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A Comparative Study of Selected Personality Characteristics of Students Who Cheat and Do Not Cheat in an Academic Situation

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A COMPARATIVE STUDY OF SELECTED PERSONALITY CHARACTERISTICS OF STUDENTS WHO CHEAT AND DO NOT CHEAT IN AN ACADEMIC SITUATION

by

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This dissertation, submitted by Walter G. McIntire in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in the University of North Dakota, is hereby approved by the committee under whom the work has been done.

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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

The purpose of this study was to determine if there were significant personality differences between students who cheat in a given academic situation and students who do not cheat in the same situation. This was examined in terms of manifest needs, personality structure, and certain attitudes and values relative to the circumstances and setting in which the behavior occurred.

The sample studied consisted of 64 students, classified into 8 groups, from a class of 198 students enrolled in Psychology 213, Educational Psychology, at the University of North Dakota during the spring semester of the 1965-66 academic year.

The students were given the opportunity to grade their own hour examination and to report their grade on it, after it had been scored unknown to them by an IBM test scoring process. The eight groups were established according to cheating behavior, sex, and instructor.

Cheaters were defined as students whose self-reported scores on an hour examination were higher by two or more points than the grade reported for them on the same examination by a Data Processing examination grading system. Non-cheaters were defined as students whose two grades, self-reported and Data Processing reported, were identical.

Manifest needs, personality structure, and attitudes and values examined were measured respectively by the scales of the Edwards Personal Preference Schedule (EPPS), the Minnesota Counseling Inventory

(MCI), and a Semantic Differential (SD).

A three-way analysis of variance program and an IBM 1620 computer were utilized for analysis of the data. The major findings were that no significant differences between groups occurred on twenty of the scales of the instruments used -- the EPPS, MCI, and a SD. Of the scales yielding significant differences, the Achievement scale of the EPPS and the Mood scale of the MCI discriminated between cheaters and non-cheaters regardless of sex or instructor. Cheaters had a lower need for achievement as measured by the EPPS and a higher score on the Mood scale of the MCI, in the direction of pessimism.

A trait psychology dichotomization of individual behavior along a cheating and non-cheating continuum is incomplete and inappropriate for considering the dynamics of moral behavior.

There are two identifiable groups of students in the classroom, those who never consider cheating and those for whom cheating is an acceptable alternative depending on the situation. The discriminating variables between these groups are achievement need as measured by the EPPS and mood as measured by the MCI, non-cheaters having a higher need for achievement and a higher score (more pessimistic mood) on the M scale than cheaters.

CHAPTER I

INTRODUCTION

A constantly recurring phenomenon on the American college campus has been the discovery of widespread cheating in some form. Within the past decade evidence of major cheating has been discovered at two of the nation's three large military service academies, as well as at several other institutions of higher education.

Cheating and its control have tended to be of constant concern to educators at all levels. Many articles dealing with the problem of cheating have been published in both professional and popular literature. A few empirical studies have been reported which seem to support the idea that, given the opportunity, large numbers and percentages of students will cheat. Canning (1956) and Black (1962) are among those who reported frequency of cheating behavior in different situations. However, little is known about the personality characteristics of persons who do and do not cheat in a given situation.

It is this area of personality structure which this study explores. Wrightsman (1959) stated that "the usual method of relating rather obvious characteristics such as grade average, IQ, and fraternity membership to extent of cheating needs to be supplanted by an approach which focuses on underlying needs and the pressures of the situation."

This study, then, is not so much concerned with how much and

who cheats, but with the psychological characteristics of cheaters and non-cheaters in terms of manifest needs, personality structure, and certain attitudes of the subjects relative to the situation in which the cheating or non-cheating behavior occurred.

Statement of the Problem

The purpose of this study is to determine if significant differences exist, in terms of manifest needs, as measured by the Edwards Personal Preference Schedule (EPPS); attitudes, as measured by a Semantic Differential (SD); and personality structure, as measured by the Minnesota Counseling Inventory (MCI), between people who cheat in a given situation and those who do not cheat.

These specific questions were investigated:

1. Are there significant differences on any of the fifteen scales of the Edwards Personal Preference Schedule between persons cheating and those not cheating in the same situation?
2. Are there significant differences in attitudes and values as measured by a Semantic Differential between persons cheating and those not cheating in the same situation?
3. Are there significant differences on any of the seven scales of the Minnesota Counseling Inventory between persons cheating and those not cheating in the same situation?

Definition of Terms

1. Cheater - A student who reports a score on an hour examination which is higher by two or more points than the score on the same examination as reported by Data Processing.

2. Non-cheater - A student who reports his grade on an hour examination as identical to the score reported for him by Data Processing.
3. Manifest Needs - Manifest needs are defined as the needs measured by the Edwards Personal Preference Schedule.
4. Attitudes - Attitudes are defined as those concepts rated on a Semantic Differential developed for this study.
5. Personality Structure - Personality structure is defined as those personality variables measured by the Minnesota Counseling Inventory.

Organization of the Study

The remainder of this dissertation is organized in the following manner. Chapter I continues with a review of the literature related to the present study. The description of the population, instruments, and research procedures employed in this study is presented in Chapter II. The results are reported in Chapter III. A discussion of the conclusions and the implications of this study is presented in Chapter IV.

REVIEW OF THE RELATED LITERATURE

The literature concerning cheating in school situations has tended to fall into four distinct types. The most common has been speculative or contemplative studies in which personal experience and searching deliberation were drawn upon to find causes or potential reasons for cheating behavior on the part of students. Secondly, there have been some studies in which incidence of cheating has been examined and reported in different physical situations. The pros and cons of honor systems have been discussed and supported or refuted with

studies in which change in amount of cheating was a variable. In some of these instances comparisons have been made between incidence of cheating in different types of situations, or with different kinds of tests, or between incidence of cheating before and after the installation or discontinuance of an honor system. Thirdly, there have been a few studies which relate cheating behavior to psycho-social characteristics of the individuals involved. The fourth approach to cheating has been in the context of development of morality as an aspect of total personality development.

Speculative Studies

Speculative studies have tended to discuss such ideas as where to place the blame for cheating, what might be done to control or stop it, and whether the number of incidents of cheating is increasing. Shirk and Hoffman (1961b) felt that academic dishonesty is a function of the total climate of the educational institution, and that if honor is expected from college students by administrators, honor will be received. They also propose the ideal that if administrators hold and cultivate integrity as important, a system will develop which will be conducive to honor. Honor, in their scheme, would seem to preclude cheating. Trabue (1962) discussed four possible reasons why students cheat: (1) the work expected of the student is too difficult for him, (2) the student cheats to meet pressure for good grades from outside sources such as parents, (3) the work is too easy and is non-challenging, and (4) the work is meaningless. Henrichs (1958) reported that the changing mores of students concerning cheating on examinations left cheating less frowned on than many adults would believe.

Brubacher and Rudy (1958), in their history of American higher education, commented that the whole area of discipline is complicated in the American college by the existence of aspects of both secondary schools and universities within the same institution. They stated that "at the great American universities, one could find both callow adolescents and mature graduate students on the same campus, sometimes in the same classroom. Under these circumstances, it was a serious question whether any uniform system of discipline could be applied indiscriminately." Cheating here would appear to be an aspect of student life related to the overall disciplinary situation.

Shirk and Hoffman (1961a) discussed a "cheating classroom atmosphere" to which both students and teachers contribute. They further commented that the oft-found idea that a student is defined by his grades contributes to the amount and quality of the integrity displayed by students. Weldon (1966) reported that cheating practices reveal that many teachers are using totalitarian teaching and testing procedures which thwart the reflective abilities needed in our democratic society.

Odell (1948) interviewed a group of college students, two-thirds of whom were G.I.s, relative to cheating in college. They justified cribbing on the basis of the severe competition they had to face. Also, they laid the responsibility for cheating, not on the students, but on the colleges themselves.

Barclay (1958) and Johnson (1943) suggested that pressure for high marks from teachers and parents is causal. Howells (1938) placed the blame for cheating on the examinations themselves. Atkins and Atkins (1936) felt that the necessity of making good grades is the

cause. Canning (1956) proposed that cheating varies with the attitudes held toward the procedures used in examinations. Ludeman (1948) reported two predominate reasons for cheating: to get better marks and because others do it. Becker (1963) reported on changing moral values of students with relevance to behavior.

Stern (1962) stated that colleges are training grounds for the nation's leaders and that cheaters should be removed so they could not go on to reach positions of authority.

Demographic Studies

Christensen (1948), in a study at Brigham Young University, reported up to 81% of students cheating in some situations. Barclay (1958) reported that a study of classroom dishonesty done at the University of Wisconsin revealed that 31% of students admitted giving or receiving help on tests.

Atkins and Atkins (1936) reported that "the honesty of a group of students seems to be in the control of the instructor." Their sample averaged 28.3 chances for alterations of answers and utilized 2.45 or 8.7% of the chances. Of those students who were prospective teachers, 56 (50.9%) made from 1 to 14 alterations. Twenty-four (42.9%) of the students made 1 or 2 alterations and 4 students (7%) made more than 10. Atkins and Atkins concluded that the number of dishonest students and the amount of individual dishonesty increased with the ease of dishonesty.

Henrichs (1958) questioned students about their behavior and found that 57% of all students questioned admitted to cheating "sometimes." Seventy-five per cent of seniors in the sample had cheated at some time during their college career.

Most researchers reported that bright students tend to cheat as often as pupils of lesser ability, although to a lesser extent. Howells (1938) reported that cheating correlates -.08 with ability. Gross (1946), Atkins and Atkins (1936), and Johnson (1943) all claimed that IQ's of non-cheaters are higher than those of cheaters. Hoff (1940) reported correlations of from .311 to .324 between cheating and intelligence.

Canning (1956), Hoff (1940), and Ragosin (1951) found no sex difference in frequency of cheating. Black (1962) reported no differences in terms of sex, age, or class standing in frequency or amount of cheating. He also reported that several ordained ministers were in the group he studied, and that they were just as likely as the laymen in the group to falsify marks.

Gross and McNally (1950) found that patterns in cheating habits were inconsistent. This is in line with Murphy and Newcomb's (1937, p. 662) comment on reviewing the Hartshorne and May studies: "Cheating in one situation gives almost no information at all as the likelihood that a child will cheat in another . . . character is found to be a much less important variable than the situation."

Atkins and Atkins (1936) reported that the amount of cheating is in direct proportion to the ease of cheating. Hoff (1940) found that pupils tended to cheat less and be more accurate when checking their neighbor's paper than their own. Kruger (1947) found that once pupils were permitted to cheat they cheated all the more. He also noted that if students knew their honor was at stake they showed a definite trend toward more accurate checking, even if it meant a lower score.

A study by Campbell (1935) at the University of Texas showed

that following the abandonment of the honor system, the number of students charged with dishonesty (previously by faculty or students, now only by faculty) did not change significantly. Campbell studied classroom honesty in different situations, including the use of spies. After studying the behavior of over 400 students he found that the amount of classroom dishonesty observed, measured, or admitted was greater among the students working under the proctor system than among similar students working under the honor system. In comparable situations 26% of honor-plan students cheated, 40% of proctor-plan students cheated.

Honor Systems

Brubacher and Rudy (1958) discussed the advent, flowering, and the present status of honor systems in higher education at some length. Honor systems have been used in numerous institutions with varying degrees of success in dealing with cheating.

Glicksberg (1957) reported that a study made of students at Brooklyn College indicates that it is rare to find a student who has not engaged in the practice of cheating in one form or another. The impersonal atmosphere to be found in colleges and the competitive pressure and undue emphasis placed on marks are other important reasons given for cheating. Wolin and Schaar (1965) attribute much of the recent Berkeley problem to similar causes. They appear to feel that huge enrollments and overcrowded classrooms with overworked instructors tend to intensify the impulse to cheat, and to increase the probability of not being detected. Undergraduate classes as they exist today in most institutions seem to preclude the possibility of friendly, personal relationships developing between students and teachers. A few of the students studied by Glicksberg felt that cheating was not worth

the damage to an individual's self-esteem. The majority, however, insisted that one must do as others do. They were willing to run the calculated risk of being caught at cheating. They seemed to reason that, if society is "corrupt," why should college students remain absolutely moral?

At Brooklyn College Glicksberg reported that if the students had their way, they would put an end to cheating and institute an honor system on an experimental basis. At the time of publication of Glicksberg's report the Dean of Students at Brooklyn College was seeking to institute an honor system in some classes.

An approach to student responsibility appears to develop from the work of Van Pool (1954). He listed 22 high schools ranging in enrollment from 65 to 2600 students which had honor system study halls. He claims that no faculty can watch effectively every movement of every student all the time. Most schools are so administered that the recognition of honesty as a human trait is seldom in evidence. "Cops and robbers" appeared to him to be a grim game in the modern secondary school, to say nothing of colleges and graduate schools. Constant vigilance, according to Van Pool, gives a student the impression that he is not to be trusted. Under these conditions students then cheat in order to show that it can be done in spite of "guards." A great increase in the number of secondary schools which contribute to their students' moral and ethical development by instituting honor systems, at least in study halls, is very desirable according to Van Pool.

Dahney (1966) reported that college cheating can be stopped and that honor codes can help. Morris (1957) believed that the college freshman exposed to an honor code before entering college has a

definite advantage over one who has not had a similar opportunity. Bowers (1966) felt that less cheating occurs where honor systems are employed.

Green took a slightly different position:

> Every teacher must ask himself what he is doing to help develop the conscience of his students. The student must be given the opportunity of self-policing - the opportunity to develop his conscience along with his intellect. Students in some schools take examinations in a prison-like atmosphere. Some students will rise to the competitive situation and will spend what might have been worthwhile study hours figuring out how to outwit their instructors. An alternative to the police method is an honest and sincere relationship between teacher and student. The teacher is as responsible for developing this inner urge for honesty as for teaching the subject matter. (1959, p. 37)

Louis T. Benezet, President of Colorado College, wrote that

> Grading is the chief villain behind the quiet scandal of pervasive college cheating. Along with the minimizing of grades, or even without it, installation of an honor principle is a national must if college education is to grow out of its swaddling clothes. (1961, p. 64)

There are colleges in the United States which have honor systems. Some of these are Haverford College, Mills College, the University of Virginia, and West Point.

Although 99 cadets were dismissed from West Point in 1951 for cheating, there was no consideration of discontinuing the honor code, according to U. S. News (1951). It had worked well in the past, and the scandal was apparently taken as indicative of the basic worth of the system. Following the 1967 scandal at the Air Force Academy, Colonel W. W. Posvar, Chairman of the Academy's Political Science Department, said in Newsweek (1967), that "future Air Force officers will be making life-and-death decisions, possibly including the use of nuclear weapons, and the most reliable men will be the self-disciplined ones--not the ones who need outside authority to tell them what to do."

Ellis (1966) examined honor systems and reported that they provide a danerously weak foundation for orderly living and that they don't prepare individuals for our society with its strong governmental control.

The little evidence of an empirical nature which exists relative to the worth and practicality of honor systems is not decisive in supporting or refuting the idea. Christensen (1948) studied and measured cheating over a six year period at Brigham Young University. This study began one year before an honor system was established and continued five years after the inauguration of the system. A total of 299 students in five sociology classes were used in the experiment over the six year period. After examination papers were collected, duplicates were made and scored. The unmarked original papers were then corrected by the students at the next session. Before the honor system was started 81% of the students were cheating. At the end of five years of the honor system this was reduced to 30%. The average magnitude of cheating was reduced from 12.3 points to 8.2 points. Students answered a questionnaire designed to test the relationship between promised behavior and actual behavior. It was found that 33% cheated after promising that they would not, 12% cheated as they promised they would, 52% did not lie and did not cheat, and 3% promised to cheat but did not.

Canning (1946) also did his study at Brigham Young University and found that if students were misgraded on an examination, more of those who were undergraded would request a correction than those who were graded too high. Nearly five times as many students who were undergraded asked that the error be corrected as did those who were

graded too high. Honesty, or cheating, as measured in this way is associated with the direction of the error.

The Texas study (Campbell, 1935) also indicated that it was possible under the proctor plan to proctor so efficiently that the amount of cheating was materially reduced. The proximity of the instructor during an examination was always found to be accompanied by a reduction in the amount of cheating. Other evidence suggested that the fairness of the questions asked by the instructor was an important factor in determining the amount of cheating. The students who cheated were found to be slightly younger, slightly less intelligent, and slightly less scholarly than those who did not cheat. Schulz (1967) pointed out that cheating can be discouraged with adequate supervision and less stress on grades.

Empirical Studies

Gross (1946) examined the influence of group and individual competition and found no evidence to support either one as a source of motivation for cheating. Johnson (1943) examined social factors related to cheating and found that members of youth groups, such as Boy Scouts, tended to cheat more than non-members, that children from broken homes tended to cheat more than children from more normal homes, and that children with working mothers tended to cheat less than other children. He also found that the tendency to cheat seemed to be in proportion to the number of children in the family, and this depended on the number of older siblings.

Anderson (1957) reported attitudinal studies which indicated that students sanction certain types of cheating to differing extents. Hendricks (1958) reported that 13% of students questioned think a

cheater is "basically dishonest," 31% are uncertain, and 53% are "quite sure that one who cheats is not to be thought of as possessing such a trait." Bowers (1966) reported that most students voice strong disapproval of cheating on moral grounds. He also reported that students with poor study habits and low grades were more likely to cheat.

Keehn (1956) hypothesized that cheating behavior in school children would be more closely related to either introversion alone or to extroversion and neuroticism than to neuroticism alone, using Eysencks' definitions. He found it impossible to tell from the data available whether extroversion alone was related to cheating, because nearly all high extroversion scoring students scored high on neuroticism. Differences in cheating between high and low neurotic groups were not significant, but those students who scored low on both the neuroticism and extroversion scales cheated significantly less frequently than those who scored high on both of those measures.

Canning (1956) reported no differentiations between cheaters and non-cheaters on any of the scales of the Minnesota Multiphasic Personality Inventory.

Patterson (1966) reported in a study done at Colorado State University that cheaters tended to have a higher social self-concept following the cheating experience than non-cheaters, based on the Tennessee Self-Concept Scale. Cheaters tended to be more defensive than non-cheaters following the cheating incident as evidenced by a greater lie score on the Tennessee Scale, and the cheaters got significantly lower final grades in the course than the non-cheaters.

Patterson also reported no significant differences between cheaters and non-cheaters on any of the sixteen scales of the Sixteen Personality Factor Questionnaire.

He felt that "cheating is a combination of situational and personal needs rather than being a personality correlate."

Classical Studies

Freud (1923, 1933), MacKinnon (1938), Piaget (1948), Hartshorne and May (1930), Kohlberg (1963), and Brown (1965) are among the individuals who have made major contributions in the area of the development of morality.

Brown, in the study previously cited, has perhaps best integrated the thinking of these and others into a conceptual framework for morality development. He presented the following five propositions about the development of morality in the individual:

1. A morality is a system of rules for distinguishing right conduct from wrong conduct and moralities are always evolving.
2. Individual morality develops in three dimensions: knowledge, conduct, and feeling. Four kinds of learning seem to be involved: Cognitive learning of concepts, instrumental learning where behavior is shaped by selective reinforcement, imitation, and classical conditioning of primarily emotional responses. Moral knowledge involves primarily cognitive learning, moral conduct depends on instrumental conditioning and imitation, and feeling depends on classical conditioning.
3. The three dimensions of morality are not based on the same foundations. Moral knowledge appears to be rules for evaluating conduct, not generating conduct. Con-

duct is based on a multiplicity of values, some of which at times are more significant to the individual than moral values. This implies that to bring conduct under the domination of morality is the basic struggle for acquisition of character. Moral feeling is the same as the Freudian superego to Brown.

4. The morality of a child is not merely the reflection of adult morality. It is based on different generalizations.

5. The process of moralization need not be complete acceptance of adult morality. An individual's moral theory evolves out of his own collection of moral data.

This concept of an evolving, individual morality is supported by the work of both Kohlberg (1964) and Frank (1966).

Kohlberg, in his review of the work in development of moral character, supported the complexity of basic psychological processes of internalization of morality when he dealt with moral conduct, moral judgement, and moral emotion as separate areas of moral development.

Frank reviewed the literature in the area of the development of philosophical and moral concepts. He expressed the idea of an individual morality, changing as the situation demands, rather than a fixed, absolute morality. Behavior is complex in terms of antecedents, and significant variables other than moral values often play important roles in determining behavior which may overtly appear as only occurring on a moral-immoral continuum.

Brown's propositions would appear to indicate that we cannot

examine conduct, in the moral realm at least, in a context of trait descriptions of individual behavior, but must turn to a more complex analysis in which other than moral factors may be decisive in determining individual behavior in a given situation.

CHAPTER II

METHOD AND PROCEDURE

Chapter II includes a description of the population used in this study, descriptions of the standardized tests and procedures used in the study, the procedures used to collect the data, and the statistical treatment of the data.

Population

The original subjects of this study were the 198 sophomores, juniors, and seniors enrolled in Psychology 213, Educational Psychology, at the University of North Dakota during the second semester of the 1965-66 academic year.

Procedure

During the first meeting of the Psychology 213 class in February of 1966 it was announced that all members of the class would be expected to participate in psychological testing as a requirement for completion of the course. This is in line with policy of the Psychology Department of the University of North Dakota which expects this participation of students in introductory psychology courses. It was announced that this testing was one part of a research study being conducted on campus by the department.

On March 3 and 4 each student was given a Semantic Differential to complete during a class period. This was administered with the

explanation that it was part of a study to measure the attitudes and values of students in relation to the concepts presented (Appendix A).

On March 16 an hour examination of 50 four-choice, multiple-choice questions was administered to the class. It was the second hour examination of the semester and was of the same format as the first. Examination procedures were identical to those of the first examination.

The examination was administered and proctored by the investigator and one other graduate teaching assistant. The test was designed, as were all the course tests, to be answered on IBM cards which could be machine scored.

After the examination was underway, and before any student had completed his examination, the course instructor walked into the room, conferred quietly with the proctors, and remained in the room. The investigator, one of the proctors, announced that due to a backlog of work in the Data Processing Center caused by the closing of the University for two days by the recent blizzard, and the rush of work as many instructors tried to test ahead of the March 21 deadline for reporting academic deficiencies, Data Processing could not score this examination before the weekend. It is the policy of the Psychology Department to immediately score tests and to return grades at the next meeting of the class. It was announced that because of the number of tests and the time factor involved in reporting deficiencies to the registrar's office, it would be necessary to ask the class to cooperate in grading the examinations. Each student would score his own examination in his recitation section on March 17 or 18.

Immediately following the completion of the examination the IBM cards were taken to Data Processing, machine scored, and returned to

the recitation instructors for sorting into discussion sections.

On Thursday and Friday, March 17 and 18, each student was handed a copy of the examination, his answer card, and a 3" x 5" file card as he entered the classroom for his recitation section meeting. The students were asked to correct their own cards as the instructor went over the test and to write their name and the number they got correct on the 3" x 5" card. They were told that as they left the room they were to pass in only the file card with their name and score, and to keep the copy of the examination and their answer card for their own use.

Each student's self-reported score was then compared with his machine-reported score and three groups were established. They were: those whose self-reported and machine-reported scores were identical, those whose two grades were discrepant by one point, and those whose self-reported and machine-reported scores were discrepant (high) by two or more points.

A discrepancy of two or more points higher on the self-scored test than on the machine-scored report was taken as evidence of cheating.

To insure that no student's grade would suffer from his participation in this study, the grades in the course were based on a distribution agreed to by the instructors prior to the examination involving the cheating opportunity. All grades were based on a total number of points in the course. All exams were machine scored and the investigator was the only person aware of the identities of the students in the various categories. No student's final grade was affected, positively or negatively, by his behavior in the experimental incident.

During the week of April 18-22 provisions were made for all students to fulfill the course requirement of participation in the psychological testing. The Edwards Personal Preference Schedule and the Minnesota Counseling Inventory were administered to all students.

Sample

Of the 198 students enrolled in Psychology 213, 10 students did not take the examination administered March 16, 18 were not present to score their examination March 17 or 18, 7 dropped the course before the administration of the standardized testing, 3 students got grades of 49 or 50 which precluded the possibility that they could cheat as defined for this study, and 1 student was excused from the standardized testing. Twenty-five students reported grades discrepant with those reported by Data Processing by 1 point. No student reported his grade as lower than the Data Processing reported grade. This left 134 students with complete data available for study.

The 134 students remaining in the study were divided into 8 groups according to sex, instructor, and cheating or non-cheating behavior. These groups varied in size from 8 to 33 members. In order to equalize group sizes for analysis purposes, 8 subjects were randomly selected from each of the 8 groups. This created 8 groups of 8 members for a sample of 64 subjects whose data were analyzed and presented as the participating sample.

Analysis of Data

The raw scores on the 36 variables of the Semantic Differential, Minnesota Counseling Inventory, and Edwards Personal Preference Schedule were then recorded on numerical analysis sheets for each of the 64 sub-

jects of the sample. These data were then key-punched on IBM cards for analysis by an IBM 1620 computer available at the University of North Dakota Computer Center. A three-way analysis of variance program available at the computer center was utilized for analysis of the data.

Instruments

The tests and procedures used to collect data for the research study were the Minnesota Counseling Inventory, the Edwards Personal Preference Schedule, and a Semantic Differential constructed by the investigator.

Edwards Personal Preference Schedule (EPPS).--The EPPS was designed to assess the strength of various needs of the individual. It was developed from the manifest need system formulated by H. A. Murray and his associates at the Harvard Psychological Clinic. The seemingly unique contribution of the EPPS to the area of personality assessment was indicated by Barron (1959, p. 47) in his review in the Fifth Mental Measurements Yearbook (Buros, 1959), ". . . until the development of the EPPS, no really thoroughgoing attempt had ever been made to measure most of the manifest needs in the Murray system by the inventory method."

Fifteen needs selected from Murray's system are purported to be measured by the EPPS. Items representing these needs are offered in pairs to the person taking the test. The inventory has 210 different pairs of forced-choice items which represent items from each of the fifteen needs. These fifteen scales are paired off twice against items from the other fourteen. In addition, a consistency score is derived by repeating fifteen pairs in identical form. The scores obtained for each scale can be converted to percentile ranks for comparison with an

appropriate norm group.

A complete description of the manifest needs associated with each of the fifteen EPPS variables as described by Edwards in the manual for the EPPS is presented in Appendix B. The fifteen needs and their descriptions as abbreviated by Anastasi (1961, p. 516) are as follows:

> Achievement - to do one's best, to accomplish something very difficult or very significant.
>
> Deference - to let others make decisions, to conform to what is expected of one.
>
> Order - to have regular times and ways for doing things, to keep things neat and well-organized.
>
> Exhibition - to be the center of attention, to say witty things or talk about personal achievements.
>
> Autonomy - to be independent of others in making decisions, to avoid responsibilities and obligations.
>
> Affiliation - to be loyal, to participate in friendly groups, to share or to do things with friends.
>
> Intraception - to analyze one's motives and feelings, to observe and understand the feelings of others.
>
> Succorance - to receive help or affection from others, to have others be sympathetic and understanding.
>
> Dominance - to persuade and influence others, to supervise others, to be regarded as a leader.
>
> Abasement - to feel guilty when one has done wrong, to accept blame, to feel timid or inferior.
>
> Nurturance - to help friends or others in trouble, to forgive others, to be generous with others.
>
> Change - to do new and different things, to meet new people, to travel, to take up new fads and fashions.
>
> Endurance - to keep at a job until it is finished, to avoid being interrupted while hard at work.
>
> Heterosexuality - to go out with or be in love with one of the opposite sex, to tell or listen to sex jokes.
>
> Aggression - to attack contrary points of view, to become angry, to make fun of others or tell them off.

Minnesota Counseling Inventory (MCI).--The MCI was designed to give information about the personality dynamics, personality structure, and personality problems of young people. It was derived from the Minnesota Multiphasic Personality Inventory and the Minnesota Personality Scale by Berdie and Layton (1957).

The MCI consists of 355 items in the form of statements which the student responds to in terms of whether it is true or false as applied to himself. Forty-four of the items are not scored for any scale and make up a pool of items for possible future development of new scales.

The MCI yields nine scores, including a Question Score and a Validity Score. The Question Score is the number of items left blank, which, if sufficiently high, allows one to question the validity of the ensuing profile. The Validity Score (V) purports to represent the degree of defensiveness of the student. High V scores are obtained by students choosing socially acceptable responses. The other seven scales of the MCI are as follows:

> Family Relationships - refers to the relationship between the student and his family. Low scoring students are said to be more likely to have friendly relationships than those scoring high.
>
> Social Relationships - refers to the nature of the student's relationships with others. Low scores are more often characteristic of socially mature individuals, high scores of students who are socially inept or under-socialized.
>
> Emotional Stability - refers to the emotional stability of individual students. Low scores seem to sharacterize students who are happy, do not worry consistently, and tend to be calm and relaxed. High scoring students are more apt to be unhappy, irritable, and appear tense.
>
> Conformity - scores on this scale indicate the kind of adjustment a student makes in situations requiring responsible or conforming behavior. Low scores are usually indicative of students who are usually reliable

and responsible and who conform to rules and codes of behavior even when they do not agree with them. Students scoring high on the C scale may be individualistic and self-centered, irresponsible, impulsive, and rebellious.

Adjustment to Reality (R) - refers to the student's way of dealing with reality. Students scoring low on the R scale approach threatening situations so as to master them. Students scoring high on this scale withdraw from situations, and are usually secretive, withdrawn, shy, and reveal little emotion.

Mood - refers to a student's usual mood or emotional state. Low scores characterize students with good morale, who are cheerful most of the time. High scores characterize students who lack self-confidence and seem depressed most of the time.

Leadership - reflects personality characteristics reflecting leadership behavior. Low scores indicate leadership skills and knowing how to work with others. High scoring students are often inept in social situations and avoid participation in groups.

Semantic Differential (SD).--The SD is a method of measuring the psychological meaning of concepts. It is not a standardized test. It is a procedure that was developed by Osgood (1957). A SD consists of a number of scales, each of which is a bipolar adjective pair, and a set of concepts to be rated. The SD constructed for this investigation (see Appendix A) uses a seven-point rating scale for each bipolar adjective pair. Osgood found that adjective pairs fall into three primary types. He has labeled these types Evaluative, Potency, and Activity depending on how the adjectives can best be described.

The seven concepts chosen for evaluation in this study were as follows:

Teaching

Studying

Myself

Examinations

Typical Student

College Instructors

Honesty

Each of the above concepts was rated on the following nine bipolar adjective pairs:

good - - - - - - - - - - - bad

kind - - - - - - - - - - - cruel

unimportant - - - - - - - important

pleasurable - - - - - - - painful

foolish - - - - - - - - - wise

unsuccessful - - - - - - - successful

reputable - - - - - - - disreputable

strong - - - - - - - - - - weak

free - - - - - - - - - - - restricted

Of the nine adjective pairs selected for the SD used in this study, seven were of the Evaluative category and two were of the Potency type. These adjective pairs were selected from lists provided by Osgood (1957). The concepts were presented in the individual test booklets in random order so that no test set sequence was established in the sample.

CHAPTER III

RESULTS

Three factors appeared to be of major importance in determining personality characteristics of cheaters and non-cheaters. First was the behavior itself, the cheating or non-cheating alternative. Secondly, although Hoff (1940), Canning (1946), Ragosin (1951), and Black (1962) reported no sex differences in frequency of cheating, the evidence was not conclusive that sex was not a major variable when personality characteristics of the individuals were considered. Thirdly, the conclusion of Hartshorne and May (1930), that situation is a more significant variable than character in moral behavior, has become very accepted in psychology. Therefore, the instructor factor was included as it was considered the variable most representative of a situational factor.

An analysis of variance design allowed for not only review of the factor individually but for discovery and consideration of interactions. Therefore, a three-way analysis of variance technique was utilized.

The Edwards Personal Preference Schedule (EPPS), Minnesota Counseling Inventory (MCI), and the Semantic Differential (SD), provided data for each subject on 36 scales. A three-way analysis of variance program and an IBM 1620 computer available at the University of North Dakota Computer Center were used for analysis of each of the 36 scales.

On 20 of the 36 scales no significant F ratios were found. Summaries of the analysis of variance for these scales are included in Appendix C. Discussed below are the 16 scales yielding significant F ratios at the .05 level.

Behavior Differences

Main Effects.--Main effect differences on the behavior dimension were found on the M scale of the MCI and the Ach scale of the EPPS (see Table 1).

TABLE 1

SUMMARY OF ANALYSIS OF VARIANCE OF SCALES YIELDING SIGNIFICANT MAIN EFFECTS ON THE BEHAVIOR DIMENSION

MCI - M Scale

Source of Variance	df	MS	F
Instructor (Ins)	1	.39	.018
Sex	1	87.89	4.062*
Behavior (Beh)	1	107.64	4.975*
Ins x Sex	1	17.02	.787
Ins x Beh	1	11.39	.527
Sex x Beh	1	34.52	1.595
Ins x Sex x Beh	1	37.51	1.734
Error	56	21.64	
Total	63	23.94	

EPPS - Ach Scale

Ins	1	5.64	.323
Sex	1	206.64	11.836*
Beh	1	313.89	12.251*
Ins x Sex	1	26.26	1.504
Ins x Beh	1	.02	.001
Sex x Beh	1	102.52	5.872*
Ins x Sex x Beh	1	4.51	.258
Error	56	17.46	
Total	63	24.40	

*F = 4.02 for $p \leq .05$, df 1/56

Table 2 shows that non-cheaters had a higher need for achievement as measured by the EPPS than cheaters, and that non-cheaters scored higher on the mood scale of the MCI than cheaters.

TABLE 2

MEANS AND STANDARD DEVIATIONS OF CHEATERS AND NON-CHEATERS ON THE M SCALE OF THE MCI AND THE ACH SCALE OF THE EPPS

Group	$\bar{X}$	S.D.
MCI - M Scale		
Non-cheaters	13.81	4.69
Cheaters	11.22	4.81
EPPS - Ach Scale		
Non-cheaters	16.00	5.13
Cheaters	12.34	4.04

The EPPS Ach Scale measures need for educational and professional achievement (Heckhausen, 1967). The findings indicate that perhaps the student who is more highly achievement oriented will not see the results of cheating as meaningful achievement. The lower achievement oriented person is not apparently as involved in the need to achieve, therefore success through cheating is not conflict evoking as it would be to the individual with greater achievement need.

The M scale of the MCI indicates a student's usual mood (Berdie and Layton, 1957). It differentiates between students described as either optimistic or pessimistic, with pessimistic students scoring higher. The non-cheaters in this study scored higher than the cheaters.

These findings appear to support an argument that the person who cheats does not have the need for achievement in the academic realm that the non-cheater has, and that the pessimism of the non-cheater is

perhaps a manifestation of pressure of a cultural expectation that students perform well in the academic system.

Cheaters, with low achievement need, have an optimism which perhaps can be interpreted as unconcern with the socially desirable goal of achieving in school. In the test situation with test anxiety and the opportunity to cheat, functional behavior (cheating) occurs which operates to maintain the student's survival in the system without major moral conflict or guilt.

The behavior of the more achievement oriented person, who will not cheat in the test situation and whose mood is found to be more pessimistic, can perhaps best be explained by equating the pessimism with general anxiety to produce in the system. The pessimistic mood, perhaps evolving from the need to achieve or approach perfection, and the potential conflict or guilt if cheating behavior occurs, precludes cheating.

An interesting further question that might be raised here is whether there is a relationship between these findings and those of Rossi (1965), Rosen (1961) Elder (1962), Sears (1950), and Harris (1964), relative to the relationship of socialization of children and birth order and behavior in the test situation of this study. Kammeyer (1966) suggested that first-born children are "conservators of the traditional culture." First-born children develop a stricter social morality than later born children and this morality is more the traditional ideal morality of the culture. This would seem to be a pertinent question for further research.

First Order Interactions

Instructor x Behavior (Ins x Beh).--Two significant first order

interactions were found of the Ins x Beh type. These were on the Evaluative factor of the SD concept Teaching, and the Aggression (Agg) scale of the EPPS (see Table 3).

TABLE 3

SUMMARY OF ANALYSIS OF VARIANCE OF SCALES YIELDING SIGNIFICANT INSTRUCTOR X BEHAVIOR INTERACTIONS

Source of Variance	df	MS	F
SD - Concept-Teaching, Factor-Evaluative			
Ins	1	31.64	1.632
Sex	1	31.64	1.632
Beh	1	34.52	1.780
Ins x Sex	1	37.52	1.935
Ins x Beh	1	153.14	7.900*
Sex x Beh	1	1.89	.097
Ins x Sex x Beh	1	97.51	5.030*
Error	56	19.38	
Total	63	23.39	
EPPS - Agg Scale			
Ins	1	1.27	.091
Sex	1	192.52	13.935*
Beh	1	54.39	3.937
Ins x Sex	1	.02	.001
Ins x Beh	1	62.02	4.489*
Sex x Beh	1	9.77	.707
Ins x Sex x Beh	1	17.01	1.231
Error	56	13.81	
Total	63	17.63	

*F = 4.02 for $p \leq .05$, df 1/56

Analyses of these interactions (see Table 4) show that with regard to the evaluative dimension of the SD concept Teaching there may be a very direct influence of instructor operating. Instructor B's cheaters and non-cheaters score significantly different in their evaluation of Teaching, B's cheaters evaluating Teaching in a more positive way than the non-cheaters. The cheaters and non-cheaters of Instructor

A did not differ significantly in their evaluation of Teaching and the mean scores of both of A's groups fell between the means of B's groups.

TABLE 4

t-TESTS OF DIFFERENCES BETWEEN MEANS IN INSTRUCTOR X BEHAVIOR INTERACTIONS

SD - Concept-Teaching, Factor-Evaluative

Group	AN	AC	BN	BC
$\bar{X}$	13.25	14.88	17.75	13.19
AN		1.859	3.230*	.640
AC			2.244*	2.061*
BN				3.357*
BC				

EPPS - Agg Scale

$\bar{X}$	11.31	15.13	13.00	12.88
AN		3.680*	1.818	1.585
AC			2.031	2.047*
BN				.125
BC				

Note--Abbreviations are: A = Instructor A; B = Instructor B; N = Non-cheater; and C = Cheater. AN = Instructor A's Non-cheaters; AC = Instructor A's Cheaters; BN = Instructor B's Non-cheaters; and BC = Instructor B's Cheaters.

*t = 2.042 for $p \leq .05$, df 30

On the Agg scale of the EPPS, Instructor A's cheaters' higher need for aggression differed significantly from his non-cheaters and from B's cheaters. A trend might be suggested here in the fact that the difference between means of A's cheaters and B's non-cheaters would be significant at a .10 level of significance. This suggests that the possibility exists that A's cheaters differ from all other groups in terms of the aggression need as measured by the EPPS. The possibility also exists that the personalities of the two instructors are such that

either Instructor B provided outlets for aggression in his classroom or that Instructor A induced circumstances fostering hostility. No data are available to support or refute these possibilities.

Sex x Behavior (Sex x Beh).--Significant Sex x Beh first order interactions were found on the potency dimension of the Typical Student and Teaching concepts of the SD, the Family Relationships scale of the MCI, and the Achievement and Intraception scales of the EPPS (see Tables 1 and 5).

Table 6 shows that male non-cheaters saw the Typical Student as less potent than male cheaters, and that females, both cheaters and non-cheaters, fell between the two groups of males in their perception of the Typical Student. Females did not differ by behavior in their perception of the potency of the Typical Student.

With regard to the potency dimension of the concept Teaching, male non-cheaters perceived Teaching more negatively than male cheaters did, while female cheaters perceived Teaching more negatively than female non-cheaters. The male and female cheaters differed significantly in their perceptions of the potency of Teaching with the females having a more negative perception. The non-cheaters, male and female, did not differ in their perception of this factor.

Table 6 shows that male cheaters and non-cheaters differed significantly on the FR scale of the MCI. The cheaters scored lower, in the direction of better family relations, and the non-cheaters higher, in the direction of poorer family relations. Male cheaters also differed from female cheaters, with the female cheaters tending to score in the direction of poorer family relations.

With regard to the need Achievement as defined by the EPPS,

TABLE 5

SUMMARIES OF ANALYSIS OF VARIANCE OF SCALES YIELDING SIGNIFICANT SEX X BEHAVIOR INTERACTIONS

Source of Variance	df	MS	F
SD - Concept-Typical Student, Factor-Potency			
Ins	1	9.00	1.900
Sex	1	3.06	.646
Beh	1	16.00	.378
Ins x Sex	1	1.56	.330
Ins x Beh	1	12.25	2.586
Sex x Beh	1	33.06	6.980*
Ins x Sex x Beh	1	1.56	.330
Error	56	4.74	
Total	63	5.42	
SD - Concept-Teaching, Factor-Potency			
Ins	1	.02	.003
Sex	1	6.89	1.300
Beh	1	.02	.003
Ins x Sex	1	2.64	.498
Ins x Beh	1	.40	.074
Sex x Beh	1	28.89	5.450*
Ins x Sex x Beh	1	11.39	2.149
Error	56	5.30	
Total	63	5.51	
MCI - FR Scale			
Ins	1	.39	.008
Sex	1	.39	.008
Beh	1	43.89	.851
Ins x Sex	1	159.39	3.093
Ins x Beh	1	78.76	1.528
Sex x Beh	1	260.01	5.046*
Ins x Sex x Beh	1	50.76	.985
Error	56	51.52	
Total	63	55.22	
EPPS - Int Scale			
Ins	1	3.52	.162
Sex	1	4.52	.208
Beh	1	2.64	.122
Ins x Sex	1	34.52	1.590
Ins x Beh	1	15.02	.692
Sex x Beh	1	97.52	4.494*
Ins x Sex x Beh	1	1.89	.087
Error	56	21.70	
Total	63	21.82	

*F = 4.02 for $p \leq .05$, df 1/56

TABLE 6

t-TESTS OF DIFFERENCES BETWEEN MEANS
IN SEX X BEHAVIOR INTERACTIONS

SD - Concept-Typical Student, Factor-Potency

Group	MN	MC	FN	FC
$\bar{X}$	8.25	5.81	6.38	6.81
MN		4.895*	3.266*	2.864*
MC			.951	1.915
FN				.734
FC				

SD - Concept-Teaching, Factor-Potency

$\bar{X}$	7.19	5.81	6.50	7.81
MN		2.437*	1.097	.961
MC			1.451	3.960*
FN				2.285*
FC				

MCI - FR Scale

$\bar{X}$	11.75	6.06	7.88	10.25
MN		3.270*	1.994	.683
MC			1.351	2.486*
FN				1.253
FC				

EPPS - Ach Scale

$\bar{X}$	19.06	12.88	12.94	11.81
MN		7.062*	5.912*	6.006*
MC			.076	1.044
FN				.970
FC				

EPPS - Int Scale

$\bar{X}$	18.06	15.19	15.06	17.13
MN		2.381*	2.964*	.720
MC			.128	1.523
FN				1.867
FC				

*t = 2.042 for $p \leq .05$, df 30

Table 6 shows that male non-cheaters had a very significantly higher need to achieve than male cheaters or females regardless of behavior,

and that perhaps the discussion of the main effects difference between cheaters and non-cheaters is pertinent only to males and not to females. The male cheaters, female cheaters, and female non-cheaters do not differ significantly.

Table 6 also shows that male non-cheaters had a higher need for Intraception than male cheaters and female non-cheaters, and did not differ from female cheaters.

Instructor x Sex x Behavior (Ins x Sex x Beh).--Two significant second order interactions were found. They occurred on the evaluative factor of the SD concept Teaching and the Affiliation scale of the EPPS (see Tables 3 and 7).

TABLE 7

SUMMARY OF ANALYSIS OF VARIANCE
FOR THE AFF SCALE OF THE EPPS

EPPS - Aff Scale

Source of Variance	df	MS	F
Ins	1	43.89	2.016
Sex	1	185.64	8.529*
Beh	1	.14	.006
Ins x Sex	1	15.02	.689
Ins x Beh	1	40.64	1.867
Sex x Beh	1	.77	.035
Ins x Sex x Beh	1	102.51	4.709*
Error	56	21.77	
Total	63	25.52	

*F = 4.02 for $p \leq .05$, df 1/56

Table 8 shows t-test analyses of these second order interactions.

On the evaluative dimension of the concept Teaching the major source of significant variance appeared to be Instructor B's male non-

cheaters. They differed significantly from all other groups in their evaluation of Teaching. They saw Teaching more negatively than any other group.

TABLE 8

t-TESTS OF DIFFERENCES BETWEEN MEANS
IN SECOND ORDER INTERACTIONS

SD - Teaching-Evaluative

Group	AMN	AMC	AFN	AFC	BMN	BMC	BFN	BFC
$\bar{X}$	12.13	15.88	14.38	13.88	20.63	13.25	14.88	13.13
AMN		3.241*	1.552	1.544	3.964*	.934	1.924	.675
AMC			1.160	2.162*	2.326*	2.599*	.789	2.069
AFN				.393	2.815*	.842	.325	.786
AFC					3.326*	.635	.803	.573
BMN						3.564*	2.606*	3.345*
BMC							1.240	.091
BFN								1.115
BFC								

EPPS - Aff Scale

$\bar{X}$	13.88	9.63	15.50	16.75	12.38	16.38	17.13	16.50
AMN		2.696*	.787	1.996	.938	1.780	1.942	1.391
AMC			3.012*	5.601*	1.897	5.483*	4.898*	3.901*
AFN				.678	1.587	.482	.800	.452
AFC					3.365*	.356	.269	.152
BMN						3.174*	3.056*	2.314*
BMC							.554	.077
BFN								.338
BFC								

Note - Abbreviations are: A = Instructor A; B = Instructor B; M = Male; F = Female; N = Non-cheaters; C = Cheaters. AMN = Instructor A's Male Non-cheaters; AMC = Instructor A's Male Cheaters; AFN = Instructor A's Female Non-cheaters, etc.

*t = 2.145 for $p \leq .05$, df 14

Instructor A's male cheaters and non-cheaters differed significantly with the non-cheaters perceiving Teaching more negatively than cheaters. Interestingly, A's male cheaters evaluated Teaching more

positively than his non-cheaters and B's groups reversed this with the non-cheaters evaluating Teaching higher, suggesting that an Instructor influence was operating.

With regard to the Aff scale of the EPPS, A's male cheaters differed significantly from all other groups except for B's male non-cheaters and in the direction of a lower need for affiliation. B's male non-cheaters differed from A's female cheaters and B's other 3 groups -- male cheaters, female non-cheaters, and female cheaters.

Sex Differences

Main Effects on MCI.--Three scales of the MCI, Conformity (C), Mood (M), and Leadership (L), yielded significant main effect F ratios upon analysis on the Sex variable (see Tables 1 and 9).

These differences were consistent with the normative data for college students presented by Berdie and Layton (1959) (see Table 10). In all cases the differences found in this study were in the same direction as those reported by Berdie and Layton. However, Berdie and Layton reported a significant difference between sexes on the Emotional Security scale which is not supported by the data of this study, although the difference in means which does occur is in the same direction as the norm differences.

Main Effects on EPPS.--Main effects differences on the sex variable were found on seven scales of the EPPS. These were the Achievement (Ach), Affiliation (Aff), Succorance (Suc), Dominance (Dom), Abasement (Aba), Change (Chg), and Aggression (Agg) scales (see Tables 1, 3, 7, and 11).

The main effects found in this study for the above variables were consistent with differences found and reported by Edwards (1959)

TABLE 9

SUMMARY OF ANALYSES OF VARIANCE OF
THE C AND L SCALES OF THE MCI

Source of Variance	df	MS	F
MCI - C Scale			
Ins	1	1.00	.075
Sex	1	100.00	7.476*
Beh	1	.25	.019
Ins x Sex	1	36.00	2.691
Ins x Beh	1	6.25	.467
Sex x Beh	1	12.25	.915
Ins x Sex x Beh	1	1.00	.075
Error	56	13.37	
Total	63	14.37	
MCI - L Scale			
Ins	1	4.00	.175
Sex	1	144.00	6.317*
Beh	1	25.00	1.097
Ins x Sex	1	6.25	.274
Ins x Beh	1	6.25	.274
Sex x Beh	1	4.00	.175
Ins x Sex x Beh	1	25.00	1.097
Error	56	22.79	
Total	63	23.67	

*F = 4.02 for $p \leq .05$, df 1/56

TABLE 10

MEANS AND STANDARD DEVIATIONS FOR THE
C, M, L, AND ES SCALES OF THE MCI

MCI Scale	Males				Females			
	Norms		This Study		Norms		This Study	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
C	11.46	3.72	13.19	4.34	10.72	3.43	10.69	2.68
M	11.24	3.99	11.34	5.33	12.55	4.06	16.69	4.17
L	10.64	4.86	10.13	3.88	11.34	4.61	13.13	5.33
ES	10.72	6.10	14.35	5.93	12.79	6.42	16.28	7.57

TABLE 11

SUMMARIES OF ANALYSIS OF VARIANCE OF THE ABA, SUC, DOM, AND CHG SCALES OF THE EPPS

Source of Variance	df	MS	F
EPPS - Aba Scale			
Ins	1	6.25	.285
Sex	1	225.00	10.287*
Beh	1	5.00	.182
Ins x Sex	1	85.56	3.912
Ins x Beh	1	3.06	.140
Sex x Beh	1	.56	.026
Ins x Sex x Beh	1	6.25	.285
Error	56	21.87	
Total	63	24.69	
EPPS - Chg Scale			
Ins	1	.56	.029
Sex	1	100.00	5.208*
Beh	1	5.06	.263
Ins x Sex	1	20.25	1.054
Ins x Beh	1	7.56	.393
Sex x Beh	1	25.00	1.302
Ins x Sex x Beh	1	6.25	.325
Error	56	19.20	
Total	63	19.68	
EPPS - Suc Scale			
Ins	1	20.25	1.065
Sex	1	175.56	9.235*
Beh	1	22.56	1.186
Ins x Sex	1	10.56	.555
Ins x Beh	1	60.06	3.159
Sex x Beh	1	64.00	3.366
Ins x Sex x Beh	1	.25	.013
Error	56	19.01	
Total	63	22.50	
EPPS - Dom Scale			
Ins	1	2.25	.080
Sex	1	169.00	6.024*
Beh	1	14.06	.501
Ins x Sex	1	27.56	.982
Ins x Beh	1	2.25	.080
Sex x Beh	1	20.25	.721
Ins x Sex x Beh	1	7.56	.269
Error	56	28.05	
Total	63	28.79	

*F = 4.02 for $p \leq .05$, df 1/56

as college sample norms (p. 10). In each instance the mean scores for males and females differed significantly in his norm group.

On the Order, Exhibition, and Endurance scale Edwards reported no significant differences in means between males and females and this is the finding of this study.

However, Edwards did report significant differences between male and female means on the Deference, Autonomy, Intraception, Nurturance, and Heterosexuality scales which are not supported by the findings of this study.

Instructor x Sex (Ins x Sex).--On the Order (Ord) Scale of the EPPS a significant F ratio was yielded by the Ins x Sex source of variance (see Table 12).

TABLE 12

SUMMARY OF ANALYSIS OF VARIANCE OF THE ORD SCALE OF THE EPPS

EPPS - Ord Scale

Source of Variance	df	MS	F
Ins	1	21.39	1.240
Sex	1	58.14	3.370
Beh	1	.39	.023
Ins x Sex	1	87.89	5.095*
Ins x Beh	1	13.14	.761
Sex x Beh	1	.39	.023
Ins x Sex x Beh	1	43.89	2.545
Error	56	17.25	
Total	63	18.91	

*F = 4.02 for $p \leq .05$, df 1/56

Table 13 shows that the major source of variance lies with Instructor B's males. They differed significantly in their lower need for order from A's males or from either instructor's females.

TABLE 13

t-TESTS BETWEEN MEANS FOR GROUPS
ON THE ORD SCALE OF THE EPPS

EPPS - Ord Scale

Group	AM	AF	BM	BF
$\bar{X}$	10.63	10.19	7.13	11.38
AM		.486	3.320*	.673
AF			3.243*	1.176
BM				3.702*
BF				

*t = 2.042 for $p \leq .05$, df 30

Subjective evaluations of Instructor A and B by the investigator would lead the investigator to suggest that Instructor B had a much greater need for Order than Instructor A, and that B's males might have found less need for order than A's through the fact that B provided more order for students in his classrooms than A.

Instructor Differences

There were no scales used in this study on which significant main effects occurred on the Instructor variable. First order Instructor x Sex differences on the Order scale of the EPPS were discussed above, as were Instructor x Behavior differences on the evaluative factor of the SD concept Teaching and the EPPS scale Aggression. The evaluative factor of the SD concept Teaching also yielded a significant second order interaction as did the EPPS scale Affiliation and these were discussed above.

Summary of Results

The following questions were investigated:

1. Are there significant differences on any of the fifteen scales of the EPPS between persons cheating and those not cheating in the same situation?
2. Are there significant differences in attitudes and values as measured by a SD between persons cheating and those not cheating in the same situation?
3. Are there significant differences on any of the scales of the MCI between persons cheating and those not cheating in the same situation?

Significant differences were found between cheaters and non-cheaters on (1) the Ach, Aff, Int, and Agg scales of the EPPS; (2) the Potency dimension of the SD scales Typical Student and Teaching, the Evaluative dimension of the SD concept Teaching; and (3) the FR and M scale of the MCI.

In addition, sex differences or sex x instructor interaction were found on the Ach, Ord, Aff, Suc, Dom, Aba, Chg, and Agg scales of the EPPS and the C, M, and L scales of the MCI.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine if there were significant differences between students who cheat in a given academic situation and those who do not cheat in the same situation, in terms of the scales of the Edwards Personal Preference Schedule (EPPS), Minnesota Counseling Inventory (MCI), and a Semantic Differential (SD). The following questions were investigated:

1. Are there significant differences on any of the fifteen scales of the EPPS between persons cheating and those not cheating in the same situation?
2. Are there significant differences in attitudes and values as measured by a SD between persons cheating and those not cheating in the same situation?
3. Are there significant differences on any of the scales of the MCI between persons cheating and those not cheating in the same situation?

Cheaters and non-cheaters were identified and defined by their behavior when given an opportunity to grade their own hour examination which they had taken in an Educational Psychology class. Cheaters were defined as those students who reported a score on the examination which was higher by two or more points than the score reported for them on

the same examination by Data Processing. Non-cheaters were defined as those students who reported a grade identical to the score reported for them on the same examination by Data Processing.

The literature and research studies of cheating and the development of morality was reviewed. The review suggested that perhaps a trait labeling of individuals as cheaters and non-cheaters is not always appropriate and that other factors affect behavior. Wrightsman (1959) called for investigation of the needs and pressures underlying cheating by individuals.

The sample of the study consisted of 64 out of 198 students enrolled in Psychology 213, Educational Psychology, at the University of North Dakota during the second semester of the 1965-66 school year.

The instruments employed in the investigation were the Edwards Personal Preference Schedule, the Minnesota Counseling Inventory, and a Semantic Differential constructed by the investigator.

Data were analyzed using a three-way analysis of variance program and an IBM 1620 computer available at the University of North Dakota Computer Center.

The findings of the study were as follows:

1. On 20 of the 36 scales of the EPPS, MCI, and SD no differences between groups were found.
2. Non-cheaters had a higher need for achievement as measured by the EPPS than cheaters.
3. Non-cheaters scored higher on the Mood scale of the MCI than cheaters.
4. On the evaluative dimension of the SD concept Teaching, Instructor B's cheaters evaluated teaching more posi-

tively than the non-cheaters.

5. Instructor A's cheaters had a significantly greater need for aggression as measured by the EPPS than his non-cheaters or Instructor B's cheaters.
6. As measured by the potency dimension of the SD concept Typical Student, male non-cheaters saw the Typical Student as less potent than male cheaters saw him.
7. As measured by the potency dimension of the concept Teaching, male non-cheaters perceived Teaching more negatively than male cheaters, and female cheaters perceived Teaching more negatively than female non-cheaters. Male and female cheaters differed significantly with females perceiving Teaching as less potent.
8. Male cheaters scored lower, in the direction of better family relationships, than male non-cheaters on the FR scale of the MCI. Female cheaters scored lower, in the direction of better family relationships, than male cheaters.
9. Male non-cheaters differed significantly in their higher need to achieve as measured by the EPPS than male cheaters or females, either cheaters or non-cheaters.
10. Male non-cheaters had a significantly higher need for Intraception as measured by the EPPS than male cheaters and female non-cheaters, and did not differ from female cheaters.
11. On the evaluative dimension of the SD concept Teaching, a second order interaction indicated that Instructor B's

male non-cheaters differed from all other groups in their negative evaluation of Teaching.

12. On the EPPS a second order interaction indicated that Instructor A's male cheaters' lower need for Affiliation differed from all groups except Instructor B's male non-cheaters. Other differences found here are of an indistinct pattern.

13. Sex differences occurred on the Conformity, Mood, and Leadership scales of the MCI. These were consistent with normative data. On the Emotional Security scale no significant difference was found between sexes. This was inconsistent with the normative findings that women score significantly higher.

14. Sex differences occurred on the Achievement, Affiliation, Succorance, Dominance, Abasement, Change, and Aggression scales of the EPPS. No sex differences were found on the Order, Exhibition, and Endurance scales. These findings were consistent with the normative data. No sex differences were found on the Deference, Autonomy, Intraception, Nurturance, and Heterosexuality scales. These findings were inconsistent with the normative data.

15. On the Order scale of the EPPS, Instructor B's males differed from other groups in their lower need for order.

Conclusions

The findings of this study support the following three general conclusions:

1. A trait psychology dichotomization of individual

behavior along a cheating and non-cheating continuum is incomplete and inappropriate for considering the dynamics of moral behavior.

2. There are two identifiable groups of students in the classroom, those who never consider cheating and those for whom cheating is an acceptable alternative depending on the situation. The discriminating variables between these groups are achievement need as measured by the EPPS and mood as measured by the MCI, non-cheaters having a higher need for achievement and a higher score (more pessimistic mood) on the M scale than cheaters.

The specificity of the differences between groups as indicated by the first and second order interactions, and the apparent lack of pattern of these differences preclude the creation of a personality model to which cheating and non-cheating can be related. This supports the propositions of Brown (1965) that the dimensions of morality are many and complexly related, and the conclusion of Patterson (1966), that cheating is a combination of situational and personal needs rather than being a personality correlate.

The Hartshorne and May (1930) conclusion that cheating is to a major extent situational is not directly tested in this study. However, their conclusion that "the most common motive for cheating on classroom exercises is the desire to do well" (p. 412) is suspect if the desire to do well is an implication of achievement need in academic settings.

The EPPS achievement scale and the MCI mood scale distinguished between honest students and those who cheat. It is suggested that those students who never cheat or who never even consciously consider cheating are individuals who have a high need for academic achievement and

are pessimistic. The cheaters have a relatively low need for academic achievement and a mood which can be described as optimistic, suggesting an unconcern with the socially desirable goal of achieving in school.

Limitations of the Study

Since the population of this study was limited to students who enrolled in a course in educational psychology, generalizations beyond a group described as potential teachers or teachers-in-training would be limited. If the study was to be replicated on a more representative group of students and similar results were found, broader generalizations would be warranted.

A second possible limitation of the study may be the limited use of the MCI with college-age groups. The limited data available for this age group on the MCI does not establish reliability and validity to the extent that findings can be unequivocally accepted (Berdie and Layton, 1959). The third limitation of this study was the lack of certain personal information about the individuals sampled, which if available, would have allowed other comparisons and analyses of groups and behaviors to be made which might have served to more completely explain the dynamics of moral behavior, in this instance, cheating on examinations in college classrooms.

A final limitation of this study was the restricted definition of cheating used as the criterion for classifying individuals as cheaters and non-cheaters. Other kinds of academic cheating occur and other forms of cheating could have been used as the behavioral criterion.

Implications

This study may be of value to certain groups of administrators and teachers who are concerned with the disciplinary and morale conse-

quences of cheating. Counselors who often become involved with the consequences of cheating, whether it be as a result of disciplinary concern or personal guilt and conflict on the part of students, might find it of assistance. This study may also be useful to educators in general who need and want to know more about the dynamics of behavior as it affects the classroom performance of students.

It may be of value to the counselor, psychologist, or educator who is concerned with theory building or research in the area of morality, personality, or behavior dynamics. Psychologists and educators interested in these areas should find the results of this study of interest.

In addition to the above, it is appropriate to point out that a SD, the MCI, and the EPPS do not begin to constitute a complete or even perhaps adequate sampling of the variables and scales available for personality assessment. Such instruments as the Allport-Vernon-Lindzey Study of Values and the Mooney Problem Checklist might yield important findings. Also, a socio-familial background investigation might allow further exploration of such things as effect of birth order on achievement need and moral conduct.

Lastly, one must always be aware that correlation or association between two variables does not establish cause and effect relationships. Replication of this study, and more studies in the same area, would contribute to the knowledge available relative to moral behavior.

Recommendations for Further Research

In this study Achievement need as measured by the EPPS, and mood as measured by the MCI, distinguished between students who cheated in an academic situation and those who did not cheat. If replication of the study produced the same or similar results, the conclusion could be vali-

dated that these are in fact personality characteristics differentiating cheaters and non-cheaters, as defined here.

In order that generalization of the findings of this study could be made to the area of moral decision-making in all people, certain other studies or modification of this one would be needed.

1. To generalize to college students, a broader based more representative sample would be required.
2. Observation of cheating and non-cheating behavior in more and different college situations would be required to generalize to all college students.
3. Populations other than a college student one should be studied in both academic and non-academic settings in order to generalize to a larger population.
4. Social class and status factors should be controlled so that conclusions would not be limited to only a middle-class group.

Further research in the area of moral conduct could utilize different instruments which offer other models for description of human personality than those used in this study.

Instructor x Behavior interactions found on the Aggression scale of the EPPS and on the evaluative factor of the SD concept Teaching suggest that consideration of the personalities of the instructors, perhaps in terms of the same instruments as used with the sample, might provide information about the effect of interpersonal relationships as a facet of moral behavior.

Another factor which was held relatively constant in this study, but which could be manipulated to give greater insight into the dynamics of moral behavior, is that of motivation. A pertinent question to ask

would seem to be what would be the behavior of individuals given moral choices if the situation was a final examination rather than an hour examination, or quizzes, or classroom assignments or activities that do not involve course credit.

APPENDIX A

Name_____

Semantic Differential Test Booklet

TEACHING

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

STUDYING

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

MYSELF

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

EXAMINATIONS

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

TYPICAL STUDENT

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

COLLEGE INSTRUCTORS

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

HONESTY

good____:____:____:____:____:____:____bad

kind____:____:____:____:____:____:____cruel

unimportant____:____:____:____:____:____:____important

pleasurable____:____:____:____:____:____:____painful

foolish____:____:____:____:____:____:____wise

unsuccessful____:____:____:____:____:____:____successful

reputable____:____:____:____:____:____:____disreputable

strong____:____:____:____:____:____:____weak

free____:____:____:____:____:____:____restricted

APPENDIX B

THE ITEMS OF THE EDWARDS PERSONAL PREFERENCE SCHEDULE

1. ach Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. def Deference: to get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. ord Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details or work, to keep letter and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

4. exh Exhibition: to say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. aut Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. aff Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. int Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. suc Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have

others feel sorry when one is sick, to have a fuss made over one when hurt.

9. dom Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. aba Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. nur Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. cha Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. end Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distraction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. het Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes involving sex, to become sexually excited.

15. agg Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.

APPENDIX C

SUMMARY OF ANALYSIS OF VARIANCE FOR SCALES OF THE SD YIELDING NO SIGNIFICANT F RATIOS

SD - Concept-Myself, Factor-Evaluative

Source of Variance	df	MS	F
Instructor (Ins)	1	7.56	.313
Sex	1	2.25	.093
Behavior (Beh)	1	60.06	2.489
Ins x Sex	1	16.00	.663
Ins x Beh	1	52.56	2.178
Sex x Beh	1	2.25	.093
Ins x Sex X Beh	1	2.25	.093
Error	56	24.13	
Total	63	23.71	

SD - Concept-Myself, Factor-Potency

Ins	1	1.56	.216
Sex	1	14.06	1.944
Beh	1	16.00	2.212
Ins x Sex	1	.10	.138
Ins x Beh	1	.06	.009
Sex x Beh	1	5.06	.699
Ins x Sex x Beh	1	1.00	.138
Error	56	7.23	
Total	63	7.04	

SD - Concept-Examinations, Factor-Evaluative

Ins	1	56.25	1.303
Sex	1	.56	.013
Beh	1	20.25	.469
Ins x Sex	1	25.00	.579
Ins x Beh	1	.07	.002
Sex x Beh	1	9.00	.208
Ins x Sex x Beh	1	5.06	.117
Error	56	43.14	
Total	63	40.19	

SD - Concept-Examinations, Factor-Potency

Ins	1	3.06	.659
Sex	1	6.25	1.346
Beh	1	2.25	.484
Ins x Sex	1	.06	.013
Ins x Beh	1	3.06	.659
Sex x Beh	1	4.00	.862
Ins x Sex x Beh	1	3.06	.659
Error	56	4.64	
Total	63	4.47	

Note: $p \leq .05 = 4.02$

SD - Concept-College Instructor, Factor-Evaluative

Source of Variance	df	MS	F
Instructor (Ins)	1	6.25	.189
Sex	1	14.06	.427
Behavior (Beh)	1	5.06	.154
Ins x Sex	1	7.56	.229
Ins x Beh	1	14.06	.427
Sex x Beh	1	.25	.008
Ins x Sex x Beh	1	36.00	1.093
Error	56	32.91	
Total	63	30.57	

SD - Concept-College Instructor, Factor-Potency

Ins	1	.14	.030
Sex	1	1.89	.403
Beh	1	4.52	.963
Ins x Sex	1	.14	.029
Ins x Beh	1	.39	.083
Sex x Beh	1	.02	.003
Ins x Sex x Beh	1	11.39	2.428
Error	56	4.69	
Total	63	4.46	

SD - Concept-Studying, Factor-Evaluative

Ins	1	1.27	.072
Sex	1	4.52	.257
Beh	1	21.39	1.219
Ins x Sex	1	19.14	1.091
Ins x Beh	1	17.02	.970
Sex x Beh	1	.77	.044
Ins x Sex x Beh	1	2.64	.150
Error	56	17.54	
Total	63	16.65	

SD - Concept, Studying, Factor-Potency

Ins	1	3.06	.555
Sex	1	1.56	.283
Beh	1	.06	.011
Ins x Sex	1	.56	.102
Ins x Beh	1	7.56	1.370
Sex x Beh	1	14.06	2.548
Ins x Sex x Beh	1	.06	.011
Error	56	5.52	
Total	63	5.33	

Note: $p \leq .05 = 4.02$

SUMMARY OF SD SCALES--Continued

SD - Concept-Honesty, Factor-Evaluative

Source of Variance	df	MS	F
Ins	1	23.77	1.129
Sex	1	.14	.007
Beh	1	28.89	1.372
Ins x Sex	1	2.64	.125
Ins x Beh	1	21.39	1.016
Sex x Beh	1	6.89	.327
Ins x Sex x Beh	1	.39	.018
Error	56	21.05	
Total	63	20.04	

SD - Concept-Honesty, Factor-Potency

Ins	1	11.39	1.668
Sex	1	1.27	.185
Beh	1	4.51	.661
Ins x Sex	1	9.77	1.430
Ins x Beh	1	8.27	1.210
Sex x Beh	1	.39	.057
Ins x Sex x Beh	1	.02	.002
Error	56	6.83	
Total	63	6.63	

SD - Concept-Typical Student, Factor-Evaluative

Ins	1	.56	.018
Sex	1	20.25	.672
Beh	1	9.00	.298
Ins x Sex	1	.25	.008
Ins x Beh	1	1.00	.033
Sex x Beh	1	45.57	1.512
Ins x Sex x Beh	1	5.06	.167
Error	56	30.12	
Total	63	28.07	

Note: $p \leq .05 = 4.02$

SUMMARY OF ANALYSIS OF VARIANCE FOR SCALES OF THE MCI YIELDING NO SIGNIFICANT F RATIOS

MCI - Social Relationships Scale

Source of Variance	df	MS	F
Ins	1	199.52	1.385
Sex	1	236.39	1.641
Beh	1	319.52	2.218
Ins x Sex	1	.77	.005
Ins x Beh	1	23.77	.165
Sex x Beh	1	15.02	.104
Ins x Sex x Beh	1	21.39	.148
Error	56	144.01	
Total	63	140.97	

MCI - Emotional Stability Scale

Ins	1	1.27	.027
Sex	1	129.39	2.838
Beh	1	66.01	1.448
Ins x Sex	1	2.64	.057
Ins x Beh	1	92.64	2.032
Sex x Beh	1	1.89	.041
Ins x Sex x Beh	1	147.01	3.224
Error	56	45.59	
Total	63	47.52	

MCI - Adjustment to Reality Scale

Ins	1	13.14	.401
Sex	1	1.27	.038
Beh	1	54.39	1.660
Ins x Sex	1	11.39	.347
Ins x Beh	1	118.27	3.611
Sex x Beh	1	2.64	.081
Ins x Sex x Beh	1	47.27	1.443
Error	56	32.75	
Total	63	33.05	

Note: $p \leq .05 = 4.02$

SUMMARY OF ANALYSIS OF VARIANCE FOR SCALES OF THE EPPS YIELDING NO SIGNIFICANT F RATIOS

Source of Variance	df	MS	F
EPPS - Deference Scale			
Ins	1	.39	.025
Sex	1	.14	.009
Beh	1	2.64	.169
Ins x Sex	1	9.76	.626
Ins x Beh	1	47.26	3.029
Sex x Beh	1	8.26	.529
Ins x Sex x Beh	1	4.51	.289
Error	56	15.60	
Total	63	15.02	
EPPS - Exhibition Scale			
Ins	1	1.26	.097
Sex	1	.14	.011
Beh	1	34.51	2.650
Ins x Sex	1	8.27	.635
Ins x Beh	1	5.64	.433
Sex x Beh	1	34.52	2.651
Ins x Sex x Beh	1	4.51	.346
Error	56	13.02	
Total	63	12.98	
EPPS - Autonomy Scale			
Ins	1	28.89	1.353
Sex	1	54.39	2.547
Beh	1	.39	.018
Ins x Sex	1	.39	.018
Ins x Beh	1	13.14	.615
Sex x Beh	1	43.89	2.056
Ins x Sex x Beh	1	.76	.036
Error	56	21.35	
Total	63	21.23	

Note: $p \leq .05 = 4.02$

SUMMARY OF EPPS SCALES--Continued

EPPS - Endurance Scale

Source of Variance	df	MS	F
Ins	1	30.25	1.618
Sex	1	12.25	.655
Beh	1	1.00	.053
Ins x Sex	1	5.06	.271
Ins x Beh	1	1.56	.084
Sex x Beh	1	10.56	.565
Ins x Sex x Beh	1	4.00	.214
Error	56	18.69	
Total	63	17.64	

EPPS - Heterosexuality Scale

Ins	1	6.89	.368
Sex	1	28.89	1.546
Beh	1	1.89	.101
Ins x Sex	1	2.64	.141
Ins x Beh	1	11.39	.609
Sex x Beh	1	.77	.041
Ins x Sex x Beh	1	5.64	.302
Error	56	18.69	
Total	63	17.53	

EPPS - Nurturance Scale

Ins	1	19.14	.875
Sex	1	70.14	3.208
Beh	1	54.39	2.487
Ins x Sex	1	.77	.035
Ins x Beh	1	5.64	.258
Sex x Beh	1	17.02	.778
Ins x Sex x Beh	1	8.26	.378
Error	56	21.86	
Total	63	22.22	

Note: $p \leq .05 = 4.02$

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