

6-1966

An inquiry into the Kuder preference record vocational verification scale and the Guilford Zimmerman temperament survey falsification scale

Ann Denton Ryder

Follow this and additional works at: <http://scholarship.richmond.edu/masters-theses>



Part of the [Psychology Commons](#)

Recommended Citation

Ryder, Ann Denton, "An inquiry into the Kuder preference record vocational verification scale and the Guilford Zimmerman temperament survey falsification scale" (1966). *Master's Theses*. Paper 972.

This Thesis is brought to you for free and open access by the Student Research at UR Scholarship Repository. It has been accepted for inclusion in Master's Theses by an authorized administrator of UR Scholarship Repository. For more information, please contact scholarshiprepository@richmond.edu.

AN INQUIRY INTO THE KUDER PREFERENCE
RECORD-VOCATIONAL VERIFICATION SCALE AND THE GUILFORD-
ZIMMERMAN TEMPERAMENT SURVEY FALSIFICATION SCALE

By

ANN DENTON RYDER

A THESIS
SUBMITTED TO THE GRADUATE FACULTY
OF THE UNIVERSITY OF RICHMOND
IN CANDIDACY
FOR THE DEGREE OF
MASTER OF ARTS IN PSYCHOLOGY

JUNE, 1966

LIBRARY
UNIVERSITY OF RICHMOND
VIRGINIA

Thesis Committee:

Chairman and Advisor

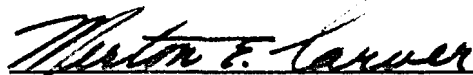
Dr. Merton E. Carver
Professor of
Psychology

Members

Dr. Robert J. Filer
Associate Professor
of Psychology

Dr. William H. Leftwich
Assistant Professor
of Psychology

Approved:



(Merton E. Carver, Ph.D.)

(Robert J. Filer, Ph.D.)

(William H. Leftwich, Ph.D.)

LIBRARY
UNIVERSITY OF RICHMOND
VIRGINIA

PREFACE

The opportunity is welcomed to express appreciation to several individuals who have been invaluable sources of help in the preparation of this thesis.

Due to the distance from the University of Richmond, the writer found it necessary to seek advice and the use of a calculator from the Psychology Department of Wake Forest College, Winston-Salem, North Carolina. Several staff members in this department gave aid and encouragement; in particular Dr. John E. Williams was exceedingly generous in allotting time to explain certain statistical procedures to the writer. The completion of this work would have been impossible without this help.

Dr. Merton E. Carver, thesis advisor, gave unique understanding and assistance in the writer's efforts to complete this work in absentia from the University of

Richmond. His gracious help and professional advice is deeply appreciated.

The direction and critical evaluation given by members of the Thesis Committee, Dr. Robert J. Filer and Dr. William H. Leftwich, is gratefully acknowledged.

Many thanks to Dr. Richard K. Young, Pastoral Care Department of the North Carolina Baptist Hospital, and to Mr. Truman Smith, now of the Southern Baptist Foreign Mission Board, for their co-operation in providing class time for administration of the tests to ministerial students.

Finally, gratitude must be expressed to my husband, Chaplain J. E. Ryder, for continued encouragement and extensive help in checking computations and typing manuscripts.

TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM OF FAKING AND THE NEED FOR DETECTING INSINCERITY.....	1
General Review of Investigations of Faking..	1
Additional Review of Recent Related Research.....	5
II. THE BASIC ISSUES OF THE INVESTIGATION.....	10
III. DESIGN AND PROCEDURE OF THE PRESENT STUDY..	13
Subjects.....	13
Procedure.....	14
IV. RESULTS OF THE EXPERIMENT.....	17
Establishing the Altruistic Attitude as an Independent Variable.....	17
Effects of Altruism on the Facade Measures..	23
V. IMPLICATIONS AND CONCLUSIONS.....	26
Primary Implications.....	26
Secondary Implications.....	28
Conclusions.....	45
VI. SUMMARY.....	48
BIBLIOGRAPHY.....	51

CHAPTER	PAGE
APPENDIXES.....	55
A. Raw Scores on the Guilford-Zimmerman Temperament Survey.....	55
B. Raw Scores on the Study of Values.....	58
C. Raw Scores on Verification and Falsification Scales.....	61
D. Review of Tests Used.....	64

LIST OF TABLES

TABLE	PAGE
I. Guilford-Zimmerman Temperament Survey	
Analysis of Variance Summary Table.....	19
II. Study of Values Analysis of Variance	
Summary Table.....	21
III. Group Differences on Traits Held	
Indicative of Altruism.....	22
IV. Group Differences on Verification and	
Falsification Scales.....	25
V. Over-all Differences Between Groups on	
Measured Traits.....	46

LIST OF FIGURES

FIGURE	PAGE
I. Guilford-Zimmerman Temperament Survey, Mean Profiles.....	35
II. Study of Values, Mean Profiles.....	42

CHAPTER I

THE PROBLEM OF FAKING AND THE NEED FOR DETECTING INSINCERITY

I. GENERAL REVIEW OF INVESTIGATIONS OF FAKING

There have been several studies indicating the fakability of interest tests, including those of Longstaff (20), Cross (3), Durnall (9), and Goldstein on the Kuder Preference Record (11), Garry's investigation of the Strong (10) and Green's of the Guilford-Martin (12). The evidence suggests that such tests can indeed be faked, although the manner in which they can be faked does differ, as shown by Longstaff (20). Some critics of such tests, especially Rothney and Schmidt (23), have recently become so opposed to their use in vocational and/or educational counseling that the efficacy of interest tests appears questionable.

The Longstaff study, done in 1948, yielded several interesting data. The Kuder Preference Record and the Strong Interest Blank were administered to fifty-nine subjects under standard directions, and again under instructions to fake certain scores upward and other scores downward. Results showed that both tests are fakable, that interest categories differ in their fakability, that the Strong is easier to fake upward and the Kuder downward, and that women are less successful in faking than men. Longstaff suggested that a set of items which yield a lie score be added--items which would not be obvious even to the sophisticated faker.

Goldstein, in 1960, again demonstrated the fakability of the Kuder Preference Record-Vocational. Using thirty college seniors, all taking the test first under instructions as per the manual, then as if applying for the position of high school math teacher, it was shown by test-retest comparisons that the Kuder could successfully be falsified.

In the context of the present study, some personality tests, too, are relevant for their susceptibility to faking. A study of the Guilford-Zimmerman Temperament Survey by Herzberg (14) in 1954 shows that subjects can be sophisticated enough to slant their profiles in desired directions. The

Guilford-Zimmerman Test, which Herzberg considers one of the most widely used inventories of the non-psychiatric type and quite applicable in industrial personnel work, is still approached with wariness by industrial psychologists. He claims that they deplore the transparency of tests such as the Guilford-Zimmerman Temperament Survey and their corresponding amenability to faking or pointing answers to achieve a desired result.

When the first criticisms of the Kuder tests pointed out that subject's scores did not always represent their sincere interests, Kuder appeared oblivious. A suggestion was made by F. L. Ruch (24) for a possible method of identifying the fakers. He proposed that item analysis be used to develop a system for differentiating between blanks answered sincerely and those answered with the intent of making a good impression. Kuder, using this method, came up with a system which he claims makes such distinctions with from 87 to 94% accuracy--except for about one-tenth of the cases, which he classified as doubtful (19). This work, done on the Kuder Preference Record in 1950, resulted in two scores; a V-score which was considered a measure of carefulness and an H-score

to measure honesty. The former score was derived on the basis of getting only a chance number of common responses to key questions which would be marked in a predetermined manner by almost everyone; the latter, the H-score, was based on the proportion of responses answered in a sincere and best impression direction by experimental groups with total subjects of 278.

These scales were combined in a later publication of Kuder Preference Record-Vocational.

As the Durnall study (9) indicated, this did not still the critics. In 1954, Kuder himself seemed to disallow the effectiveness of his scale when he wrote that in regard to preventing and discouraging faking, he looked for trends in occupational inventories away from items with obvious vocational significance. These less obvious items would have to be discovered by trial and error, he said (18).

A similar approach was taken to the problem on the Guilford-Zimmerman Temperament Survey. It has two falsification scales: a gross falsification scale composed of items usually not answered in the keyed directions, but easily fakable under instructions to do so, and a subtle-falsification scale employing fakable items which were answered in the

keyed direction half the time under standard instructions (16). It is with the latter that this study is concerned. The intent of this scale is to pick out examinees who tend to give themselves the benefit of the doubt on items frequently answered in an unfavorable direction. Selection of items to be keyed was based on items answered in the keyed direction by forty to sixty per cent of a standard group but by more than sixty per cent of the responses of a group instructed to fill out the Guilford-Zimmerman Survey in such a way as to give the most favorable impression of themselves. A total of 457 subjects were used in establishing and cross-validating the scale. There are separate keys for males and females on this scale.

II. ADDITIONAL REVIEW OF RECENT RELATED RESEARCH

In the context of the present study, certain other research findings are of interest, having indirect bearing on the factors here considered. They are briefly presented herewith.

A study by Rimland (22) on the expressed willingness of college men to fake on a personality test shows that only a small percentage agreed they would have engaged in exten-

sive falsification, although many said they would have biased their answers to some extent. This finding was the same whether students signed papers or responded anonymously.

An incidental finding in Cassell's study (6) which compared IBM and hand scored administration of the Kuder Preference Record was that forty-nine of two hundred retest records on ninth graders were regarded as of doubtful validity, using Kuder criteria. An analysis of these forty-nine revealed that they scored lower than their 141 classmates on the California Test of Mental Maturity intelligence quotient and on the Iowa Test of Educational Development scores on Reading, General Vocabulary, Basic Social Skills, and Use of Information Sources. This seems to back Kuder's claims for his verification score as a measure of carelessness or lack of understanding.

In a study by Jackson (15) of the stability of Guilford-Zimmerman personality measures, performance of the same group of forty-six females on the Guilford-Zimmerman Temperament Survey was compared over a period of time; it was found that the inventory measures "relatively persistent attributes of the persons tested."

However, results contrary to this were indicated in

work by Cook (7); he found that beginning and student teachers show similar relationships between the Minnesota Teacher Attitude Inventory Scores and each of various Guilford-Zimmerman Temperament Survey traits, but these relations differ from experienced teachers primarily in that the correlations are higher for the latter group. Cook contends that the increasing size of correlations with teaching experience suggests personality changes taking place with increased participation in professional work.

Kenoyer (17), in studying the influence of religious life, found that young women (age nineteen) who planned to enter religious life already perceived themselves as more emotionally stable, less inclined to be hypersensitive, more co-operative and more masculine than did a matched group of lay women. Older women in lay and religious life (ages twenty-three and twenty-eight) were compared to identify differences attributable to age and experience; they perceived themselves as more self-controlled, agreeable and masculine. Two out of sixteen variables clearly showed the actual influence of religious life: Guilford-Zimmerman Temperament Survey subscales Ascendance and Sociability indicate religious life as these women experienced it seems to result

in a self-percept having more qualities of submissiveness and shyness than are present in the self-percept of a lay woman. In addition to the revealed effects of religious life, these results could be held to show that personality traits are subject to change due to environmental influences.

Finally, in an inquiry done by Haggaley (2) into comparative temperament scores of forty-seven Jewish and forty-three Gentile male students, as measured by the Guilford-Zimmerman Temperament Survey, the scores of these two groups did not differ significantly.

CHAPTER II

THE BASIC ISSUES OF THE INVESTIGATION

In 1960, Brown and Abeles brought up the interesting possibility that the facade (faking) score itself might be a significant predictor of behavior. These investigators developed their own facade measurement, and determined that scores on it were significantly and negatively related to subsequent academic achievement in college (3). Can it be that some faking scores are measuring a general attitudinal outlook on life, rather than the specific inclination to falsify?

Review of Psychological Abstracts and other literature back to 1940 show that there seems to have been no research into the area of sincere answers being labeled as false on a lie scale. Results of such inaccuracy, especially in areas such as business and industrial testing of potential

employees, could be detrimental both to the concern administering a test battery and to the individual inaccurately designated as lying.

The present study proposes the hypothesis that a special population composed of altruists could sincerely give positive answers to "good impression" questions and falsely be labeled fakers. An altruist, as here considered, would be one who conceived himself as basing his behavior on the welfare of other beings rather than to serve his own advantage. Such an individual might deviate significantly in attitudes and personality characteristics from people in general. His philosophy of life could lead to giving sincere responses so at variance with those expected from the general population that he would inadvertantly fall in the category labeled insincere or false.

If this would be the case, a significant score on the facade measurement could indicate either of two personality variables: altruism or an inclination to falsify. These two variables are at least subjectively polar and could be viewed as extremes on an interest test response continuum.

Specific scales to be investigated in the present study are the verification scale as employed by Kuder on the

Kuder Preference Record-Vocational and the falsification scale of the Guilford-Zimmerman Temperament Survey.

It is felt that other lie scales on tests such as the Strong Interest Blank, the Cattell Sixteen Personality Factors, the Kuder Preference Record-Personal, and, perhaps, the MMPI could be susceptible to similar distortions. It was not possible, of course, to include all faking measures which might be of interest in the present study.

The experimental group for such study would have to be composed of subjects most likely to be high in an altruism quotient. This selective determination of the experimental group is, in effect, making this a treatment group within itself. Since it would be impossible to produce altruism experimentally, it was necessary to seek it as a pre-existing condition, then consider it as a treatment category.

Theological students working for a bachelor of divinity degree seem potential candidates for such a group. To determine the presence of this altruism variable, tests measuring the value systems and personality characteristics of the seminarians were compared with results of the same tests given a control group.

A by-product of the procedure was a statistical

comparison of personality traits and value orientation of the seminary students and the control group as delineated by the tests employed. Clinical tests deemed appropriate for measuring these variables were the Allport Vernon Lindzey Study of Values, third edition, and the Guilford-Zimmerman Temperament Survey.

A study making similar comparisons was done by Sutter in 1961 (25), in which a normative sample of college students was used in conjunction with 1963 Catholic seminarians. The seminarians scored higher than the college students on restraint, emotional stability, friendliness, thoughtfulness, and personal relations; they scored lower on general activity, ascendance, sociability, objectivity, and masculinity on the Guilford-Zimmerman Temperament Survey. All differences were significant.

CHAPTER III

DESIGN AND PROCEDURE OF THE PRESENT STUDY

I. SUBJECTS

The subjects for this study were an experimental group of forty-eight male students at a Protestant theological seminary in a Southeastern state, all candidates for a bachelor of divinity degree. The control group consisted of fifty-three male students in general psychology classes at the University of Richmond, Virginia. Instructions given each group were non-ego involving; that is, it was made clear that the results were to be used for this research only, and would not be a part of their school record.

For the experimental group, approximately 110

students were administered the Guilford-Zimmerman Temperament Survey and the Allport Vernon Lindzey Study of Values in two sessions of a Pastoral Counseling class at the seminary. Because no further class time was available, it was necessary to request volunteers to take the Kuder Preference Record in several small groups and individual sessions. The incomplete scores of those who did not volunteer were discarded; the resulting forty-eight seminarians composed the experimental group.

The control group, composed of fifty-three male students in general psychology classes at the University of Richmond, took the tests under the direction of the professor during regular class time.

Because some of the students had been absent during some testing sessions, and because a few had not correctly followed directions in filling out the tests, some subjects had to be dropped from each group.

II. PROCEDURE

All scales on the Guilford-Zimmerman and the Study of Values were administered and considered in the statistical analysis of the study. On the Kuder, only the

verification scale was scored, since the vocational interests scales were not pertinent to this study.

In attempting to ascertain the presence of altruism, the scales on the Guilford-Zimmerman measuring self-perception of friendliness (toleration of hostile actions, respect for others), thoughtfulness (reflective, observing of self and others) and personal relations (tolerance of people) are considered important along with those on the Study of Values measuring religious (given to self-denial, meditation or to affirmation of life by active participation therein), social (love of people) and economic (satisfaction of bodily needs) interests, were compared for the two groups. It was expected that altruism as here construed would produce higher scores on all these scales except economic values, which would be lower. It should be noted that the "social" scale of the Study of Values purports to measure altruism, and will be of particular significance here.

All scales on these two tests except the Guilford-Zimmerman F-scale were used in the Lindquist Type I statistical analysis of the results, in order to establish the presence of over-all differences between the groups.

Then, to test the hypothesis, t-tests were done on the scales pertinent to altruism variables and on the scores of the verification scale of the Kuder and the falsification scale of the Guilford-Zimmerman.

CHAPTER IV

RESULTS OF THE EXPERIMENT

I. ESTABLISHING THE ALTRUISTIC ATTITUDE AS AN INDEPENDENT VARIABLE

Statistical treatment of the results indicated over-all differences between the groups, significant at the .01 level, using F-tests, on both the Guilford-Zimmerman Temperament Survey and the Allport Vernon Lindzey Study of Values. Although a significant F was found both for the six scales of the Study of Values and the ten scales of the Guilford-Zimmerman Temperament Survey, a clear-cut interpretation of the difference cannot be made in either case in the face of significant interaction. Since predicted interaction was observed, t-tests for further analysis were done to determine the significance of the difference

between means for the scales pertinent to the altruism variable. According to these individual t-tests, the attempt to identify a more altruistic outlook in the experimental group was statistically different at the .01 level of confidence from the control group in the expected direction on all the scales considered pertinent except thoughtfulness, and on this variable the difference was significant at the .05 level.

Although specific differences on the remaining scales had not been predicted (since they were not considered particularly relevant to the attempt to identify an altruistic attitude), t-tests were also conducted on these results to pick up additional significant differences between the groups. This was done simply to expand the theoretical implications drawn regarding the comparisons of the ministerial and college students.

The fact that the seminarians rated higher in friendliness, thoughtfulness and personal relations on the Guilford-Zimmerman, as predicted, and also were significantly higher in restraint (seriousminded), sociability, emotional stability and objectivity (as versus hypersensitivity) is not claimed to indicate that they display

TABLE I
 GUILFORD-ZIMMERMAN TEMPERAMENT SURVEY
 ANALYSIS OF VARIANCE

SUMMARY TABLE

Source	df	Mean Squares	F
Between--Subjects	83		
Groups (G)	1	1751.63	22.21*
error (b)	82	78.87	
Within--Subjects	756		
Scales (S)	9	152.60	7.62**
GS	9	107.62	48.38**
error (w)	738	20.02	

** F.99(9,738)=3.27

* F.99(1,82)=11.97

more of these characteristics. It measures their self-perceived inclination to respond in such fashion to social stimuli. This may be idealized perception of their own behavior, but it would seem to reveal a desire to display the altruistic attitudes that this study attempts to isolate as possible contaminating factors in falsification and/or verification scales.

On the Allport Vernon Lindzey Study of Values, the experimental group registered scores significantly higher at the .01 level on social and religious scales, and significantly lower on the economic scale, as predicted. There was no statistically meaningful difference on the theoretical or aesthetic scale, but the seminarians were significantly lower on political values. The low scores on economic and political values for the seminarians do not demonstrate a lack of interest in these areas; the scoring system of the Study of Values is such that only relative, not absolute, values are revealed, because a high score in one area necessarily causes a lower one in another.

It must be emphasized that the demonstrated attitudes are not solely attributable to the ministerial status of the experimental group. These men were also

TABLE II
 STUDY OF VALUES
 ANALYSIS OF VARIANCE

SUMMARY TABLE

Source	df	Mean Squares	F
Between Subjects	83	--	
Groups (G)	1	--	
error (b)	82	--	
Within--Subjects	420	100.44	
Scales (S)	5	1250.61	21.55*
GS	5	2426.69	41.81*
error (w)	410	58.04	

* $F_{.99}(5, 410) = 3.09$

TABLE III
 GROUP DIFFERENCES ON TRAITS HELD
 INDICATIVE OF ALTRUISM

TRAITS	Mean Seminar- ians	Mean Collegi- ans	Level of Signifi- cance	Standard Deviation (combined)	t
<u>G-ZTS</u>					
Friendliness	19.90	12.64	.01	6.00	6.91
Thoughtfulness	21.83	19.74	.05	4.58	2.12
Personal Relations	20.00	15.71	.01	5.74	3.67
<u>S-V</u>					
Religious	55.07	38.88	.01	11.87	8.52
Social	44.88	35.57	.01	7.48	7.33
Economic	32.17	42.88	.01	9.11	6.73

older by several years, with consequent tempering of the rebelliousness against mores frequently associated with young college men. Furthermore, the experimental subjects were all volunteers, as opposed to the students drafted into the control group by their professor. Probably only the more altruistic of the seminarians were willing to give up an hour's time (immediately preceding the spring examination period) for the sake of this research; the result may be a group more inclined to altruism than would be obtained in a random sample of the seminary population. The presence of a high degree of the altruistic attitude was, of course, desirable in view of the aims of this study.

The profile of difference between the two groups on the Guilford-Zimmerman and the Study of Values backs the contention that the ministerial students can be considered more altruistic in their general attitude than the control group.

II. EFFECTS OF ALTRUISM ON THE FACADE MEASURES

On the Guilford-Zimmerman, significant differences at the .01 level of confidence were measured between the

groups on the falsification scale, with the experimental group obtaining a higher mean score on the scale. Since there seems to be no rationale for this group actually falsifying more than the control group, and since the personality testing indicates attitudes that would lend to making sincere positive responses to "good impression" questions, this result would cast doubt on the scale as an accurate measure of falsification. It would seem, as hypothesized, that those on opposing poles of a moral continuum--liars or altruists--may appear to be falsifying, as measured by the scale.

In regard to the verification scale of the Kuder, there was no statistically significant difference between the two groups. A total of twelve per cent of all the Kuder Preference Record-Vocational obtained scores in the doubtful range on the verification scale. These may have been due, as Kuder suggests, to carelessness or lack of understanding of test directions. This may be taken to give some validation to the verification scale as devised by Kuder for this test.

TABLE IV
 GROUP DIFFERENCES ON VERIFICATION AND
 FALSIFICATION SCALES

TRAIT	Mean Seminar- ians	Mean Collegi- ans	Level of Signifi- cance	Standard Deviation (combined)	t
<u>Kuder</u> Verification	40.56	41.14	--	2.45	1.10
<u>G-ZTS</u> Falsification	11.81	8.76	.01	3.87	3.82

CHAPTER V

IMPLICATIONS AND CONCLUSIONS

I. PRIMARY IMPLICATIONS

There are some fortunate implications in the fact that one of the lie scales investigated--the Kuder Vocational--proved invulnerable to the attempt to discredit it. This would indicate that it is possible to construct a facade measure which will implicate those responses made incorrectly or insincerely, but will not penalize those with high ideals sincerely held. The item analysis used by Kuder in devising his verification scale shows construct validity.

There are somewhat unfortunate implications in the fact that the other scale--on the Guilford-Zimmerman Temperament Survey--apparently falsely designated the

responses of the experimental group as insincere. Although it may be that facade measures are not given a great deal of credence by examiners using the instruments in which they are contained, it is all too possible that an appearance of faking, as indicated by such a scale, could have a negative bearing on the opinion formed of the subject taking such tests.

Some consideration must be given the view that factors other than altruism may have influenced the responses made by the ministerial group. A sincere need to maintain a favorable self-image, resulting in a form of unconscious role-playing or self-deception, could be postulated.

In brief, high fakability scores as demonstrated by the ministerial sample on the Guilford-Zimmerman scale are subject to a number of possible interpretations. One such interpretation would be one of complete sincerity on the part of the ministerial group. If this could be proved, it would be unjust to apply the Guilford-Zimmerman scale indiscriminately.

II. SECONDARY IMPLICATIONS

The by-products of this study--the establishment of comparative levels of values and personality traits for the experimental group--seems to provoke recognition of the need for further work in this area, although it is difficult to maintain scientific objectivity in evaluating the desirability of various traits and attitudes in an individual preparing for the religious ministry.

Conceivably, however, it would be beneficial for theological seminaries--as for other postgraduate training institutions--to screen their students regarding suitable personality characteristics for their chosen field. Religious work seems peculiarly attractive to certain individuals with strong personal needs for security, domination and/or power. Progressive seminaries would do well to attempt to ascertain areas of imbalance in their potential alumni and perhaps offer therapeutic counseling where needed. With this in mind, pilot study tests, to establish norms for this somewhat unique group, would be vital. A case in point would be the research done by James F. Hubbard entitled "A Study of the Occupational

Pattern of the Presbyterian Ministry of the Synod of North Carolina."

Acknowledging the presence of specific traits-- as was done in this study--would be inadequate for determining the usefulness of said traits in actual ministerial practice. Identifying the traits as present to a significant degree in groups of experienced, respected ministers would perhaps lay the groundwork for some scheme of a priori selection of those suited to this type of work. How the factor of Divine guidance could be reconciled with an objective approach of this type is yet another problem.

It has been stated that there were distinct differences between the ministerial and non-ministerial groups on most scales of the Guilford-Zimmerman Temperament Survey. There appear to be several possibilities for explaining this.

As has been pointed out, the ministerial group was older by several years, and had four to five more years of education (the ministers all being in the second or third year of their seminary training). This, having had the effect of tempering adolescent rebelliousness and hostilities, could lead to the assumption that any older group,

with more professional training, could show a similar degree of difference from the control group.

However, it would seem a foregone conclusion that those who choose the ministry as a profession are a special population, with attitudes necessarily different from people in general. The motivations of the individual ministerial students toward their profession may differ widely. They may involve such factors as a desire to promote better human understanding of the meaning of life in relation to theological revelations of the Creator, to foster better social relations (that is, love of man for fellow man), or a seeking to give of self in perhaps sacrificial service to others.

In all fairness, it must be noted that many ministers enter their profession because of a sense of being "called"; that is, these men feel God has directed them to this particular work, and they must enter it or they will be showing opposition to the Diety. This is an area which could, it seems, produce much fruitful study--in what form does the "call" come, are there any delusional aspects to the concept, what type personality is open to these supernatural experiences. Much investigation of this

sort perhaps could employ standard personality and projective tests. Despite the vagueness of this "called" concept, it must be acknowledged as a major factor in decisions to enter the ministry.

It would seem unlikely that economic gain would be an inducement to the religious ministry considering the disparity between pay scales of religious workers and those in other professions. (In this connection, though, it must be noted that many young men are able to obtain seminary training, with the help of various church organizations, who could not meet the financial demands of training in law, medicine, or other postgraduate fields.)

Professional status would meet the same pro and con outlooks for one choosing the ministry; while more easily obtained than some other professional ranks, it seems to merit a fluctuating degree of respect in modern society. These factors can give strength to a general conclusion that while men may choose the ministry for idealistic or altruistic reasons, there may also be underlying material reasons in their choice.

Discussion such as this does little to pin down the causes for the noted deviations between test responses of

the ministerial students and the sophomore psychology students. It does indirectly lead to consideration of another important aspect of the research: do the responses reflect the sincere attitudes of those taking the tests? In neither group was there any logical reason to falsify, since it was known results would not be used in any personally beneficial ways, would not be incorporated in school records, but were simply to aid in research. These assurances would diminish the likelihood of getting false answers; if there were such, they would be assumed to be normally distributed over both groups, with no consequent effects on the final comparisons. Does this give evidence that ministers actually exhibit superior personality traits, as measured by the Guilford-Zimmerman Temperament Survey? Not necessarily, for the Survey measures self-perceived inclinations to act in specific ways; it is conceivable that the prospective ministers have a high degree of need to perceive themselves as behaving in the most socially acceptable ways. (It is also conceivable that such need induced them to choose the ministry.) Therefore, it cannot be said that the men in the experimental group would always in actual situations respond in the highly favorable

way indicated by the Guilford-Zimmerman Temperament Survey. Yet, it does seem safe to conclude that they would want--strongly desire--to act in just such ways.

These deductions--that falsification would be normally distributed over the two groups, and that the experimental group would at least desire to behave in the fashion indicated by the Guilford-Zimmerman Temperament Survey results--give reason for accepting responses made on the Survey as the sincere attitude of the subjects involved.

On this basis, it would appear meaningful to examine the specific differences measured between the two groups. Only those scales in which there was a statistically significant difference (at the .01 level for all scales except thoughtfulness, which was at the .05 level) need be discussed. Although only the scales in which differences were predicted in the general hypothesis of this study are relevant in the context of the falsification scale inquiry, the others may be of interest simply as by-products.

That the ministerial group should exceed in restraint--indicating, according to the Guilford-Zimmerman

Manual, a serious minded attitude, persistent effort and self-control--could be largely attributable to the age difference and the fact that these men had necessarily developed persistence in their advanced scholastic striving. Also, self-control is not generally held to be a characteristic of males in their late teens, as were most of the psychology students. They might, at this stage in life, be expected to be more carefree and excitement-loving, which are on the negative pole of this scale.

Sociability is less easy to attribute to the observable differences between the groups. The Manual includes the qualities of having many friends and acquaintances, entering into conversations, and liking social activities in this category. These are all traits that would be expected of the college sophomore and, in fact, it was the third highest scale for the group. For the ministerial students to feel comparatively more inclined to display such attitudes could be linked to a general love of mankind, with accompanying enjoyment of the company of others and a desire to put others at ease (logically involving entering into conversations with them). Again, whether

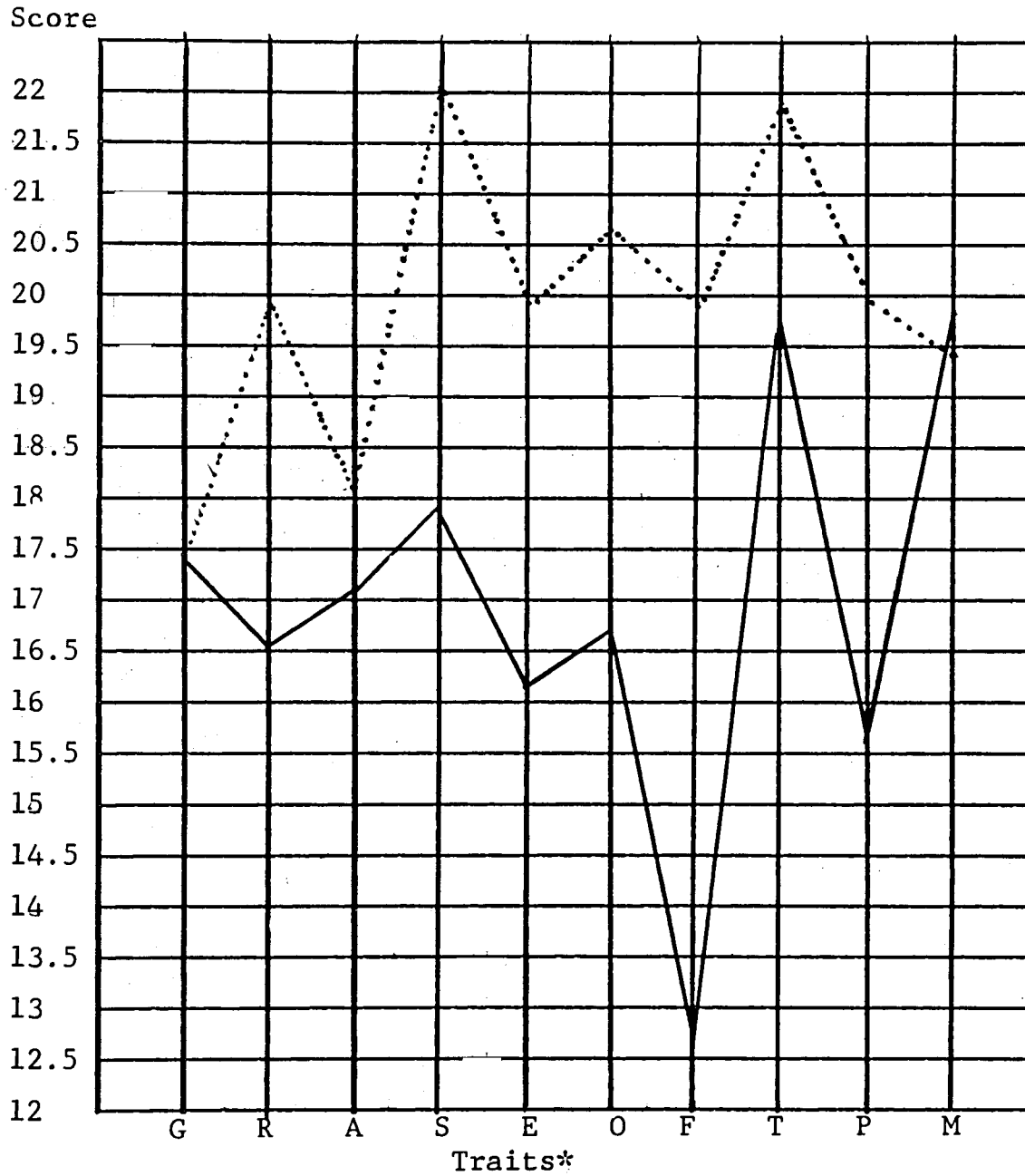


FIGURE I

Guilford-Zimmerman Temperament Survey Mean Profiles

- Control Group
- Experimental Group (Ministers)
- * See Table V

the test results indicate the seminarians consistently display these attitudes or simply feel strongly that they should act in such fashion, is a moot point. It is obvious, however, that an inclination to act in such sociable ways would probably be required of a practicing minister.

Self-perceived emotional stability is another area perhaps affected by age and experience differences. This category on the Guilford-Zimmerman Temperament Survey involves evenness of moods, interests and energies, along with optimism, cheerfulness and composure. The converse on this scale is fluctuation of moods, interests and energies, with gloominess, excitability and daydreaming. Changing interest is certainly more likely to be observed in the sophomores, many of whom perhaps had not made a choice of an academic major, and were committed to no all-encompassing goal in life. The optimism and composure measured in the seminarians is more readily attributable, it seems, to their religiously oriented philosophy of life, which could be expected to make life more acceptable (therefore happier) and personality less subject to composure-destroy-

ing doubts regarding self and society.

Objectivity, on the positive pole of the Temperament Survey, is described in the Manual by the single adjective "thickskinned." The negative qualities considered opposite this are egoism, self-centeredness, hypersensitiveness, fancying of hostility, suspiciousness, and getting into trouble. The last of these perhaps is readily seen as more likely to be expected of the college sophomores. Self-centeredness (and concomitant egoism) would also be less expected, rationally, of the somewhat more chronologically mature and socially experienced ministerial students. In addition, both egoism and the suspiciousness trait would seem incompatible with the prospective minister's theologically directed love of mankind. This leaves the original positive quality of "thickskinned" to be explained causally as to being predominant in the ministerial group. The word would seem to indicate an imperviousness to the opinion of others; perhaps it would be characteristic of the seminarians that they were so firmly convinced of the validity of their own concepts that the barbs of opposition would have little effect on them, thus desensitizing them to criticism.

The next attitude, friendliness, is regarded in the Manual as being characterized by toleration of hostile action, acceptance of domination, and respect for others. Opposed to this is belligerence, hostility, resentment, a desire to dominate, contempt for others, and a resistance to domination. Except for the last (resistance to domination) all these negative traits would be relatively incompatible with the aforementioned love of mankind the seminarians would be expected to possess. However, they are qualities which would seem somewhat consistent with the sophomore student's struggle to establish his independence from family ties. Consequently, the seminarians would be expected to veer away from responses indicating such attitudes, while the sophomores could be logically judged as favorably inclined toward them.

The thoughtfulness variable in the Guilford-Zimmerman Temperament Survey is defined by the Manual as embodying the qualities of reflectiveness, meditateness, philosophically inclined, mental poise, versus interest in overt activity and mental disconcertedness. Surprisingly, the differences between the two groups in this category were less significant. It would seem likely that the

seminarians would exhibit somewhat more of these positive qualities on the basis of their maturity and, primarily, their professed spiritual outlook on life. The fact that the two groups were no more diverse than they were in this category may be due to a religious orientation toward deeds (overt activity) rather than extended theorizing as a meaningful manifestation of their beliefs on the part of the seminarians. The quality of respect for others is also more to be expected of the theologically oriented group. Mental poise is possibly another age and experience linked variable with a consequent edge to be expected for the seminary students.

The final characteristic on which there was a meaningful difference between the groups was personal relations. This is explained as tolerance of people and faith in social institutions, versus hypercriticalness of people, fault finding habits, and criticalness of institutions. The religious outlook of the seminarians would appear to be a major cause of differing attitudes between the groups in regard to tolerance of people. That the ministerial students would express more faith in social institutions is to be expected since they are dedicated to leading a

social institution.

As already implied, there was not a meaningful difference between the groups on the masculinity variable. It would seem worthy of note that the seminarians' score being slightly below the college students' on this scale could be due to having genuine masculine tendencies (as of inhibition of emotional expressions, hardboiled) tempered by "motherly" attributes such as feelings of responsibility and concern for those perhaps nominally in their charge (13).

Following this review of the differences in self-perceived temperament measured between the two groups, some attention must be given the disparity in their personal values as measured by the Study of Values. It is notable, first of all, that scores of the control group of psychology students in this study closely paralleled those of the average male as depicted by the Allport Vernon Lindzey study through use of their standardization population which used college students. This would give strength to the assumption that the control group here employed was an adequate population sample for the purposes of the present research. The similarity of these two groups would to some

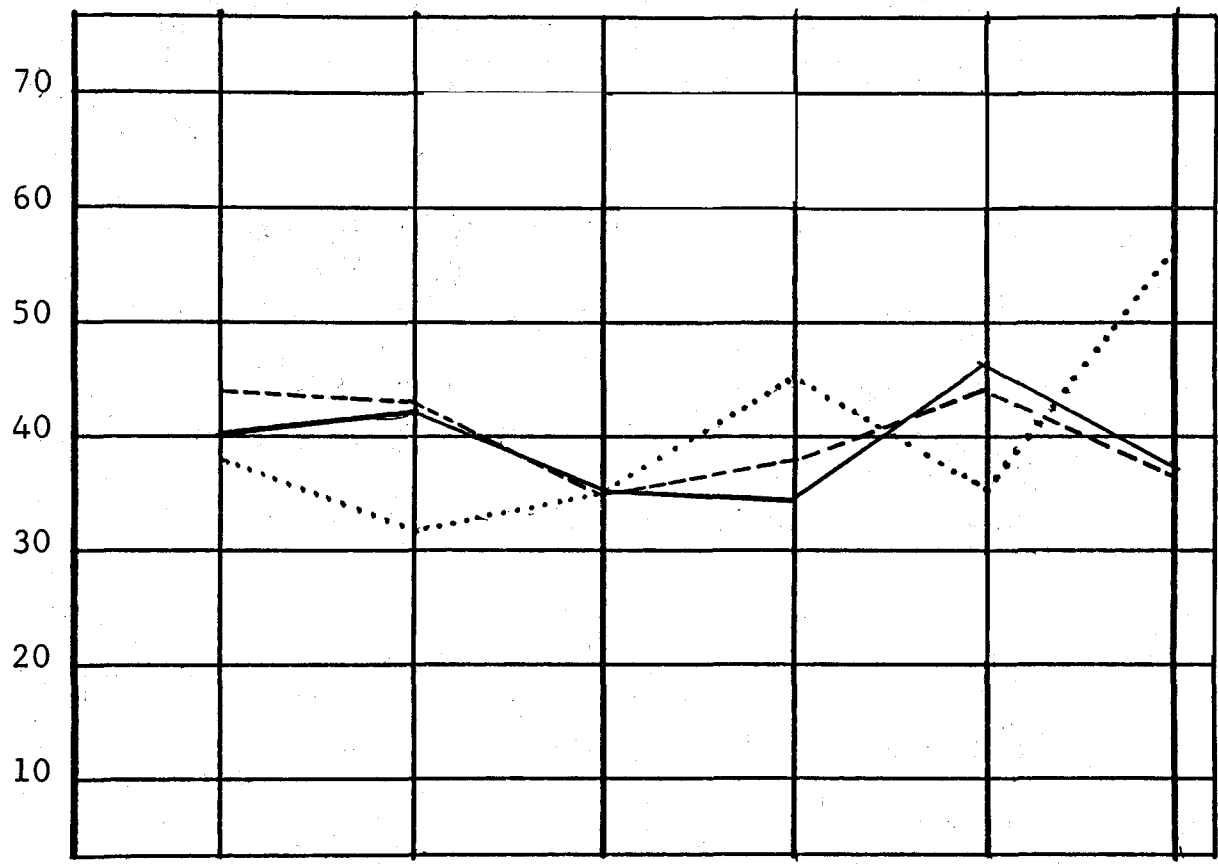
extent highlight their distinct differences from the scores made by the ministerial students in this study.

The differences to be discussed again are all statistically significant at the .01 level of confidence, as indicated earlier.

That the ministerial students would score lower on economic values, as they did, might be expected in connection with the non-material (spiritual) outlook on life which should be typical of these men and also with the realistic knowledge they must have that their chosen field is generally not productive of high financial reward.

According to the Manual of the Study of Values, an economic man would be primarily interested in what is useful or "practical" in regard to satisfying body needs; in his relations with people, he would be more concerned with surpassing them in wealth than in dominating them or serving them. Such attitudes would not be likely to induce a man into the ministry; it is easily understood why the seminarians scored low on economic interest.

Social value, in the Study of Values, is intended to refer to love of people; specifically, it is an altruistic or philanthropic aspect of love with accompany-



Theoretical Economic Aesthetic Social Political Religious

FIGURE II

STUDY OF VALUES

MEAN PROFILES

- Average Male (established in original test standardization)
- _____ Control Group
- Experimental Group (Ministers)

ing personality characteristics of kindness, sympathy, and unselfishness. In its purest form, this social attitude would be selfless and tend to approach close to the religious. That these qualities are highly regarded by the ministerial students would seem to be reflective of love of God and man indicated also in their professional choice, and would make them prime candidates for an altruistic group as was the intent of this study.

The seminarians were significantly lower than the college students on political values, or power motives, including desire for influence and renown. This result could be theorized to be partially the result of the rigid scoring system of the Study of Values, in which the sum of the subject's scores is set, and interest expressed in one area necessarily rules out the expression of interest in another. Consequently, the seminarians could have more power motives than here revealed; it can be concluded, however, that any such power motives are subordinate to their other value systems, such as social and religious. That the college sophomores, struggling to show their potential and gain autonomy, should exhibit interest in power is somewhat to be expected.

A priori consideration would clearly predict a significant difference between the groups on religious values, as of course was found. On the Study of Values, this trait is characterized by a mystical approach to affirmation of life and degree of participation therein. The highest quality would be unity, or a relating of self to the totality of the cosmos. Both the dedication of the ministerial students to religious work, and the intellectually questioning (agnostic) phase generally attributed to college sophomores would be of meaning in explaining the large difference between the two groups on this scale.

The preceding scale-by-scale review of the differences observed between the two groups used in this study, with theoretical proposals to explain such differences, is not especially pertinent to the main contention of the study--that of the inaccuracy of some falsification scales--but is presented to clarify such differences, since for statistical purposes these variations are regarded as part of the treatment itself. They are uncontrolled extraneous factors which were a prerequisite to obtaining a group high in altruism, such as was needed in this research. Whether looking for characteristics such as were here noted would

be of meaning to theological training schools in screening their applicants is open to question. It is even more questionable that noting a similar configuration of traits would give cause for a guidance counselor to suggest religious work to a counselee; such a decision, based on highly personal beliefs and traditionally guided by entirely non-scientific precepts, would probably not be effected by paper and pencil test results.

III. CONCLUSIONS

There is a need for some measure of the sincerity of a subject's responses in test-taking. This is rather clearly shown by the research evidence of the susceptibility of various tests to faking in specific directions. The problem rests in the adequacy or accuracy of the scales used for this purpose.

It would, at this point, perhaps be presumptuous to suggest that all facade measures be checked out on an altruistic group to determine their fairness in pinpointing fakers. Yet it seems evident that some measure of establishing this sort of validity is necessary.

Furthermore, it would seem that examiners using

TABLE V
 OVER-ALL DIFFERENCES BETWEEN
 GROUPS ON MEASURED TRAITS

<u>Trait</u>	<u>Mean</u> <u>Seminarians</u>	<u>Mean</u> <u>Collegians</u>	<u>Level of</u> <u>Significance</u>	<u>t</u>
<u>(Guilford-Zimmerman</u>				
<u>Temperament Survey)</u>				
General Activity	17.47	17.33	--	.11
Restraint	19.98	16.69	.01	3.46
Ascendance	18.14	17.14	--	.99
Sociability	22.12	17.95	.01	3.09
Emotional Stability	19.95	16.28	.01	2.91
Objectivity	20.07	16.71	.01	2.90
Friendliness	19.90	12.64	.01	6.91
Thoughtfulness	21.83	19.74	.05	2.12
Personal Relations	20.00	15.71	.01	3.67
Masculinity	19.45	19.83	--	.44
<u>(Study of Values)</u>				
Theoretical	37.98	40.81	--	1.59
Economic	32.17	42.88	.01	6.73
Aesthetic	34.67	36.64	--	--
Social	44.88	35.37	.01	7.33
Political	35.10	45.14	.01	8.73
Religious	55.07	38.88	.01	8.52

present tests with such scales should be alerted to the possible inaccuracy of these facade measures.

There seems to be a wide field of research open to the determination, on various tests, of the accuracy of their accompanying measures of sincerity. Until such research is done, any and all facade measures would seem open to suspicion.

CHAPTER VI

SUMMARY

This study investigated the variables measured by the verification scale of the Kuder Preference Record-Vocational and the falsification scale of the Guilford-Zimmerman Temperament Survey. Responses of an experimental group of Protestant seminary students were compared with those of a control group of general psychology students. These groups were shown to be different in self-perceived values and attitudes, as defined by results on the Allport Vernon Lindzey Study of Values and the Guilford-Zimmerman Temperament Survey, with the experimental group presenting the more altruistic outlook. This was taken to indicate that this group would not be falsifying in giving positive answers to the "good impression" questions of the facade scales.

It was found that the two groups did not show a meaningful difference on the Kuder Preference Record verification scale.

On the Guilford-Zimmerman Temperament Survey falsification scale, however, the experimental group showed significantly higher scores. This still leaves the question open as to what this falsification index really means concerning the true intentions or motivation of this group.

A by-product of the study was the delineation of differing variables of temperament and values between the two groups. The ministerial students were revealed as placing higher value than the control group, at the .01 level of statistical significance, in religious and social areas. Also significantly higher at the .01 level were the self-perceptions of the experimental group of exhibiting friendliness, thoughtfulness, good personal relations, restraint, sociability, emotional stability and objectivity. The control group placed significantly higher value on political and economic interests. Differences between the groups on the remaining scales of the two tests were not significant.

The significant differences between the value system of the ministerial group and the control group strongly suggest, but do not prove, that the ministerial group may be described as altruistic in philosophical outlook and that this orientation could strongly influence certain test responses in the direction of apparent falsification. If true, the falsification index in the case of the ministerial group may well have a very different interpretation from the meaning that falsification scores would have for other groups.

BIBLIOGRAPHY

BIBLIOGRAPHY

- (1) Allport, G. W., Vernon, P. E., and Lindzey, G.
Manual of Directions Study of Values. Boston:
Houghton Mifflin Company, 1960.
- (2) Baggaley, Andrew R., "Comparison of Temperament
Scores of Jewish and Gentile Male Subjects."
Psychological Reports, 1963. Vol. 13(2). p.
598.
- (3) Brown, William F. and Abeles, Norman. "Facade
Orientation and Academic Achievement."
Personnel Guidance Journal 1960. pp. 283-286.
- (4) Buros, Oscar K. (ed.). The Fourth Mental Measurements
Yearbook. New Jersey: The Gryphon Press. 1959.
p. 49.
- (5) _____, The Fifth Mental Measurements Yearbook. New
Jersey: The Gryphon Press. 1959. p. 59.
- (6) Cassell, Russell N., "Comparing IBM Cards and Hand
Scoring Pad Administration of the Kuder
Preference Record." California Journal of
Educational Research. 1963. Vol. 14(1). pp.
31-35.
- (7) Cook, Desmond L., "A Note on the Relationship
Between Minnesota Teacher Attitude Inventory and
Guilford-Zimmerman Temperament Survey Scores for
Three Levels of Teacher Experience." Journal of
Educational Research. 1962. Vol. 55(8). pp.
363-367.
- (8) Cross, Orion H., "A Study of Faking on the Kuder
Preference Record." Educational and
Psychological Measurement. 1950. Vol. 10.
pp. 271-277.
- (9) Durnall, Edward J., Jr., "Falsification of Interest
Patterns on the Kuder Preference Record."
Journal of Applied Psychology. 1954. Vol. 45.
pp. 240-243.

- (10) Garry, Ralph. "Individual Differences in Ability to Fake Vocational Interests." Journal of Applied Psychology. 1953. Vol. 37. pp. 33-37.
- (11) Goldstein, Arnold P., "The Fakability of the Kuder Preference Record and the Vocational Apperception Test." Journal of Projective Techniques. 1960. Vol. 24. pp. 133-136.
- (12) Green, Russell F., "Does a Selection Situation Induce Testees to Bias Their Answers on Interest and Temperament Surveys?" Educational and Psychological Measurement. 1951. Vol. 11. pp. 503-515.
- (13) Guilford, J. P. and Zimmerman, Wayne S. The Guilford-Zimmerman Temperament Survey Manual of Instruction and Interpretation. California: Sheridan Supply Company. 1949.
- (14) Herzberg, Frederick. "Temperament Measures in Industrial Selection." Journal of Applied Psychology. 1954. Vol. 38. pp. 81-84.
- (15) Jackson, Jay M., "The Stability of Guilford-Zimmerman Personality Measures." Journal of Applied Psychology. 1961. Vol. 45(6). pp. 431-434.
- (16) Jacobs, Alfred and Schlaff, Allan. "Falsification of the Guilford-Zimmerman Temperament Survey." Psychological Newsletter. 1959. Vol. 10. pp. 138-145.
- (17) Kenoyer, Marie Francis. "The Influence of Religious Life on Three Levels of Perceptual Processes." Dissertation Abstracts. 1961. Vol. 22(3). p. 902.
- (18) Kuder, G. Frederic. "Expected Developments in Interest and Personality Inventories." Educational and Psychological Measurement. 1954. Vol. 14. pp. 265-271.

- (19) _____. "Identifying the Faker." Personnel Psychology. 1950. Vol. 3. pp. 155-167.
- (20) Longstaff, Howard P., "Fakability of the Strong Interest Blank and the Kuder Preference Record." Journal of Applied Psychology. 1948. Vol. 32. pp. 360-369.
- (21) Patterson, D. G., "Vocational Interest Inventories in Selection." Occupations. 1946. Vol. 1. pp. 253-268.
- (22) Rimland, Benard. "Personality Test Faking: the Expressed Willingness of College Men to Fake on a Personality Test." United States Navy Bureau of Naval Personnel Technical Bulletin. 1960. No. 60-13.
- (23) Rothney, John and Schmidt, Louis G., "Some Limitations of Interest Inventories." Personnel Guidance Journal. 1954. Vol. 33. pp. 199-204.
- (24) Ruch, F. L., "A Technique of Detecting Attempts to Fake Performance on the Self-Inventory Type of Personality Test." Studies in Personality. McNemar, Q. and Merrill, M. A.
- (25) Sutter, Cyril Robert. "A Comparative Study of the Interest and Personality Patterns of Major Seminararians." Dissertation Abstracts. 1961. Vol. 22(1). pp. 328 (abstract).

APPENDIXES

APPENDIX A

Raw Scores of Subjects--Experimental and Control Groups--
on the Guilford-Zimmerman Temperament Survey.

Experimental Subjects	Scale									
	G	R	A	S	E	O	F	T	P	M
1-E	21	19	22	25	21	20	23	22	27	22
2-E	18	16	21	28	29	26	25	17	25	19
3-E	12	22	18	23	25	27	21	24	26	18
4-E	16	23	19	26	17	14	23	25	20	20
5-E	15	23	14	18	19	28	24	18	28	21
6-E	17	20	17	19	24	13	14	18	13	15
7-E	21	20	23	27	22	26	23	21	17	19
8-E	16	22	21	25	21	21	27	23	26	20
9-E	26	21	19	25	12	17	15	22	13	15
10-E	8	22	16	24	25	26	22	21	24	24
11-E	19	19	21	26	25	28	24	21	24	22
12-E	20	22	24	25	25	27	21	24	23	14
13-E	17	8	10	4	7	11	6	21	5	14
14-E	15	23	21	25	16	22	15	27	25	23
15-E	19	22	19	24	19	19	21	24	24	21
16-E	16	19	16	25	17	19	20	25	20	22
17-E	14	23	11	19	13	13	14	21	18	16
18-E	17	17	15	18	14	14	15	26	21	22
19-E	12	22	22	19	21	18	25	28	19	21
20-E	26	18	12	20	23	22	12	22	13	25
21-E	17	25	19	22	12	18	22	27	13	20
22-E	15	21	11	16	13	14	20	16	16	19
23-E	12	24	19	21	29	20	24	25	24	21
24-E	16	24	22	17	19	19	16	27	26	11
25-E	17	21	23	27	23	22	19	21	21	20
26-E	26	17	16	22	18	19	20	23	26	20
27-E	15	20	12	24	22	21	26	19	13	22
28-E	17	26	23	25	27	29	24	24	23	24
29-E	23	19	14	15	18	23	17	9	25	25
30-E	12	18	17	24	18	16	22	20	15	19
31-E	24	21	21	27	25	23	22	26	17	12
32-E	12	15	15	19	19	22	14	20	10	12
33-E	13	20	21	14	22	21	14	19	24	23
34-E	20	20	24	25	24	23	20	23	17	21
35-E	21	19	10	16	18	16	15	12	25	15
36-E	23	12	19	26	20	18	26	22	20	21
37-E	16	17	23	25	14	9	18	25	16	17

APPENDIX A (continued)

	G	R	A	S	E	O	F	T	P	M
38-E	15	24	14	19	16	13	22	24	16	17
39-E	12	18	21	25	25	22	17	27	23	20
40-E	14	17	18	22	27	21	20	11	26	26
41-E	23	20	21	27	18	20	25	22	16	21
42-E	26	20	18	27	16	23	23	25	17	18
Control Subjects										
1-C	23	17	15	22	22	24	18	27	19	15
2-C	20	20	19	27	5	15	13	16	20	15
3-C	12	14	12	6	17	23	17	23	23	24
4-C	25	14	23	30	19	19	14	17	20	22
5-C	13	17	15	19	16	23	14	20	11	20
6-C	11	24	10	21	22	26	17	25	26	20
7-C	25	23	19	19	5	7	20	23	14	6
8-C	30	19	20	18	18	22	20	23	27	24
9-C	27	10	26	28	18	19	8	24	17	20
10-C	20	8	17	18	23	27	17	5	17	24
11-C	22	20	22	28	24	22	21	21	26	24
12-C	9	18	10	8	11	13	16	20	11	19
13-C	17	17	14	17	17	17	13	15	17	24
14-C	9	24	13	8	17	13	17	19	15	20
15-C	7	24	12	17	25	19	20	16	21	13
16-C	21	16	12	2	4	7	4	22	4	21
17-C	19	20	19	15	14	19	14	23	16	18
18-C	18	13	12	21	24	22	15	14	21	21
19-C	17	22	15	15	5	14	6	21	18	12
20-C	21	9	23	28	18	15	4	12	9	22
21-C	18	23	21	21	13	12	14	26	19	19
22-C	15	17	9	15	21	17	6	23	16	23
23-C	20	15	18	24	22	24	10	20	18	23
24-C	19	16	18	20	25	23	21	20	19	27
25-C	27	16	24	11	9	10	13	16	9	21
26-C	28	9	21	23	15	15	9	19	15	13
27-C	25	20	20	27	14	15	12	24	15	19
28-C	7	13	6	4	7	19	9	25	10	15
29-C	14	10	20	24	24	18	7	13	12	18
30-C	20	18	18	18	13	9	13	19	19	20

APPENDIX A (continued)

	G	R	A	S	E	O	F	T	P	M
31-C	17	4	12	7	12	6	4	10	10	19
32-C	16	9	7	2	3	3	9	17	4	21
33-C	19	28	24	16	16	13	13	23	20	16
34-C	21	19	27	25	24	24	11	20	15	21
35-C	7	21	19	14	19	19	8	24	12	26
36-C	23	15	18	23	25	21	20	28	17	21
37-C	14	10	22	20	10	11	4	14	11	21
38-G	7	19	18	20	21	19	12	23	16	24
39-C	13	18	19	24	22	19	10	18	14	20
40-C	15	19	12	17	20	13	17	19	15	17
41-C	5	18	18	10	13	16	9	20	12	22
42-C	12	15	21	22	12	14	12	22	10	23

APPENDIX B

Raw Scores of the Subjects--Experimental and Control Groups--
on the Allport Vernon Lindzey Study of Values.

Experimental Subjects	Scale					
	T	E	A	S	P	R
1-E	39	26	40	46	37	52
2-E	37	27	33	48	34	61
3-E	37	33	30	45	37	58
4-E	48	25	28	44	36	59
5-E	32	33	43	46	34	52
6-E	41	41	30	39	30	59
7-E	30	38	35	42	39	56
8-E	41	38	29	41	32	59
9-E	32	30	42	37	40	59
10-E	38	30	44	43	29	56
11-E	43	20	42	45	41	49
12-E	32	40	38	45	37	48
13-E	32	24	45	43	39	57
14-E	38	32	45	48	25	52
15-E	32	30	35	49	38	56
16-E	42	32	24	49	35	58
17-E	27	30	27	49	49	58
18-E	40	22	41	41	39	57
19-E	39	32	33	52	23	61
20-E	43	44	21	39	42	51
21-E	42	30	30	45	35	58
22-E	41	33	32	43	33	58
23-E	35	28	42	40	32	63
24-E	36	18	50	50	25	61
25-E	45	29	30	44	35	57
26-E	36	44	33	45	31	51
27-E	33	41	24	44	39	59
28-E	40	29	32	45	35	59
29-E	43	36	29	43	33	56
30-E	26	26	32	51	46	59
31-E	45	39	43	45	28	40
32-E	40	39	41	45	34	41
33-E	45	32	44	31	41	47
34-E	45	26	32	53	36	48
35-E	25	30	33	51	40	61
36-E	43	31	22	48	40	56

APPENDIX B (continued)

	T	E	A	S	P	R
37-E	26	39	31	48	41	55
38-E	39	34	38	50	23	56
39-E	45	28	35	49	29	54
40-E	51	37	29	38	37	48
41-E	38	38	38	38	37	51
42-E	37	36	32	48	28	59
Control						
Group						
1-C	37	43	37	38	39	46
2-C	27	37	47	52	21	56
3-C	34	37	46	38	46	39
4-C	51	37	28	37	47	40
5-C	35	33	40	42	40	50
6-C	43	52	26	36	41	42
7-C	39	29	54	28	42	48
8-C	32	36	42	32	57	41
9-C	57	42	40	28	54	19
10-C	44	41	33	40	50	32
11-C	31	36	37	49	34	53
12-C	26	34	34	35	54	57
13-C	46	50	30	40	40	34
14-C	32	26	36	41	46	59
15-C	35	53	38	39	37	38
16-C	56	45	26	29	47	37
17-C	36	43	28	38	43	52
18-C	54	38	36	23	44	45
19-C	32	56	32	33	54	33
20-C	44	37	49	36	39	35
21-C	54	43	24	30	42	47
22-C	51	59	35	30	46	19
23-C	45	48	38	27	57	25
24-C	49	39	33	41	43	35
25-C	50	47	20	32	49	42
26-C	29	48	28	36	52	47
27-C	37	53	28	40	58	24
28-C	36	27	63	34	27	53
29-C	30	39	28	42	56	45
30-C	39	38	54	44	31	34

APPENDIX B (continued)

	T	E	A	S	P	R
31-C	46	49	36	40	53	16
32-C	57	50	40	20	51	22
33-C	48	50	44	29	41	28
34-C	36	50	46	26	47	35
35-C	54	48	39	31	42	26
36-C	38	42	29	45	46	40
37-C	32	58	28	35	59	28
38-C	36	45	31	33	47	48
39-C	33	46	24	36	66	35
40-C	26	39	58	38	35	44
41-C	56	50	32	26	44	32
42-C	42	29	42	45	29	53

APPENDIX C

Raw Scores of Subjects--Experimental and Control--on the Guilford-Zimmerman Temperament Survey Falsification Scale and the Kuder Preference Test-Vocational Verification Scale.

Experimental Subjects	Kuder (V) V-Score	Guilford-Zimmerman F-Score
1-E	40	13
2-E	43	23
3-E	41	18
4-E	43	9
5-E	38	14
6-E	41	15
7-E	42	8
8-E	44	16
9-E	41	8
10-E	42	12
11-E	42	17
12-E	41	11
13-E	40	8
14-E	42	10
15-E	42	8
16-E	38	11
17-E	43	11
18-E	39	8
19-E	41	11
20-E	40	7
21-E	42	8
22-E	44	6
23-E	42	21
24-E	42	13
25-E	41	13
26-E	40	10
27-E	40	13
28-E	40	17
29-E	39	7
30-E	41	12
31-E	40	16
32-E	43	12
33-E	42	11
34-E	39	16
35-E	39	6

APPENDIX C (Continued)

Experimental Group	Kuder (V) V-Score	Guilford-Zimmerman F-Score
36-E	42	12
37-E	42	6
38-E	43	13
39-E	41	9
40-E	39	7
41-E	38	15
42-E	37	15
43-E	34	
44-E	36	
45-E	36	
Control Group		
1-C	42	10
2-C	34	7
3-C	37	9
4-C	38	13
5-C	37	9
6-C	44	13
7-C	44	8
8-C	42	10
9-C	43	9
10-C	40	10
11-C	44	16
12-C	42	6
13-C	44	9
14-C	43	5
15-C	42	9
16-C	42	6
17-C	41	9
18-C	43	10
19-C	43	6
20-C	41	9
21-C	41	9
22-C	42	5
23-C	41	13
24-C	37	10

APPENDIX C (continued)

	Kuder (V) V-Score	Guilford-Zimmerman F-Score
25-C	43	7
26-C	40	9
27-C	44	14
28-C	37	13
29-C	41	8
30-C	43	2
31-C	44	2
32-C	41	11
33-C	43	14
34-C	42	7
35-C	39	11
36-C	37	4
37-C		8
38-C		10
39-C		6
40-C		7
41-C		6

APPENDIX D

The following is a review of the tests used in measuring personality variables in this study.

I. GUILFORD-ZIMMERMAN TEMPERAMENT SURVEY

This test was first published in 1949; norms for it came out in 1955. It is for use with grades nine through sixteen and adults. According to William Stephenson, writing in The Fourth Mental Measurements Yearbook (4), its data and supporting norms are all adequate, thorough, and factually oriented. Its traits are held to be unique and uncorrelated.

Critic Stephenson says, in reference to the test, that temperament traits sometimes correspond to our behavior as observed by others--when one is sad he feels it and others can see it in his demeanor. But when one saves a life and is called brave by others, he may in fact feel quite frightened and horrified with not at all a brave feeling. Temperament traits imply that a personality looks the same from both an "internal frame of reference" and an "external frame."

The present study has tried to make it clear that

the traits measured by the Guilford-Zimmerman Temperament Survey are herein considered to be self-perception--that is, are taken as being an "internal frame of reference."

II. THE ALLPORT VERNON LINDZEY STUDY OF VALUES

The Allport Vernon Lindzey Study of Values, first published in 1931, was revised in 1951 and again in 1960. It is for use with grades thirteen and over.

Reviewer N. L. Gage in The Fifth Mental Measurements Yearbook (5) claims that the relative scale employed reduces everyone's profile to the same mean level, imposes negative correlations among scores and imprisons predictive efforts within a possibly inappropriate model. Although this may to some extent be true, the test does give a striking comparison of an individual's differing value systems--which could be quite helpful in promoting self-understanding. Indeed, in an individual who places high value on the pertinence of many areas of life, it may be important to ascertain which area is most important in relation to all the others considered.

According to Gage, the test also confounds to some extent two psychological dimensions which could be separated:

interest and values. An individual, he says, can be interested in a given area even though he has a strong disagreement with individuals or institutions operating in that area (an atheist can be interested in religion). In defense of the test, it can be said that it does not seem to attempt to measure detached objective interest in the six areas considered, but is seeking to determine the relative importance of that area in shaping an individual's life-- therefore, its value to him. Unfortunately, the term, "interest" is used in the Manual in stating what the test aims to measure; but, it is used in context with "motives," thus denoting guiding interests rather than the detached ones an atheist might have for religion. The problem seen by Gage seems to have purely semantic origins. He refers to a different type interest from that considered by the Study of Values.

For the purposes of this study, the test is felt to be an accurate indice of the variables under consideration.