research, the following methodology has been established.

## Definition of the Population

The population under study consisted of fifteen hundred forty-six male students that were classified as freshmen at the 1958 Fall Term registration at Michigan State University.

To best meet the goals of the study, certain restrictions were placed on the population by excluding all, as follows: 1) students who had previously attended any college or university, 2) foreign students, 3) students whose test data were inadequate or unusable, 4) part-time students enrolled for fewer than twelve credits of study, and 5) students not having home addresses in Standard Metropolitan Statistical Areas.

Having met the above restrictions, there remained a population of seven-hundred ninety-five male freshmen.

Selection and Classification of the Sample: The discipline sample was drawn from the restricted population members who were recorded in the Dean of Students' Cffice because of behavior problems which violated university regulations and/or law. Fifty-six male students from the population were found in the Dean of Students' Records over the three academic years. This sample will be referred to as the disciplinary group.

A sample of fifty male students was randomly selected from the remaining seven hundred thirty-nine students to constitute the non-disciplinary group. All students at Michigan State University are assigned student numbers. There are six digits in each of these numbers. The student numbers were electronically sorted on the last digit by use of International Business Machine cards upon which the student numbers had been recorded. This process completely randomized the cards. The top five cards were selected from each of the ten packets in the machine; thus, a random selection of fifty.

The discipline group was classified into new groups as follows: 1) Minor Misconduct, 2) Disorderly Conduct, 3) Alcohol Only<sup>1</sup>, 4) Alcohol and Other Behavior, 5) Theft and Burglary, and 6) Miscellaneous. These classifications were arrived at from the information included in the Dean of Students' Records. Disorderly conduct was separated from minor misconduct by including in minor misconduct only those that had violated the university regulations while including in disorderly conduct those that were or would have been so cited legally. Originally the

<sup>&</sup>lt;sup>1</sup>Michigan State University has a regulation prohibiting the consumption and/or the possession of alcoholic beverages on the campus.

grouping employed by Foley<sup>1</sup>, was to be used; however, it was noted that the frequencies of sex misconduct, financial irregularity, and misuse of privileges were too small to be included as a separate classification. It was initially assumed that alcohol only would have been a grouping; however, it was found during classification that all but one of those involved in a breach of the alcohol regulation were cited for other disciplinary behavior.

The final classifications used in the analysis and the numbers in the various groups are reported in Table 3.1.

Table 3.1	Sub-classification and Non-discipline Students over a Thr State University	Frequency for the Discipline Groups of Male College ee Year Period at Michigan
	CLASS IFICATION	FREQUENCY
	Non-discipline	50 ·
	Minor Misconduct	9
	Disorderly Conduct	$\mathfrak{V}_{\mathfrak{t}}$
	Alcohol and Other	18
	Theft and Burglary	8
	Miscellaneous	7
	TOTA	L 106

<sup>&</sup>lt;sup>1</sup>John D. Foley, "The Role of Counseling in Discipline" <u>Trends in Student Personnel Work</u>, (E. G. Williamson, ed.) <u>Minneapolis: University of Minnesota Press</u>, 1949, pp. 201-212.

### Instrumentation

To meet the purposes of this study, it was necessary to procure measurements of demographic variables, socio-economic backgrounds, intellective abilities and value systems.

Preliminary Report, United States Census Bureau, 1960: The Preliminary Report lists the Standard Metropolitan Statistical Areas including population of the area, growth rate in the central city, and growth rate outside the central city which satisfies the need of demographic data.

<u>Biographical Data Sheet</u>: A biographical data questionnaire was developed for a study conducted at Michigan State University by Dressel, Lehmann, and Ikenberry<sup>1</sup> under a contract with the United States Office of Education, Department of Health, Education, and Welfare.

The validity and reliability was dependent on the knowledge and truthfulness of the individual completing the Biographical Data Sheet.

A random sampling of the total sample made by personal contact indicated that the information given on the Biographical Data Sheet was consistent.

Paul L. Dressel, Irvin J. Lehmann, and Stanley O. Ikenberry, Critical Thinking, Attitudes, and Values in Higher Education: A Preliminary Report, East Lansing: Michigan State University, 1959.

The information about the father's occupation was gained in answer to the question. "Describe in a line or two what your father does for a living". The descriptions were then scaled on the North-Hatt classification scale as related by Bendix and Lipset<sup>1,2</sup>. Essentially, this is a classification system based on the National Opinion Research Center survey in which randomly selected respondents rated ninety occupations as: 1) excellent standing. 2) good standing. 3) average standing. 4) somewhat below average standing. 5) poor standing. and 6) I don't know where to place that one. All the "I don't know where to place that one" were excluded, the other responses were weighted allowing a theoretical maximum of one hundred points for an occupation receiving only "excellent standing" ranks and a minimum of twenty points for those ranked only "poor standing". Rankings of the occupations ranged from ninety-six given to United States Supreme Court Justice to thirty-three points given to a shoe shiner. Interpolations done at Ohio State University and by Haller at Michigan State University have increased the number of occupations ranked to over five hundred.

Reinhard Bendix and Seymour Martin Lipset, Class, Status, and Power, Glencoe, Illinois: The Free Press, 1953, pp. 110-115.

Additional interpolations derived at Chic State University and these by Dr. Haller were supplied by Lr. Stanley Ikenberry of Michigan State University. The North-Hatt interpolations are recorded in an unpublished, mimeographed paper by Russell Dynes titled, "The North-Hatt Scale".

Scaling the occupations of fathers in the present study were accomplished by consulting the modified North-Hatt classification.

The educational level<sup>1</sup> of the father and mother and the father's occupational level were combined into a single socio-economic score<sup>2</sup> as described by Dressel,

<sup>1</sup>Numberical values were assigned for parental education levels in the manner following: Level 1 - Attended grade school (grades 1 through 8) but did not finish; Level 2 - Completed grade 8 but did not attend high school; Level 3 - Attended high school (grades 9 through 12) but did not finish; Level 4 - Graduated from high school but did not attend college; Level 5 - Attended college but did not graduate; Level 6 - Graduated from college but did not attend graduate or professional school; Level 7 - Attended graduate or professional school but did not graduate; Level 8 - Graduated from a graduate or professional school.

The method of combination was as follows: After the scale values on the three variables was ascertained, an intercorrelation matrix was developed from which first factor loadings were gained by factor analysis. It is assumed that the first factor phenomena measured by this combination is socio-economic background. The combination was finally developed by multiplying each of the variables standard score values by their respective first factor loadings and summarizing into a single score. This can be generalized for simplicity to the following:

 $\left(\frac{FF}{S_1}\right)^{X_1} + \frac{FF}{S_2} \times 2^2 + \frac{FF}{S_3} \times 3^{-K} = \text{Socio-economic index}$ 

Where:

S<sub>1</sub> is the standard deviation of the ith variable FF<sub>1</sub> is the first factor loading of the ith variable X<sub>1</sub> is the educational level of the father X<sub>2</sub> is the educational level of the mother X<sub>3</sub> is the occupational level of the father K<sup>3</sup> is the sum of  $X_1/S_1$  Lehmann, and  $I_k$ enberry<sup>1</sup> and Ikenberry<sup>2</sup>. The means and standard deviations, intercorrelations, and first <u>factor</u> <u>loadings</u> related to the parental education level and the occupational level variables are reported in Tables 3.1, 3.2, and 3.3.

Table	3.2	Means and Standard Deviations of Father's Education, Mother's Education, and Father's Occupation of the Population Under Study(N=106)					
	]	B <b>iogra</b> phica	l Variable	Mean	Standard Deviation		
	Educa	ational Lev	el of Father	4.70	1.740		
	Educa	ational Lev	el of Mother	4.47	1.250		
	0ccu	pational Le	vel of Father	71.70	9.370		

It should be noted in Table 3.2 the mean educational level of the father is somewhat higher than that of the mother. The variance of the father's educational level is greater than the mother's.

lpaul L. Dressel, Irvin J. Lehmann, and Stanley O. Ikenberry, Critical Thinking, Attitudes, and Values in Higher Education: A Preliminary Report, East Lansing: Michigan State University, 1959.

<sup>2</sup>Stanley O. Ikenberry, "A Multivariate Analysis of the Relationship of Academic Aptitude, Social Background, Attitudes and Values of Collegiate Persistence". (Unpublished Thesis) Michigan State University, 1960.

Table	3.3	Intercorrelations of the In the Socio-economic Sc	Biographical ore (N=106)	Variables
		Biographical Variables	Father's Education	Mother's Education
		Mother's Education	•433	
		Father's Cocupation	.565	•339

It will be noted in Table 3.3 that the correlation between father's education and father's occupation is the highest intercorrelation reported. Also, the correlation reported between the mother's and father's education accounts for only 18.7 percent of the covariance between the two educational levels.

Table 3.4	First Factor Correlation Con- Biographical Variables and ( Equation. (N=106)	efficient of the Ceneralized
	Eiographical Variables	Correlation Coefficients
	Father's Education	.849
	Mother's Education	.510
	Father's Occupation	.665

Generalized equation of socio-economic index:  $.487 X_1 + .408 X_2 + .070 X_3 - 9.130 = socio$ economic score.

In table 3.4 it will be noted that the first factor weightings are highly dependent upon the father's education and occupation. It should, also be noted that the generalized equation of socio-economic index creates positive and negative values about a mean of zero. To alleviate the zero function, 6.835 which is equal to the lowest possible negative value was added to each score.

<u>College Qualification Test</u>: The <u>College Qualification</u> <u>Test</u> has a comprehensive total score which is a combination of three ability subtests<sup>1</sup>. The three sub-tests cover the areas of verbal facility, numerical ability, and general information.

The verbal portion of the test consists of seventyfive vocabulary items to be completed within a fifteen minute period. Fifty of the vocabulary items require indentification of synonyms and twenty-five of the items are antonym identification. The fifty items designed to measure conceptual skill in arithmetic, algebra, and geometry has a thirty-five minute time limit. The general information portion of the <u>College Qualification</u> <u>Test</u> is comprised of seventy-five items covering a broad range of subject matter of which approximately half is devoted to social science and the other half is devoted to physical science. The latter portion has a time limit of thirty minutes.

Because of the grade prediction value of the total

LGeorge K. Bennett, Marjorie G. Bennett, Winburn L. Wallace and Alexander G. Wesman, College Qualification Tests, Manual, 1957, New York: The Psychological Corporation, 1957.

score being greater than the sub-scores, the total score was chosen for inclusion in the present investigation. This grade predictor indicates to some degree the level of intelligence which has been postulated to be related to discipline behavior.

Validity estimates of the <u>College Qualification</u> <u>Test</u> made in previous studies<sup>1</sup> indicate correlation coefficients with the college grade criteria ranged from .34 to .66. The higher correlation coefficients are found in relation to the first term grades with gradual reduction during advanced terms. Also, it was noted that the larger correlation coefficients are related to communication skills; however, the range when related to the overall point average indicated first terms, .60; second term, .51; third term, .34. A reduction in correlation coefficient is probably because of the narrowed ability in later terms which result from the dropping of lower ability students. The above evidence of validity is in general agreement with stated validity data presented in the test manual<sup>2</sup>.

Paul L. Dressel, Irvin J. Lehmann, and Stanley O. Ikenberry, Critical Thinking, Attitudes, and Values in Higher Education: A Preliminary Report, East Lansing: Michigan State University, 1959.

<sup>2</sup> George K. Bennett, Marjorie G. Bennett, Winburn L. Wallace and Alexander G. Wesman, College Qualification Tests Manual, 1957, New York: The Psychological Corporation, 1957.

The College Qualification Tests, Manual, 1957<sup>1</sup> lists a reliability coefficient of .97 for males which was computed by split half method using even and odd test items. Ikenberry<sup>2</sup> applying the Kuder-Richardson formula 20 on basically the same restricted population presently under study listed a reliability coefficient of .93.

<u>Test of Critical Thinking, Form G</u>: The <u>Test of</u> <u>Critical Thinking, Form G</u> was developed by Dressel and Mayhew<sup>3</sup> as a part of the Cooperative Study of Evaluation in General Education. In this test emphasis was placed on the individual's problem solving ability. Abilities measured were recognition of problems, definition of problems, selection of information pertinent to the problems, recognition of assumptions, developing hypothesis, drawing conclusions and evaluation of the conclusions in life situations<sup>4</sup>.

George K. Bennett, Marjorie G. Bennett, Winburn L. Wallace and Alexander G. Wesman, College Qualification Tests Manual, 1957, New York: The Psychological Corporation, 1957.

<sup>2</sup>Stanley O. Ikenberry, "A Multivariate Analysis of The Relationship of Academic Aptitude, Social Background, Attitudes and Values to Collegiate Persistence". (Unpublished Thesis) Michigan State University, 1960.

<sup>3</sup>Paul L. Dressel and Lewis B. Mayhew, <u>General</u> <u>Education: Explorations in Evaluation</u>, Washington, D. C.: <u>American Council on Education</u>, 1954.

<sup>4</sup>Paul L. Dressel, Cooperative Study of Evaluation in General Education, "Instructor's Manual for the Test of Critical Thinking, Form G", The American Council on Education Committee on Measurement and Evaluation, 1953 (Mimeographed). Again grade point average was chosen as a criterion measure in the establishment of the test's validity. Also, as was the case with the <u>College Qualification Test</u> it has been noted that there is a great deal of variability in validity when related to specific courses or general areas of academic discipline; however, in the case of the <u>Test of Critical Thinking</u> the higher coefficients of correlation were with Natural Science rather than Communication Skills. When the <u>Test of Critical Thinking</u> is validated on the total grade point average by terms, the correlation coefficients were first term, .48; second term, .37; and, third term, .21<sup>1</sup>.

The manual for the <u>Test of Critical Thinking</u> reported reliability estimates for the instrument ranging from .71 to .89<sup>2</sup>. Ikenberry<sup>1</sup>, applying the Kuder-Richardson formula 20, found a correlation coefficient of .79 for the restricted population.

<u>Michigan State University Reading Test:</u> The <u>Michigan</u> <u>State University Reading Test</u> was developed by the Office of Evaluating Services of Michigan State University. The forty-five items in the revised form of the test were

lPaul L. Dressel, Director, Cooperative Study of Evaluation in General Education, "Instructor's Manual for the Test of Critical Thinking, Form G". The American Council on Education, Committee on Measurement and Evaluation, 1953, (Mimeographed).

<sup>&</sup>lt;sup>2</sup>Paul L. Dressel, Irvin J. Lehmann, and Stanley O. Ikenberry, Critical Thinking, Attitudes, and Values in Higher Education: A Preliminary Report, East Lansing: Michigan State University, 1959.

designed to measure the ability of students to comprehend textural thoughts which were representatives to materials found in several academic disciplines and were chosen on the basis of their emperical relationship to academic success.

The criterion measures for validation of the instrument was term grades. Correlation coefficients ranging from .17 to .67 have been reported<sup>1</sup>. The higher correlations were reported in relation to Communication Skills. Coefficients reported for males in relation to term grade point averages were first term, .57; second term. .48; and third term, .36.

The Michigan State University Office of Evaluation Services has reported reliability estimates on various occasions and these have been found to be approximately .80. Ikenberry<sup>2</sup>, applying the Kuder-Richardson formula 20 to the test scores of the restricted population under study, found a reliability coefficient of .79.

Differential Values Inventory: The Differential Values Inventory was developed in a dissertation study by

<sup>&</sup>lt;sup>1</sup>Paul L. Dressel, Director, Cooperative Study of Evaluation in General Education, "Instructor's Manual for the Test of Critical Thinking, Form G". The American Council on Education, Committee on Measurement and Evaluation, 1953, (Mimeographed).

<sup>&</sup>lt;sup>2</sup>Stanley O. Ikenberry, "A Multivariate Analysis of the Relationship of Academic Aptitude, Social Background, Attitudes and Values to Collegiate Persistence". (Unpublished Thesis) Michigan State University, 1960.

Richard Princel while at the University of Chicago. The interrelationships of character structure and values patterns have been a concern of social theorists for some time. Spindler<sup>2</sup> outlined two types of value patterns which Prince elected to use in the <u>Differential Values</u> <u>Inventory</u>, which are: 1) the "traditional" value pattern under which he included, puritan morality, individualism, work-success ethic, future-time orientation and achievement orientation; and 2) the "emergent" value pattern which includes sociability, conformity, relativistic moral attitudes, present-time orientation, and consideration for others.

Prince developed an instrument in which a "traditional" response was paired with "emergent" response on each item.

After Prince administered the instrument to two groups assumed to have differing value patterns, an item analysis was conducted to identify the items most related to the purposes of the instrument. The resulting instrument had sixty-four items.

Prince's study found a hierarchy of traditionalism

Richard Prince, "A Study of the Relationship Between Individual Values and Administrative Effectiveness in the School Situation", (Unpublished Dissertation) University of Chicago, 1957.

George Spindler, "Education in a Transforming American Culture", <u>Harvard Educational Review</u>, 25: pp. 156-163, Summer, 1953.

from the administration down to students in both perochial and public schools; however, he found that the perochial hierarchy was more traditional than the public school. He also noted that the older teachers were more traditional than the younger teachers<sup>1</sup>.

Dressel, Lehmann, and Ikenberry<sup>2</sup>, found that within the college population of their restricted study: 1) Catholic males were more traditional than either Protestants or Jews, 2) college students who have spent the major portion of their lives in the rural setting are more traditional in their values than those coming from urban settings, 3) college freshmen intending to do more than four years of academic work are more traditional in their values than those intending to do four or less years of academic work, and 4) the entering college freshmen of higher academic ability tend to be less traditional than those with lower academic ability.

These findings are in general agreement with current social science knowledge and theory; thus, it would appear that the instrument is measuring the character-

<sup>&</sup>lt;sup>1</sup>Richard Prince, "A Study of the Relationship Between Individual Values and Administrative Effectiveness in the School Situation", (Unpublished dissertation) University of Chicago, 1957, pp. 87-91.

<sup>&</sup>lt;sup>2</sup>Paul L. Dressel, Irvin J. Lehmann, and Stanley O. Ikenberry, <u>Critical Thinking</u>, <u>Attitudes and Values in</u> <u>Higher Education: A Preliminary Report</u>, <u>East Lansing</u>: <u>Michigan State University</u>, 1959.

istics similar to those stated by Prince in the purpose of the instrument.

Ikenberry<sup>1</sup> using "Kuder-Richardson formula 20" found an estimated reliability of .75 for the total restricted population in his study. The same population of the Ikenberry study was retested on the <u>Differential Value</u> <u>Inventory</u> at the end of one year. One would expect changes in values as a result of one year's college experience; however, the males had test and re-test reliability coefficients of .61.

<u>Collection of Data</u>: The data resulting from test instruments in this study were initially gathered by Evaluation Services of Michigan State University during the Fall Registration period, September 21-26, 1958. The instruments employed were as follows: <u>The College Qualification</u> <u>Test, The Test of Critical Thinking, Form G, The Michigan</u> <u>State University Reading Test, The Differential Values</u> <u>Inventory, and Biographical Data Sheet</u>. These materials were a portion of the instruments used in a research project directed at ascertaining changes in values and attitudes in individuals as a result of attending institutions of higher learning, which was supported by a contract with the

Istanley O. Ikenberry, "A Multivariant Analysis of The Relationship of Academic Aptitude, Social Background, Attitudes and Values to Collegiate Persistence", East Lansing, Michigan: School for Advanced Graduate Study. (Unpublished dissertation, 1960).

United States Office of Education, Department of Health, Education, and Welfare. The present investiation is based on the data for the restricted population of the research project carried on by Evaluation Services of Michigan State University.

The demographic data relating to metropolitan areas were gathered from the United States Census Bureau's Preliminary Report, 1960.

The behavioral data resulting in the classification of individuals into the various discipline groups were drawn from the Dean of Students' disciplinary file. This data covered the academic years of 1958-1959, 1959-1960, and 1960-1961.

A series of measurements and observations were gathered on five discipline categories and a non-discipline group making a total of six.

<u>Multiple Discriminant Function Analysis</u>: It is desirable in this type of study to differentiate statistically the several groups to a maximum degree in terms of intensity and direction. Also, it can be assumed that there are intercorrelations among the several variables used in this study; therefore, it would be advisable to use a technique that would identify basic, independent factors that account for possible group differences. In view of these needs, it was decided to use multiple discriminant function analysis.

The basic computational procedures used in the study were based on the methods presented in a doctoral dissertation by Bryan<sup>1</sup> and Ikenberry<sup>2</sup> and in a study for the United States Air Force by Bryan, Rulon and Tiedeman<sup>3</sup>; however, for the present study, the computations procedures were programmed to the digital computer by tying two existing programs together<sup>4</sup>. An illustration of the computational procedures including worksheets is to be found in the writings of Bryan, Rulon, and Tiedeman<sup>3</sup>.

The Multiple Discriminant Function Analysis technique is designed so that, if the variable weightings were used in an analysis of variance, it would maximize the ratio of

<sup>3</sup>David W. Tiedeman, Joseph G. Bryan, and Phillip J. Rulon, The Utility of the Airman Classification Test Battery for Assignment of Airmen to Eight Air Force Specialties, Cambridge; Educational Research Corporation. June 1951.

<sup>4</sup>Michigan State University Computer Laboratory, "K5-M, Correlations, Means, Standard Deviations and Variance; Card Imput"; and "M5-139, Solution of the Deterimental Equation  $|A - \lambda B| = 0$ ", East Lansing, Michigan: MISTIC Library Index, (Mimeographed), April, 1959.

<sup>&</sup>lt;sup>1</sup>Joseph G. Bryan, "A Method for the Exact Determination of the Characteristic Equation and Latent Vectors of a Matrix with Applications to the Discriminant Function for More than Two Groups". Cambridge: Harvard University Graduate School of Education. (Unpublished doctoral dissertation), 1950.

<sup>&</sup>lt;sup>2</sup>Stanley O. Ikenberry, "A Multivariate Analysis of the Relationship of Academic Aptitude, Social Background Attitudes and Values to Collegiate Persistence", East Lansing, Michigan: Michigan State University School for Advance Graduate Study (Unpublished doctoral dissertation), 1960.

between groups to within groups variance. Thus, the technique has the ability to detect differences that may well be missed when using other more common approaches.

The linear combinations which maximize the differences between groups and minimize the differences within groups are derived from the detrimental equation:

 $|A - \lambda W| V = 0$ 

Where:

A is the among group matrix
W is the within group matrix
λ is the latent roots of the system
V is the latent vectors or discriminant coefficients

The analysis procedure is initiated by the computing of the intercorrelation matrix, means, standard deviations, variances, and covariances for the eight variables in each of the seven groups and for the total group. A presently unclassified program for the digital computer was used to compute the within and among matrixes.

The among matrix elements are defined by the following formula:

$$a_{ij} = \sum_{g=1}^{7} \frac{(\sum X_i)}{p} \frac{(\sum X_j)}{p} \frac{(\sum X_j)}{(pg i)} \frac{(\sum X_j)}{(pg j)}$$

Where:

a is the element in the ith row and the ij jth column of the matrix A

is the subscript denoting individuals q is the subscript denoting groups R X, is the individual's score on the ith variable X, is an individual's score on the jth variable  $N_{g}$  is the number of individuals in the group The within matrix may be defined by the following

formula:

$$W_{ij} = \frac{7}{g} = 1 \qquad [p X_{ij} - \frac{X_i X_j}{N_g}]$$

Where:

p

- Wij is the element in the ith row and the jth column of the matrix W is the subscript denoting groups g
- is the subscript denoting individuals
- is the individual's score on the ith X, variable
- x<sub>1</sub> is the individual's score on the jth variable

The computed among and within matrixes were inserted in the MISTIC program "M5-139, Solution of Detrimental Equation  $|A - \lambda B| = 0^n$ , for the Michigan State University Integral Computer and solved. The solution of the detrimental equation produces several possible linear combinations of the variables.

The first linear combination of the detrimental equation maximizes the discriminant criterion which is the ratio among groups variance to within groups variance if weighted by the first linear combination. The second linear combination maximizes ratio of the residual among groups variance to residual within groups variance after the effects of the first combination has been removed. Subsequent linear combinations are residual ratios after the effects of the previous combinations have been removed and these combinations continue to be produced until the residual is reduced to a negligible amount. In this model, the number of meaningful linear combinations is limited to one less than the number of groups, providing the number of related variables is greater than the number of groups.

Assumptions of the Statistical Model: The first assumption is that the variables being measured on each individual are in fact related to differentiating between the various groups. The substantiation of the above assumption; however, depends on the result of the present or previous research. It should be again noted that the model will amplify slight differences which may have been undetected in previous research.

The second assumption is that the groups measured are mutually exclusive. Herein, a research of this type suffers the greatest difficulty. The classification of the individuals into the various groups of offenders is quite dependent on many other individually initiated reports, such as those of the police, Men's Division of

Student Affairs, and Residence Hall Advisors. Therefore, the assumption is made that independence of identification is being done consistently in all offices.

A third assumption is that the measures of the population under study are multivariate normal with equal variance and covariance matrixes. No method for determining the meeting of the third assumption was found. References were found in Ikenberry's<sup>1</sup> thesis wherein he reports a letter from David V. Tiedeman of Harvard University's College of Education stating that he felt that the expected distributions are not markedly effected by departures from multivariate normality. However, if the results are to be used for future classification, Tiedeman states that the normalcy of the discriminant scores should be tested in some manner. For this study the third assumption of normality and homogenity was not tested.

## SUMMARY

The population was defined as the entering freshmen males of Fall Term, 1958, excluding all: 1) students who had previously attended any college or university, 2) foreign students, 3) students whose test data were inadequate, 4) part-time students enrolled for fewer than twelve credits

<sup>&</sup>lt;sup>1</sup>Stanley O. Ikenberry, "A Multivariate Analysis of the Relationship of Academic Aptitude, Social Background, Attitudes and Values of Collegiate Persistence", East Lansing, Michigan: Michigan State University, School for Advance Graduate Studies, (Unpublished doctoral dissertation), 1960, p. 12.

of study, and 5) students not having a home address in a Standard Metropolitan Statistical Area.

The discipline groups from the restricted population were classified as, 1) Minor Misconduct, 2) Disorderly Conduct, 3) Alcohol and Other Behavior, 4) Theft and Burglary, and 5) Miscellaneous, in keeping with the records of the Dean of Students' Office. A sample of fifty nondisciplinary individuals were randomly selected from the restricted population after the discipline group was removed.

Instruments used in gathering were the following: 1) <u>Preliminary Report, 1960</u>, United States Census Bureau, 2) <u>Biographical Data Sheet</u>, Evaluation Services, 3) <u>The</u> <u>College Qualification Test</u>, 4) <u>The Test of Critical Thinking, Form G</u>, 5) <u>The Michigan State University Reading Test</u>, and 6) <u>The Differential Values Inventory</u>.

The data used in the study were collected during the 1958 fall registration period by the Michigan State University Evaluation Services Office with the exception of demographic information.

The statistical method used is the multiple discriminant function analysis. The computation was accomplished with the use of the Michigan State University computer.

# ANALYSIS OF DATA

The original data were grouped by discipline and non-discipline classification and product-moment intercorrelations were computed for the among and within groups for each of the variables used in the study<sup>1</sup>. To aid in understanding the basic relationships of the variables used in the study the intercorrelations between the variables for the total sample is presented in Table 4.1.

Ta	ble 4.1	Intercorr The Study	For The	Beta Tota	ieen A 1 Sar	nple	ar 1a)	les	Used	In
	Variabl	8	1	2	3	4	5	6	7	
1	Pop <b>ulat</b> Urban A	ion of rea								
2	Central Growth	C <b>ity</b> R <b>ate</b>	35							
3	Outside City Gr	Central owth Rate	.21	38						
4	Socio-e Backgro	conomic und	09	.11	06				•	
5	Differe Value I	ntial nventory	12	.01	14	.03				
6	Test of Thinkin	Critical g	.11	20	.09	10	.07			
7	Michiga versity	n State Un Reading T	i- est12	.14	.08	.06	.40	.02		
8	College ficatio	Qu <b>ali-</b> n T <b>est</b>	16	.06	.00	.29	.42	.03	•58	

<sup>1</sup>The among and within group matrixes are to be found in the appendix page 71. It will be noted in Table 4.1 that the growth rate of the central city is in a negative relationship to the urban area population; whereas, the suburban growth rate is in positive relationship to the urban area. Also, the central city growth rate is negatively related to the suburban growth rate. In general it can be said that the three urban area variables have little or no relationship to the other variables in the study.

Also, in Table 4.1 one will see that for this restricted population the socio-economic background has little or no relationship to any of the other variables with the possible exception of the College Qualification Test.

#### The Discriminant Functions

The solution of the detrimental equation  $|A-\lambda W| = 0$ , where  $\lambda$  is the latent roots or discriminant functions of the system, was necessary for the test of the hypothesis, which when stated in the null form is as follows:

> It is not possible to differentiate among groups of students classified as Minor Misconduct Behavior, Disorderly Conduct Behavior, Alcohol and other Delinquent Behavior, Theft and Burglary Behavior, Miscellaneous Delinquent Behavior and Non-delinquent Behavior via measures of Metropolitan Area, Socio-economic Background, Intellective Ability, and Value Systems.

Rao<sup>1</sup> presents a method of testing the statistical

1.9

<sup>&</sup>lt;sup>1</sup>C. Radharkrishna Rao, Advanced Statistical Methods in Biometric Research, New York: John Wiley and Sons, Inc., 1952, pp. 372-73.

significance of latent roots or discriminant functions among everal groups wherein multivariate data were used. The formula for testing the significance of the discriminant functions was as follows:

Chi-square = N -  $[1/2 (p - k) | g_e (1 - \lambda)]$ 

Where:

N = the total sample of individuals in the study p = the total number of variables k = the total number of groups  $\lambda$  = the discriminant function or latent roots of the system d.f = (p - k) -2 for  $\lambda_1$ , (p - k) -4 for  $\lambda_2$ , (p - k) -2N for  $\lambda_n$ 

The solutions to the above equations can be referred to a common table of Chi-square with the appropriate degrees of freedom.

The descending values of discriminant functions or 1 latent roots are reported in Table 4.2 along with the corresponding Chi-square values, degrees of freedom, and the related significance levels.

Tabl <b>e</b>	4.2 <u>1</u>	latent Roc 'reedom, a In Descenc	ots, <u>Chi-square</u> and <u>Statistical</u> ling Crder of L	<u>Values</u> Signifi atent Ro	<u>Degrees of</u> cance Levels ots
Order		Latent Root	Chi- square	d.f	Significance Level
1		.2187	19.636	12	•077
2		•1373	12.969	10	•320
3		.0710	7•792	8	• 556
4		.0248	1.960	6	•870
	Note:	The rema were of	aining latent r zero value .	roots of	the system

In Table 4.2 it should be noted that none of the latent roots or discriminant functions reach a level commonly accepted as significant.

Rao<sup>2</sup> describes the sum of the latent roots as being as estimation of the total among groups variance thus, the percentage accounted for by each of the roots can be computed. A listing of the percentages of variance accounted for by the latent roots are found in Table 4.3.

<sup>&</sup>lt;sup>1</sup>All of the latent roots or discriminant functions and the associated discriminant coefficients are to be found in the appendix page 72.

<sup>&</sup>lt;sup>2</sup>C. Radhakrishna Rao, <u>Advanced Statistical Methods</u> <u>in Piometric Research</u>, New York: John Wiley and Sons, Inc., p. 372.

Corresponding Fercentage of variance					
Order	Latent Root	Percentage of Variance			
1	.2187	48.4			
2	•1373	30 <b>.3</b>			
3	.0710	15.7			
¥	•0248	5.4			

It should be noted in Table 4.3 that the first two latent roots account for 78.7 percent of the variation and that the variation not accounted for by the roots listed is only .2 percent.

## Interpretation of the Discriminant Functions

Only the first two discriminant functions will be interpreted because of the relatively low significance of the other discriminant functions and the relatively high percentage of variance accounted for by the first two.

When there are but two discriminant functions they can best be described in two dimensional space. This description in two dimensional space can be graphically illustrated via weighing the means of each veriable for each group by the respective discriminant coefficients and summarizing the resulting products as a discriminant score; however, the above technique is of merit only if the units of measure in the several variates are similar.

Table 4.3 Lotent Roots in Descending Order and the

In the present study the variates are not similar in units of measure. It is, therefore, necessary to equalize the variates by weighting each discriminant coefficient by its respective standard deviation.

The resulting discriminant coefficients were further reduced for ease of handling by dividing all discriminant coefficients in each series by the smallest positive discriminant coefficient in that series. The discriminant coefficients weighted and reduced by the above procedure will be referred to as conventionalized discriminant coefficients. Only the discriminant coefficients of the first two functions were conventionalized. The conventionalized discriminant coefficients along with the standard deviations of the variables are listed in Table 4.4<sup>1</sup>.

Means and standard deviations for each of the variables for each group and the total group will be found in the appendix page 73 and 74.

Table 4.4 Conventionalized Discriminant Coefficients for Each of the Variables in the First Two Discrimi- nant Finctions and the Associated Standard Deviations						
Variable	Standard Deviation	First Disc. Function	Second Disc. Function			
Population of Urban Area	18.2069	-0.1832	16.0428			
Outside Central City Growth Rate	3.7870	-0.0412	1.0000			
Central City Growth Rate	6.0776	-0.5365	- 0.0442			
Socio-economic Background	4.3915	1.0000	6.1337			
College Qualification Test	<b>2.</b> 6918	-4.6155	14.2161			
<b>Test</b> of Critical Thinking	<b>2.</b> 5885	-1.3332	- 7.7270			
Michigan State University Reading Test	2.3298	3.2068	5.0017			
Differential Value Inventory	4 <b>.6</b> 8 <b>1</b> 5	-0.8257	-12.4106			

It will be noted in Table 4.4 that in the first and most powerful discriminant function only socio-economic background and the <u>Michigan State University Reading Test</u> are positively weighed leading to the conclusion that the function is best described as being related to a function of reading socio-economic background. In the second discriminant function, two intellective variables and three cultural variables are positively weighed leading to the conclusion that the second discriminant function can best be described as being related to an intellective-cultural function.

The discriminant scores for all of the groups on the first discriminant function were negative; therefore, before graphic representation the largest negative score value plus one was added to all of the group discriminant scores for the first function. The discriminant scores for the second discriminant function were rather high as a result of the heavy positive weighings and were reduced by a factor of one hundred for all groups for ease of graphic representation.

The graphic representation of the intersections of each group for the first two discriminant functions are to be found in Figure 4.1. In Figure 4.1 it will be noted that on the first discriminant function there are three group points. These three group points are, 1) theft and burglary, miscellaneous, and minor misconduct, 2) alcohol and other, and disorderly conduct, 3) non-delinquent. On the second discriminant function, there are also three group points which are, 1) minor miscenduct and nondelinquent, 2) miscellaneous, alcohol and other, and disorderly conduct, and 3) theft and burglary.





In two dimensional space there are five points of concentration for the six groups with alcohol and other and disorderly conduct being in close association.

Also, the non-delinquent group is well separated from the other groups in two dimensional space via occupying the highest discriminant score on the first discriminant function and the lowest discriminant score on the second discriminant function.

# <u>SUMMARY</u>

The null hypothesis was tested using a procedure set forth by Rao in <u>Advanced Statistical Methods in</u> <u>Piometric Research</u>. It was found that none of the latent roots or discriminant functions attained the normally accepted levels of significance; however, the first and most powerful discriminant function was at the seven percent level. Also, it was found that the first discriminant function accounted for 48.4 percent of the variance.

The first discriminant function coefficients were positively loaded only on the <u>Michigan State Reading Test</u> and the socio-economic variable; therefore, it is best described as a reading-socio-economic background function. The second discriminant function coefficients were positively loaded on two intellective and three cultural variables; therefore, it can best be described as an intellective-

cultural function.

The first and second discriminant functions which together account for 78.7 percent of the variance were described in two dimensional space. The two dimensional graphic representation indicated that there are five distinct groupings for the six experimental groups. The groups representing alcohol and other and disorderly conduct tend to occupy the same general space. It was noted that the non-delinquent group was distinctly separated from the other groups on the first discriminant function.
#### CHAPTER V

# THE SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS SUMMARY

The summary will be organized under three subheadings as follows: purpose, methodology, and findings.

## Purpose

The purpose of this study was to contribute to the basic understanding of the factors involved when certain individuals get themselves into college discipline situations. It was intended to make this contribution by determining whether or not it was possible to discriminate between the discipline potential of one individual and the non-discipline potential of another individual at the time of matriculation.

#### Methodology

Six basic postulates were developed which could be related to the college population. These postulates were used in the formation of a testable hypothesis.

The population studied was the male freshmen of the fall term registration of 1958 at Michigan State University. Exclusions from the basic group were all 1) students who had previously attended any college or university, 2) foreign students, 3) students whose test data were inadequate or unusable, 4) part-time students, and 5) students not having a home address in a Standard Metropolitan Statistical Area.

With the above restrictions, there remained a population of seven hundred ninety-five male freshmen. Review of the Dean of Students' records found fifty-six of the restricted population to have been involved in delinquent acts during the three-year period studied.

The delinquent group was classified into five categories according to the disciplinary acts for which they had been reported.

A group of fifty non-reported students from the remaining restricted population were randomly drawn, making a total of six groups for analysis.

The data gathered on each individual for analysis were 1) population of the metropolitan area, 2) growth rate of the central city, 3) growth rate outside the central city, 4) socio-economic index, 5) College Qualification Test score, 6) Test of Critical Thinking score, 7) Michigan State University Reading Test score, and 8) Differential Values Inventory score.

The data were analyzed by the discriminant function analysis technique which weights the variables so that if the weighted variable scores were analyzed by the analysis of variance technique the ratio of between groups to within groups would be maximized; thusly, detecting differences not noted by direct analysis of variance of raw data.

#### Findings

Statistical tests of the latent roots by the Chi-square method indicated that the first and most powerful of the latent roots would support the hypothesis at the .07 level of significance. The second latent root would support the hypothesis at the .32 level of significance. All of the remaining latent roots were of negligible statistical significance.

The first latent root is classified as a function of reading socio-economic background. The second latent root is classified as an intellectual-cultural function.

The first two latent roots when described graphically in two dimensional space indicate that the nondiscipline group is well separated from the other groups. There is, however, some confusion and confounding of the several discipline groupings when described in two dimensional space.

### CONCLUSIONS

In keeping with the, findings it is concluded that there tends to be a reading-socio-economic background variable functioning in differentiating male groups from Standard Metropolitan Statistical Areas who do become implicated in disciplinary situations from those who do not. This function is postively weighted by scores on the <u>Michigan State Reading Test</u> score and the socio-economic index. Of interest is the heavy negative weighting of the College Qualification Test score on this function which runs counter to the intellective postulate of the study.

The non-disciplinary group was well separated from the disciplinary groupings on the first discriminant function. Disorderly Conduct and Alcohol and Other was, however, confused in two dimensional space. Also Minor Misconduct, Theft and Burglary, and Miscellaneous groupings were confused on the first discriminant function. The implication being that it may well be possible to differentiate the non-disciplinary group from the disciplinary group; however, it would appear that there may be some difficulty in differentiating acts.

It was noted in the study that the use of alcohol in all but one case, had associated with it some other disciplinary act, thus, there was a difficulty of classifying the act that should get the research attention.

The impled conclusion is that the use of the alcohol may create a loss of restraint leading to involvement in other disciplinary acts.

#### RECOMMENDATIONS

It is recommended that future research in this area: 1) sample a wider range of Standard Metropolitan Statistical Areas, 2) sample a wider range of academic institutions, 3) sample larger numbers in each group, 4) sample a series of matriculating groups at each institution,

5) sample a longer time period.

It is recommended that there be established a method of classifying multiple offenses.

In addition it is recommended that a behavior questionnaire be developed and applied to the nondisciplinary group to ascertain their intensity of involvement, repetitive involvement, and currency of involvement in acts classified as disciplinary which have gone undetected. BIBLIOGRAPHY

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APPENDIX

Appendix A : Within Matrix

.10799600	01562087 .00201712	00272334 00200597 01396696	00556819 .00024957 00032357 .00377456	00314036 00003142 000044894 000044894	002654.04 00017536 00019082 00009187 .00001530	00192774 00010613 00014882 00006720 .00000571	01016619 00020331 00005103 00137701 .00137701 .0000368 .00071133
Appendix B	r Among MatrL	ĸ					
.00622883	00169513 .00012185	00042314 00009715 .00019962	00024.088 .00006247 000084.04	00019631 00001659 00005638 0000638 00006407	00013886 00002758 00005159 00004075 .00001805	00025453 .00001171 .00000013 00000013 .00000015 .00000015	00206301 .0000063 .00007972 .00010058 .00003797 .00004677 .00004677

APPENDIX C : Latent Roots Listed for the Variables	in Rank O	rder <sup>1</sup> and The	Associated V	<b>Jector Loadings<sup>2</sup></b>
Latent Roots	0.2187	0.1373	0.0710	0.02481
Variable				
Metropolitan Size	-0.0442	3.3368	2.5821	1.0000
Outside Central City Growth Rate	-0.0478	1.0000	-9.9212	1.6994
Inside Central City Growth Rate	-0.3877	-0.0275	-1.8516	-0.6482
Socio-economic Index	1.0000	5.2894	-1.8159	-0.8333
College Qualification Test	-7.5295	20.5493	-8.1124	0260.0-
Critical Thinking Test	-2.2618	-11.3047	1.0000	-2.5149
Michigan State University Reading Test	6. olth 7	8.1301	-1.6675	-3.0110
Differential Values Inventory	-0.7763	-10.0393	1.9611	1.7865
<pre>lonly the first four latent r .0098,.0000, .0000, and .000 <sup>2</sup>The vector loadings were con positive value in the list.</pre>	oots are 1 10. Nentionali	ncluded. The zed by dividi	later four l ng all values	latent roots were by the smallest

Appendix D : Means of the Variables by Groups

Variable	Miscellaneous	Minor Mis- conduct	Alcohol & Other	Th <b>eft</b> & Burg <b>la</b> ry	Non- Delinquent	Total Group	D1sorderly Conduct
Metropolitan Size	tr1・174	343.11	459.44	604.33	330.08	391.86	424.79
Inside Central City Growth Rate	11.29	11.55	17.94	8.67	18-46	15.39	12.29
Outside Central City Growth Rate	100.43	112.22	98.22	104.00	102.20	103.46	110.35
Socio-economic Index	50.57	40.44	50.38	42.33	49.12	18.31	19.29
College Qualification Test	2t <b>t .</b> 29	35.33	32.72	32.50	30.08	31.12	32.86
Critical Thinking Test	31.43	36.33	31.05	34.67	32.62	32.76	33.07
Michigan State Uni- versity Reading Test	26.29	26.73	26.61	26.67	27.30	26.86	26.07
Differential Values Inventory	102.57	137.11	120.83	119.00	132.98	123.23	117.86

Groups
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Var1able	Miscellaneous	Minor Mis- conduct	Alcohol & Other	Theft & Burglary	D <b>is</b> ord <b>erly</b> Conduc <b>t</b>	Non- Delinquent	Total Greup
Metropolitan Size	21.77	13.էկ	20.68	19.68	18.77	15.62	18.20
Inside Central City Growth Rate	1.88	1.97	3.62	1.53	2.29	22.1	0` • •
Outside Central City Crowth Rate	3.50	3.13	4.14	4.67	3.56	7.10	6.03
Socio-economic Index	<i>У</i> •У2	3.88	4.61	4.42	3.49	4.27	L.39
College Qualification Test	2.76	2.57	2.57	2.05	2.11	2.71,	2.69
Critical Thinking Test	62.2	2.24	2.68	2.76	2.75	2.50	<b>2.</b> 59
Michigun State Uni- versity Reading Test	1. <sup>9</sup> 9	2.60	2.23	0.38	2.14	2.43	2•3 <b>3</b>
Differential Values Inventory	<b>3.</b> 88	4.90	4.33	5.41	4.52	4.68	ц. 68

# ROOM USE ONLY

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