A Concurrent Validity Study with the Guilford-Zimmerman Temperament Survey

James B. Harney
Loyola University Chicago

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A CONCURRENT VALIDITY STUDY WITH THE
GUILFORD-ZIMMERMAN TEMPERAMENT SURVEY

by

James Harney, O.P.

A thesis Submitted to the Faculty of the Graduate School of Loyola University in Partial Fulfillment of the Requirements for the Degree of Master of Arts

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I would like to take this opportunity to thank all of the students who so generously gave their time as subjects in this study. I wish also to thank all of the faculty members at Loyola who have trained me in the field of clinical psychology. I want to especially thank Dr. Frank Kobler, director of this thesis, for being so liberal with his time and thoughtful in his efforts to help in the design and execution of this study.
Vita

Father James B. Harney was born in Chicago on April 5, 1924. He was educated in the Chicago area and received his A.B. in 1949 from De Paul University. In 1951 he received his M.A. in philosophy from the University of Toronto. He entered the Dominican Order in 1953 and was ordained in 1958. In 1959 he received the Lectorate in Theology. He was awarded the Lilly Fellowship in 1962 and worked in the field of psychology and religion at the University of Illinois. In 1963 he received an A.B. degree in psychology at the University of Montreal.
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Chapter 1

Purpose

The purpose of this thesis is to investigate temperamental characteristics within a community of religious men. A review of the literature indicates that very little information is presently available. The available information was found incomplete in the sense that such basic statistics as raw scores, means, standard deviations, standard errors of obtained scores and means, standard errors of mean differences, split half reliabilities and intercorrelation coefficients were missing. The absence of such information prevents meaningful comparisons both between and within groups. The inclusion of such data in this investigation was one major purpose.

A second major purpose was the assumption that within the area of personality, temperamental characteristics play a crucial role in determining how one is judged as an acceptable member in community life. A religious community is a unique society in having its own special goals, means to those goals, values and rules of conduct. It was assumed that members receiving the highest degree of community approval could be distinguished from those receiving low community approval on the basis of differences in temperamental factors.

The third major purpose of this investigation was to discover precisely the relative importance of each of the ten temperament factors investigated as they apply to the life
of a religious community. It was assumed that commonness of means, goals and values would be reflected by the degree of agreement reached and reflected in ranking of the ten temperament factors studied. By determining which of the factors are most important to the community a more meaningful analysis and interpretation of an individual record should result. This type of information is valuable for both personality assessment and individual counseling.

Lastly, this investigation studied the effects resulting when community members were asked to rate each other in the area of temperament. It was assumed that if provided with a common and clearly specified definition of temperament, the degree of agreement in ranking each other would exceed the chance level. Such agreement provides evidence that constant, rather than random, factors are operating. This study demonstrated that to achieve consensus of agreement it is necessary to specify clearly the criteria required in making the judgment.

In essence, this study was undertaken to provide information in answer to the questions: (a) can the Guilford-Zimmerman Temperament Survey discriminate between a high and low approval group?; (b) can members of a religious community significantly agree in ranking ten temperament factors in their order of importance to community life?; (c) can members of a religious community significantly agree in ranking each other in the area of temperament?
The experimental hypotheses are formally stated as follows:

Hypothesis 1: When given specific criteria by which to judge, the degree of concordance in ranking ten temperament traits in their order of importance to the religious life will exceed a chance level.

Hypothesis 2: When applying a global definition of temperament to classmates, a group will reach a degree of concordance beyond the chance level.

Hypothesis 3: Scores on the Guilford-Zimmerman Temperament Survey can successfully discriminate between a high and low approval group.
Chapter 2
Review of the Literature

Since its introduction in 1949, the present form of the Guilford-Zimmerman Temperament Survey (henceforth to be referred to as the GZTS) has been extensively used in a variety of ways. The sixth edition of Buros lists 173 references. The present form of the GZTS is a result of the work of J.P. Guilford between 1930 and 1948. Its construction relied mainly on a factor analytic approach to the components of temperament. The GZTS manual (1949) states that the present items and factors are a distillation from four previous inventories: The Nebraska Personality Inventory; The Guilford-Martin Personnel Inventory I; The Guilford-Martin Inventory of Factors G,A,M,I,N; and The Inventory of Factors S,T,D,C,R.

Guilford began his early work by considering the concepts of extraversion and introversion (1930). He felt that the technique of Spearman, in searching for general, group and specific factors, might well be utilized in investigating personality traits. In 1934, Guilford published his early studies using factor analytic methods. Results indicated that a number of factors were required to account for the correlation obtained. Guilford (1936) tentatively identified them as social introversion-extraversion; emotional sensitivity; impulsivity; and self-interest. As factor analytic techniques
improved, he decided to reexamine his data and concluded that there were five independent dimensions of personality. With time various factors were identified and combined into the early inventories. The GZTS was motivated by intercorrelational studied with the earlier inventories, the results indicating that an overall consolidation was both possible and practical.

Selection and weighing of the GZTS items was accomplished by item internal-consistency analysis which yielded ten primary factors. The manual reports split-half reliabilities ranging between .75 and .87. The standard error of obtained scores ranged between 2.2 and 2.6. Thus, using twice the estimated standard error, its expected that any obtained score will not differ by more than five points from the true score. In Guilford's opinion, the intercorrelations, which range from .01 to .69, are "gratifyingly low," the highest still accounting for less than half the variance of the other. Guilford's conclusion is this presents good evidence for the unique contribution made by each factor to traits identified with temperament.

Evaluations of the GZTS

Cattell (1950), in referring to the two earlier inventories generating the GZTS, valued Guilford's work as outstanding for its technical skill and thoroughness. Stephenson (in Buros, 1949) is also favourable but raised two methodological issues that
focused upon the relative orthogonality of the factors. He noted that given ten uncorrelated traits, if each is used to indicate only two values (e.g. above or below the mean) for each trait, 1,024 temperament classifications are possible. While this may please those believing in temperament's uniqueness, it displeases those believing it to be less complex. While Stephenson's observation is statistically valid, it doesn't appear to credit the possibility of a pattern analysis approach being employed as is usually the case. Being a pure statistical conclusion also ignores valuable information resulting from a qualitative analysis possible for both individual and group records. It would appear illogical to hold that combining any given pair will yield equally valuable information about personality. Stephenson's second methodological issue states that, given the premise of ten uncorrelated traits, there must be on the whole, an equal number of persons for each of the 1,024 possibilities. Thus, with 2,048 college students, one would expect two people in each combination. Once again, while statistically true the intercorrelations published by Guilford make quite clear that the ten factors are not absolutely but only relatively orthogonal.

Neil Van Steenberg (in Buros, 1949) in his evaluation notes that the means and standard deviations for both sexes are substantially the same, the exception being the expected bimodal distribution in the masculinity factor. He judges
the intercorrelations as "generally small" enough to allow "us to accept the existence of ten separate dimensions." One question raised relates to the number of question mark type answer permissible in the GZTS. Steenberg notes the manual's statement that more than three question marks per factor may make the total score suspect. He reports that when a number (unspecified) of psychologists took the GZTS, they averaged more than three per factor. Another question raised refers to the manual's opinion that a record is suspect when eight or nine scores are above the median value. This, he felt, would be true if the traits were truly independent. However, there is ample evidence indicating that favourable traits are positively correlated and this belief of Guilford requires experimental evidence to verify it.

David Saunders (in Buros, 1959) in his review concludes that the GZTS may be judged useful in two respects: for individual evaluation and in personality research. He contends that the former purpose should require reliabilities of .80 or more and that in its present form, the GZTS seems best used for research purposes. Here it is possible to accept coefficients in the order of .50 or above since one may hope of eventually attaining an improved correlation coefficient. Guilford (1946) has stated that tests with reliability coefficients "as low as .35 have been found useful when utilized in batteries with other tests." Saunders concludes that for practical application
with individuals, concentration should focus on changes helping to raise reliabilities, even if overall length should result.

Literature Relating to Validity

The GZTS manual (1949) states that the internal or factorial validity of scores is fairly well assured by its foundation in factor analysis investigations. In addition, this assurance rests on the successive item-analyses which were directed toward internal consistency and uniqueness of factors. The overall conclusion of Guilford is that what each score measures appears to be fairly well defined and represents a confirmed dimension of personality. The manual indicates that evidences of its practical validity have accumulated but most of them apparently refer to the earlier inventories. Guilford states that the evidence obtained by the earlier inventories "can be applied with confidence to the scores on the present Survey (1949)." It is most unfortunate that the specific references were not included in the manual's bibliography. One notable defect in the GZTS manual is the lack of bibliographical information of almost any sort. It states, but does not document, that the most impressive validity data were found in using the inventories with supervisory and administrative personnel.

Keys and his associates (1950) have provided indirect evidence of validity from the effects of semi-starvation diets on men. Their well designed experiment indicated that the GZTS
scores reflected changes in temperament. These changes appeared on factors reflecting depression and nervousness, sociability, emotional stability, ascendency, confidence and general activity. The study is of particular value in indicating the effects of temporary states on temperament since the starvation condition extended for only 24 days. It also indicates that the physical state and organic changes effect notable changes on GZTS performance. This would appear to be an important consideration to bear in mind in any individual evaluation using the survey.

A.R. Baggaley (1963) studied male college students who were differentiated on the basis of race (jewish vs. gentile) and concluded that the factor of race is unimportant in temperament. This conclusion appears to be in need of more qualification however since no controls over ethnic purity were reported. Furthermore, jewish and gentile subjects would appear to be more a matter of religious affiliation than racial factors. Baggaley's dichotomy apparently infers that the genetic differences do not influence temperament characteristics but his investigations would not support this conclusion since genetic variables were not controlled.

A.W. Bendig's well designed experiment (1960) investigated both the factor organization of the GZTS and the effects of age on the various traits. Four groups of 100 subjects each, separated by ten year intervals, ranged from 20 to 60 years. His general conclusions were that the ten factors showed
significantly and linearly related changes. Decrease in scores with increase in age appeared on factors relating to general activity, ascendency, sociability and masculinity. The other scales showed an initial increase, then a decrease pattern. This cross sectional study does not imply that the male subjects showed personality changes with age, but that personality differences existed among groups of subjects born between 1899 and 1928. Whether the trait differences reflect age changes in the subjects or differences in the early environmental influences on personality formation in childhood cannot be assessed from Bendig’s study. The study’s value lies in its clear evidence that any comparison between differing groups must allow or control for age differences.

Murray and Galvin’s report (1963) on correlational studies between the GZTS and the MMPI presents three such investigations. In general, the results show, that due to scoring procedures and interpretation, most correlations are negative. The underlying reason is that a high score on the MMPI indicates poor adjustment, while the opposite is true for the GZTS. This general principle is in need of qualification however since the GZTS manual states that there are several curved regressions. Therefore in most cases the optimal score does not extend to the top of the scale but is somewhere below this point. In effect, the GZTS scales are best viewed as bipolar, that is, scores at either extreme indicate possible negative evidence
in judging personality adjustment.

Murray and Galvin's first study correlated the ten GZTS factors and the nine MMPI clinical scales. Of the 90 intercorrelations, 62 were negative, 41 being significantly so. Fifty seven of the 90 were significant when testing 'r' against the null hypothesis, 47 of these at the .01 level. Of special interest is that GZTS factors E(emotional stability) and O(objectivity) correlated at .01 with the MMPI psychotic scales(i.e. Sc, Pa, Ma, D) as well as with the Pt. scale. This gives evidence to support Guilford's contention(1949) that factors E and O are integrating scales of personality, and as such, are at the opposite pole of neuroticism. It should also be noted that these two factors have the highest reported intercorrelation coefficients, which fact should somewhat attenuate the strength of such evidence. A further limitation should be noted in Murray and Galvin's use of Bier's modified form of the MMPI. Since the K correction was also omitted in adjusting the obtained scores caution should be used in uncritically accepting such evidence. The changes instituted by Bier may be presumed to change the test as a whole and essentially one may be comparing two dissimilar things.

The second study tested 241 college men and women. The K values were included in comparing the 10 GZTS and 11 MMPI scales. Of the 110 interscorrelations, 47 were negative. Sixty three are reported significant, 47 at .01. The third
study tested 88 college male volunteers in educational and introductory psychology courses. R values were included. The 10 GZTS and 9 MMPI clinical scales had 58 of their 90 intercorrelations negative. Of 32 significant r's, 22 were at .01. This last study is important in that factors E and O again proved to be consistent in having 12 of their 16 intercorrelations significant at .01. The value of these investigations would be in their adding confirmation to personality assessment. The factor work with the GZTS scales has apparently purified each scale to an acceptable degree. As such, it would appear that it could be a useful adjunct to the MMPI or vice versa.

H.V. McKenna (1961) investigated 300 college women on the relationships between religious attitudes and personality traits. The experimental design and criteria are both weak and vague in relation to what the GZTS scales actually measure. Of interest, however, is that the mean scores for all subgroups fall within one half standard deviation for the norm group used by Guilford. Results similar throughout various studies using the GZTS are consistently reported and this is especially so when comparable populations are tested.

Linden and Olson (1959) in another well designed experiment compared the Taylor Manifest Anxiety Scale with factors E(emotional stability) and O(objectivity) of the GZTS. Four hundred and twenty eight undergraduate college students, of both sexes, were used. They were ranked according to degree
of anxiety into upper, middle and lower anxiety-level groups. These served as the criterion. A three factorial analysis of variance design investigated anxiety conditions, sex and the inventory scales. Results indicated that low anxiety subjects were more stable (factor E) and objective (factor O) and better in personal relations (factor P) than the high anxiety subjects. A second general conclusion was that at the .05 level, the mean differences of all groups on factors E, O, and P support the inference that they measure anxiety. This evidence contributes a valuable new dimension in interpreting scores on these scales and should prove useful in individual personality assessment. A third conclusion of worth is that factors E and O appear to measure the same variable or variables that the Taylor scales measure.

Another result of this study was that factor P and the L scale in the MMPI correlated positively. In both of these scales the low anxiety group were significantly higher in their scores than the high anxiety group. Linden believes that this suggests that those scoring high on P may be attempting to represent themselves in a favourable light. The GZTS appears to be able to clarify the function of anxiety in individuals who score differently on the MAS. That is, while both high and low MAS scores indicate anxiety, the low scorers apparently reflect an attempt to conceal this anxiety. Linden's investigation, like those reviewed on
the MMPI, provide evidence that factors E and O appear to be the most sensitive personality assessors in the GZTS.

Jacobs and Schlaff (1955) investigated temperament factors involved in subjects attempting to fake a good impression. The study suggests that making a good impression is more closely related to that which factors A, S, and G measure than that which factor T purports to measure. Two falsification scales were constructed. The gross falsification (GF) scale, when correlated with the MMPI's L and K scales, was significant at the .01 level. The correlations for the subtle falsification (SF) scale were judged "significant" but much smaller, being of the order .20, uncorrected for attenuation in the criterion. Gross falsification items are those easily fakable should one want to create a favourable impression. The subtle falsification items try to detect those tending to give themselves the benefit of doubt on items often answered in an unfavourable direction. One limitation of this study is that its subjects were given an academic set for faking whereas obviously a given person may fake for various reasons. A second limitation in their investigations may be noted in the rather small number of subjects used in the faking group, 56 males and 50 females. More credence could be placed in the two scales if a greater number of subjects has been included.

The effects of intelligence on scores is almost unknown by users of the GZTS. Voas (1957) reported on the amount of
time taken to complete the MMPI and GZTS with naval cadets timed without their knowledge. A correlation of .72 was reported, the conclusion being that individuals demonstrate great consistency in this matter. Examination of the results showed that reading speed was positively correlated with factors G(general activity), A(ascendancy) and E(emotional stability), and negatively correlated with R(restraint). The author contends that these relationships do not appear to be based on differences of intelligence. This study would have been much better if direct assessors of intelligence had been used and as such doesn't appear to carry much weight in what it claims.

Witherspoon and Melberg(1959) used the GZTS to predict scholastic success with 229 college freshmen. They explored possible relationships between temperament and grade point averages. It was concluded that factor R(restraint) has a low but significant(beyond .05) correlation with grades. Factor P(personal relations) correlated at .05 and M(masculinity) at .02 for 112 males. An obvious weakness in the whole investigation is that they only used first semester grades which hardly qualifies as an adequate sample for grade point average. At best this study only serves to suggest the need for further investigation of this sort.

Jackson(1961) studied test-retest reliability on telephone employees. Two administrations were given, 18 months apart. Results indicated that the GZTS is stable in what it measures,
the reliability coefficients being of approximately the same magnitude as in the normative population. Jackson states that this suggests that the GZTS measures personality traits of relative permanence rather than temporary situational factors. However, this must be viewed as quite tentative for his original population dropped from 96 to 49 subjects in the 18 month period.

Literature on self report inventories

Evaluation of the actual worth of self report inventories depends to a great extent on how that worth is judged and in what terms it is expressed. Jum C. Nunnaly(1959) in discussing their reliabilities, norms, uses and validities feels that devoting any amount of detailed attention "would not be worth the space it would take(p.330)."

Gronbach(1960) describes how personality theory, after the advent of factor analysis, became wholly subordinated to a statistical search for 'dimensions' which would summarize personality. After Guilford isolated some thirteen factors, Thurstone's refractoring claimed to account for the same data on the basis of just seven factors. Cronbach refers to much of these efforts as a "game" in which one psychologist classifies items finely, a second puts them together in small bundles which a third party proceeds to redivide in some new fashion. Meanwhile, each is giving his own special name to the factors.
thus adding to the confusion. He states that at present no consensus among factor analysts as to the number, name or best organization of factors exists. The term 'introvert', for example, may mean a brooding neurotic for one person and someone who would rather be a clerk than a carnival barker for another. These opinions serve the worth purpose of introducing a needed caution to any attempt at personality assessment and the necessity for adequate training previous to their administration and evaluation.

Anastasi(1961) contrasts the disparity between personality and aptitude assessment in the matter of their reliabilities and validities which should be noted. Validity of items is affected as they become more transparent in what is measured, since they are then more susceptible to conscious or unconscious distortion. Language difficulties are also inherent when inventory items use ambiguous terms such as 'usually', 'often', 'frequently', etc. Ambiguity in test construction for personality variables is partially due to the "greater standardization of the individual's reational biography in the intellectual sphere(p.523)." That is, our system of formal education assures, by its relative uniformity, that the interpretation given to an arithmetic or vocabulary item is quite similar. Personality assessment does not have a similar common fund of antecedent experiences. While Anastasi's evaluation is quite logical the need for personality assessment still remains and
must be met. Without attempting to either create or refine personality assessors the situation will hardly improve by itself.

G. Allport (1937) is one of the best known critics of personality inventories. He argues that the stimulus situation is assumed by the tester to be identical for each subject. Furthermore, that a similarity of response, is assumed to indicate some constant significance. While there is obviously some justification in terms of statistical probability, Allport feels this is unwarranted at the level of personality. His main argument reasons that it cannot be said with certainty that the same responses in two people indicate the same trait; nor that different responses necessarily indicate different traits. While this is all true it would appear that one could logically and legitimately argue that within personality there are certain constants or patterns which are relatively permanent and that everything is not in such a degree of flux as to preclude meaningful evaluations.

Eisenberg (1941) demonstrated response ambiguity in inventory items, the results indicating a wide range of interpretations for each response. His study suggests that the matter of ambiguity is best reduced by elimination of the number of vague terms or equivocal responses through a clearer formulation of the items.

Elias (1951) stated that ambiguity or item vagueness is
sometimes useful by allowing more free play to individual interpretation. His article points out that for a clinician it may serve to reflect a person's characteristic approach, motives, attitudes, emotional states, etc.

Literature on rankings and ratings

Rankings and ratings refer to methods employed in assessing oneself or others, usually through direct observation. In this study there was a ranking of each individual by his own classmates, which essentially reflects the way other people perceive the one ranked. The GZTS scores themselves may be viewed as a self rating in the sense that each individual reflected his own view of himself. One general consideration in this study was to examine the agreement between the two viewpoints.

In addition to the above, rankings were applied by each subject to the ten GZTS factors. Each factor was given a short and concise descriptive definition and it was this global definition which was applied in the ranking of one's classmates. When used in this latter sense, a sociometric type of rating was being applied. Guilford (1959) stated that this procedure works best with groups that have been together for some time. In this study the minimum length of acquaintance between raters and those rated was two years and the maximum eight years. It should also be noted that during the period of acquaintance both
the rater and the ratee lived, worked and studied together being exposed to substantially identical environmental variables. The external controls inherent in the religious life impose a set of environmental conditions that are almost unique. For this reason it is believed by the investigator to give weight to the subsequent findings. Super (1959) pointed out that the basic assumption in ratings is that the rater be able to identify the traits of behaviour in question and have the ability to make a judgment concerning the degree to which a subject manifests it. He noted that ratings have proven useful as global measures, "but not as measures of specific traits, for global measures seem to reflect either the success of or liking for the subject (p. 27)." In this study, as indicated, a global type of definition for temperament was applied. Leary and Coffey (1955) have distinguished three levels of personality measurement which may be tapped by different approaches. The public, or level at which the individual appears to others; the private, or conscious level at which one appears to himself; and the symbolic, or level at which he reveals himself in projective materials. In relation to this framework the GZTS items and responses may be viewed as tapping the private or conscious level of personality and classmates rankings expressing the public level of personality.

As in any type of measurement, various problems arise in the use of rankings. Guilford (1954) has pointed out some of
the errors usually involved. The error of leniency refers to a constant error resulting from a stable tendency in the rater to rate too high or too low. The reasons for this are many. Elsewhere, Guilford (1959) cites evidence to show that hard raters tend to be hard on themselves, to be less confident in their judgments than others, and to be more conservative generally. Moreover, when raters know or believe that their ratings will affect the status of those rated, they tend to err on the favourable side. This study has attempted to minimize these factors by requiring separate ranks to be given to each person rated and by informing those involved that their judgments would not be used in any decision-making capacity. The subjects were told that an individual's record would be kept confidential and shown to no other person without that person's permission. Guilford makes the further point that so long as one has the same raters judging the same ratees on the same traits, the leniency error need not be much cause for concern, except for the poor discrimination of ratees on the high and low ends of the scales.

A second common source of error is that referred to as the error of central tendency. It results from a hesitancy to give extreme judgments and a tendency to displace individuals in the direction of the mean value of the total group. Efforts to control this have been made in this study in two ways. Firstly, by limiting the application of one's judgments to
only his own classmates the range was thereby restricted and consequently the number of judgments. It is believed that this should tend to increase accuracy of judgment since its obviously easier to rank 10 people than 100. Secondly, by insisting that a separate rank be given to each person, tied ranks are avoided and an even distribution of rankings result. Guilford (1954) states that the error of central tendency is more common in rating individuals whom the raters do not know very well. As indicated, in this study the minimum period of personal acquaintance was two years. By restricting each rater to his own class the judgments were assumed to bear on those best known to the rater.

A third source of error common is the halo effect, which arises when raters use irrelevant criteria and contaminate judgments. H.S. Conrad (1933) has shown that a good rater is one who is interested in his task and has a background similar to those being rated. The subjects in this study were apparently well motivated since all were volunteers. Similarity of background is assured, at least since entrance into the religious life, by its strict control of nearly all environmental influences. The environmental controls inherent in a religious community are not duplicated in any other society. All subjects were males, having substantially the same ethical system, motivated by interests which have much in common, exposed to the same living conditions, academic training and rules
of conduct. They had approximately the same amount of formal education and have at least average intelligence. Taft (1955) states that there seems to be a positive correlation (.3 to .4) between ability to judge others and intelligence of the judge. In his article note should be taken that this applies to judgments of the analytical (e.g. trait by trait) type of judgment and not to the global type judgment required in the study reported here. Guilford (1959), in his book on Personality, cited three other studies confirming the relationship between a good judge and high intelligence. He also noted that the halo effect can be minimized by using traits that are more easily observable and by using traits that are clearly defined. This latter was controlled for in the present investigation as indicated earlier, by giving a brief description of each trait. By requiring a separate rank for each trait a forced choice type of response was insured and ties eliminated.

Other rater characteristics have been noted by Guilford (1954). They tend to rank themselves in a group less accurately than they rank others. This is apparently due to the systematic errors operating in the rater. This study controlled for such an error by excluding the rank a rater may have given himself and adjusting the rank order accordingly. Raters tend to overestimate themselves in most traits and to underestimate themselves in few. Guilford also cites evidence that self raters are too high on desirable traits and too low on undesirable
ones. Finally, in self rating, superior individuals underestimate themselves and inferior individuals tend to overrate themselves, the latter having the greater amount of error.

Stockford and Bissell (1949) indicated that length of acquaintance may lead to substantial error of leniency; they reported that length of acquaintance with employees correlated .64 with ratings of acceptability of personality. It also correlated .65, on the average, with a number of traits when the scale was evaluative; and to the extent of .42 when the scale was descriptive. It has already been sufficiently noted how this study controlled for these factors by restricting both the range of judgments required and the length of acquaintance between judge and persons judged.

In his discussion between the relative merits of rankings versus paired comparisons, Guilford (1954) stated that from the standpoint of ease and economy of time on the part of the judges, the ranking method is far superior. He contends that as far as the scale positions obtained from the two methods are concerned, the one type is as valid as the other. He also noted that it is obviously easier to rank twenty stimuli than judge 190 pairs. It was primarily because of such practical considerations as time, effort and cooperation from the subjects, and in order to insure the greatest number of participants, that the ranking method was deemed better for this study.
Chapter 3
Procedure
Selection of data: Source and Criteria

The subjects used in this study were all white, male religious seminary students currently engaged in preparation for the priesthood. The sample was composed of seven separate groups corresponding to the seven years required to complete their studies. Those in the first three years were engaged primarily in philosophical studies while those in the remaining four years were pursuing theological studies. The seven groups ranged in size from 6 to 25 individuals, the average being 14 students. The size of a given class is determined by the number of individuals who apply, are accepted and remain in the institution for training.

Before requesting their participation, the general purpose was explained. All were informed that the study was for research purposes and results of individual records would be available only to that person. It was further indicated that group data would be available to those interested in the results.

Several days before actual testing a letter was posted on the bulletin board which requested student cooperation. An offer was made to give additional information or answer any questions. The matter of confidentiality was stressed and the reason for code numbers to insure secrecy was explained. In addition to secrecy code numbers were substituted to reduce
factors which might cause bias or dissimulation. To provide motivation and
insure cooperation an offer was made to discuss final group performance and also an individual's own record. Despite all precautions the issue of confidentiality was raised by several students. The element of secrecy obviously is of paramount importance in this type of investigation and every effort should be made to provide reassurance. A fairly large number of subjects also stated that while they were willing to participate, they would do so only if given feedback information. This element should also be seriously considered and if possible, provision made for meeting this request.

That these efforts and safeguards were effective is shown by the fact that 95 out of a possible 102 student volunteered. The only students automatically excluded from the sample were those unfamiliar with the English language or who did not meet the minimum two year length of acquaintanceship with those to be ranked.

The biographical sheet

Part I of this study began with each subject completing a biographical sheet (Appendix I). It requested information on family, educational and religious background. The twenty eight questions were designed to yield such information as might tend to cause these factors to indicate two different populations. The particular questions amenable to parametric statistics were examined and t tests used to determine the presence of
any significant differences between the high and low groups. With the issuance of the biographical sheet a code number to replace the name on all subsequent parts was given and its purpose explained again. Those data counted in terms of frequencies were likewise examined for differences. The code number was prefixed by the investigator to all materials to lessen mistakes from occurring and no mistakes or confusion of records occurred.

The GZTS answer sheet

Part II of this study involved taking the Survey itself. An answer sheet (Appendix II) with proper code number was given to each student. Insofar as possible students were tested in groups to save time and minimize sources of error. In a few cases this was not possible and such persons were allowed to complete the Survey while alone. Each student had his own private room which other students may not enter without permission.

Special instructions were added to those proper to the question booklet (Appendix III). Previous experience with the Survey indicated that more than three question mark type of answer may be expected in any given factor. Guilford (1949) suggests that when this occurs the subject should be asked to erase some of them and choose one of the alternate responses. The special instructions used in this study attempted to avoid
this extra work which would make the task more difficult if many question marks were found; the use of an ink pen would make it even more onerous. Subjects were allowed to place their choice in the question mark category is they so desired and then told to indicate in the 'yes' or 'no' category their second choice. There is no obvious reason why one should not be permitted to do this in the light of Guilford's allowing them to erase question marks and it is definitely more practical. A further reason for this form of administration was to allow a subject to make his own decision without subsequent interference. It is reasonable to suppose that a request to change one's answers after he has completed the Survey might cause anxiety or hostility or outright refusal. Furthermore, the number of question marks may reasonably be interpreted clinically as reflecting hostility, indecisiveness, or a person who does not know himself very well. The manual(1949) explicitly states that these may be possible reasons. It makes the further point that most students are not in favour of a forced choice type of answer. It was for this reason that Guilford allowed three categories of answers in the first place.

Ranking of the ten GZTS factors sheet

Upon completion of the Survey's 300 items, each student was given a sheet containing instructions and a short descriptive type of definition for each of the ten factors. In order to reduce ambiguity aptitude and motivational traits were dis-
tistinguished from temperament traits. The subject was required to place the ten temperament traits in a rank order with the first rank given to that factor he judged to be most important as it applied to the religious life. Each factor was given a title and a short description to clarify the meaning of that title. On this sheet the subject's code number replaced his name. By requiring a separate rank for each factor ties were eliminated within any one record.

The purpose of this part of the study was twofold. Firstly, the rankings would provide objective data on the relative importance of each factor as it applies to the religious life taken abstractly or viewed objectively. This information would assist a counselor in judging a particular record against this objective norm and giving various weights to any discrepancies. It would also make more meaningful the interpretation of the anticipated differences between the high and low approval groups. Secondly, each subject would gain a more precise definition of temperament in a global sense. Since each subject's classmates were to be ranked on a temperament scale it was necessary to insure that all judges defined and understood temperament in the same way. A subsidiary purpose was to determine the investigator's belief that accuracy and consensus of judgment was a function of specificity of criteria. That is by reducing ambiguity to a minimum a significant consensus of agreement would result.
Ranking of classmates sheet

Part IV required each subject to rank, in the order of his approval, his classmates in the matter of temperament. The instructions (Appendix V) reminded the student that his vocation required him to make similar judgments. After a certain number of years in the religious life, the members receive what is termed active and passive voice. The former allows him to vote for a candidate of his choice for various offices and the latter allows him to be considered as a candidate for certain offices. The instruction attempted to relate the present request in a meaningful way to the subjects in order to avoid unnecessary reluctance or opposition. It was anticipated, and events so proved, that this part would meet with the most resistance. The ranking of one's classmates was not presented until all previous parts had been completed and all subjects had taken the Survey. It was anticipated that certain subjects would be unwilling to make this type of judgment and that their opinions might influence those who had not completed the previous parts. This proved to be the case as the number of participants dropped from 95 to 73. To reduce the number of dropouts each individual was seen personally in order to eliminate misunderstandings of what was being requested. One of the major misconceptions was the belief that they were being asked to either approve or disapprove those to be judged. It was pointed out that the instructions did not imply this. The instructions meant that
each individual met with their approval but in a certain order to be determined by them. In voting on certain members in their community one votes by placing either a white(approval) or a black(disapproval) ball in a box. Once they understood that this was not the investigator's attitude the objections ceased. Once again the individual was assured that his ranking would be kept inviolate and only the investigator would see the results. In view of the fact that what they were being requested to do was demanding, the willingness of approximately seventy five per cent of the student body is gratifying.

As mentioned, the ranking of the ten GZTS factors exposed the judges to the same definition of temperament. A first year philosophy student, for example, ranked only his first year philosophy classmates. The same principle applied to the remaining six groups. It would obviously be meaningless to ask an individual to judge 102 others in a rank order type of judgment. Since length of acquaintance between rater and ratees is important, the judges were presumed to know their own classmates best.

Statistical procedures

The biographical data was analyzed by both parametric and nonparametric statistical procedures. Continuous variables (e.g. age, years of formal education, etc.) were subjected to t tests for differences and discrete variables to chi square
analysis. The Survey scores were analyzed parametrically
an means, standard deviations, standard errors of means
and obtained scores, standard errors of differences between
means and t ratios were computed. In addition, reliability
coefficients for each factor were estimated as well as corr-
elations between half and total scores. Of special interest
are the intercorrelations between half and total scores for
each of the factors. All correlation coefficients are of
the Pearson product moment type.

The statistic used in ranking of both the ten factors
and the classmates is based on M.G. Kendall's (1948) coefficient
of concordance, symbolized as 'W'. S. Siegel (1956) has
shown that any observed value for W may be tested for sig-
nificance associated with the occurrence under the null hypo-
thesis by finding the chi square value. The value of W is a
measure of the relationship among several rankings of N
individuals by K number of judges. It provides one with a
standard method of ordering entities according to the consen-
sus of the judges' decisions. The value of W can vary only
between 0 and +1, W cannot be negative when more than two
sets of ranks are involved. For example, if judges X and
Y disagree, then judge Z must agree with one or the other.
Thus, while K number of judges can all agree (W = +1), they
cannot all disagree completely so as to result in W having
a -1 value. When the value of W is significant, it may be
interpreted as meaning that the judges are applying essentially the same standards or criteria in their rankings and that their pooled ordering may legitimately serve as a standard or objective norm. One caution which should be noted is that a high value for \( W \) does not automatically mean that the judges are correct. It may mean merely that all judges are applying the same 'wrong' criteria. Thus the term 'objective' used above means a standard determined by judges operating independently of each other in arriving at their conclusions. Note should be taken however, that the matter to be judged, i.e. the ten factors, were objective in the sense that each factor was defined quite specifically. The judges were not allowed to freely interpret what they thought each factor meant.

In the ranking of the ten GZTS factors Spearman's rho coefficients were also calculated to determine how closely each group's separate ranking associated with that established by the other groups.

In the ranking of the individuals within a given group Kendall(1948), Siegel(1956) and Guilford(1954) all indicate that the best estimate of the true ranking of entities may be based upon the sums of the rank values objectively arrived at by the values assigned. Guilford(1954) indicates that the sums are preferable to mean or median rank values for "the sums are less likely to give tied composite ranks(p.194)." Confirmation of this approach is had when the coefficient of concordance
attains significance. Once each individual in a given class had received a rank it was possible to split the separate groups into a high and low approval section. Once this had been achieved it was possible to compare the two groups on their performance with the ten factors in the GZTS.
Chapter 4
Results and Discussion

This part of the study will first discuss the results obtained by analysis of the biographical information. Next considered will be the ranking of the ten factors, after which attention will be focused on the ranking of classmates. Lastly, data from the GZTS will be presented.

Biographical results

None of the data gathered in the biographical section gave evidence that the high approval group differed significantly from the low approval group. This applied to those data which were treated both parametrically and nonparametrically. On the basis of the biographical variables investigated there is no reason to expect that results obtained on the GZTS were affected so as to produce the differences in temperament which were obtained.

Results on ranking of the ten GZTS factors

Table 1 presents in summary form the results, by class, of the 73 students who ranked the ten factors contained in the GZTS in the order of their importance. In this ranking procedure the first rank was given to that factor judged most important in the religious life. The results indicate quite conclusively that each group reached significant agreement in
their rankings. This agreement apparently is a reflection of
similar community experience associated with the religious life
as well as the common set of rules and values governing their
value system. The fact that an identical set of criteria were
used to determine their judgments indicates that when such
criteria are made unambiguous and specific agreement can be
reasonably expected.

Table 1

Ranking of ten temperament traits by seven
groups totaling 73 subjects

<table>
<thead>
<tr>
<th>Group</th>
<th>Level of Significance</th>
<th>Obtained chi sq. values</th>
<th>W values</th>
<th>No. of judges</th>
<th>d.f. values</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>.001</td>
<td>50.14</td>
<td>.506</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>.001</td>
<td>43.52</td>
<td>.478</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>.001</td>
<td>60.01</td>
<td>.445</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>.001</td>
<td>45.80</td>
<td>.565</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>.01</td>
<td>24.78</td>
<td>.344</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>.001</td>
<td>35.16</td>
<td>.651</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td>.001</td>
<td>52.09</td>
<td>.413</td>
<td>14</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 1 gives the overall estimate of agreement for the
73 judges as a group. The actual values were calculated and
chi square was in excess of 268.6 while the W value was .409.
The expected chi square value when d.f. is nine is 27.88 at
the .001 level of significance.
In view of the fact that all seven groups reached a significant consensus the first hypothesis was considered established. It stated that when given specific criteria by which to judge, the degree of concordance in ranking ten temperament traits in their order of importance to the religious life will exceed the chance level of agreement. One interpretation of the results is that training in the religious life does produce or confirm unity of judgment. It cannot be established what degree of agreement would have been had if the same judges had remained in secular life. But it appears reasonable to assume that the extremely similar environment found in a religious community, its rules of conduct and system of values does determine value judgments. Deviations from these standards or conformity to them in matters of temperament could possibly prove to be a valuable criterion upon which to judge future success as a religious. It is the belief of this investigator that such success is linked more to temperamental characteristic than to intelligence levels. It would be of great importance to see to what extent each could be used to predict which candidates proved successful.

In order to indicate more clearly the degree of consensus between the seven groups Spearman rho coefficients were calculated. Table 2 presents a correlation matrix in which each group is compared to every other group. It should be noted that the lowest level of significance was at the .02 level.
when groups one and five were compared.

Table 2

<table>
<thead>
<tr>
<th>Group</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>X</td>
<td>.83</td>
<td>.80</td>
<td>.99</td>
<td>.98</td>
<td>.77</td>
<td>.93</td>
</tr>
<tr>
<td>6</td>
<td>X</td>
<td>.75</td>
<td>.84</td>
<td>.81</td>
<td>.81</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td>.78</td>
<td>.83</td>
<td>.77</td>
<td>.63*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>X</td>
<td>.98</td>
<td>.82</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td>.83</td>
<td></td>
<td>.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>.74*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* significant at .02 level, all others at .01 level

Results on the ranking of classmates

The actual number of students ranked was one hundred. Two subjects belonged to another province of the order and were not included under the definition of 'classmate'. Of the 100 ranked, seven did not care to participate for various reasons. Since GZTS scores were lacking for these seven only 93 subjects were actually ranked. As was earlier indicated the actual placement in a rank position depended on the sums of the rank values resulting from the judges' opinions. Table 3 presents the results obtained by each of the seven groups in judging their respective classmates along the dimension of temperament.
### Table 3

Ranking of 93 students distributed in seven groups by 73 independent judges

<table>
<thead>
<tr>
<th>Group</th>
<th>Level of Signif.</th>
<th>Expected chi sq. values</th>
<th>Obtained W chi sq. values</th>
<th>Rates</th>
<th>Raters</th>
<th>d.f.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>.001</td>
<td>37.70</td>
<td>51.61</td>
<td>16</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>.001</td>
<td>31.26</td>
<td>55.26</td>
<td>12</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>.001</td>
<td>48.27</td>
<td>153.75</td>
<td>23</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>.30</td>
<td>12.90</td>
<td>11.28</td>
<td>12</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>.01</td>
<td>24.72</td>
<td>27.25</td>
<td>12</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>.70</td>
<td>3.00</td>
<td>3.79</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>.001</td>
<td>42.31</td>
<td>70.34</td>
<td>19</td>
<td>14</td>
<td>18</td>
</tr>
</tbody>
</table>

Table 3 indicates that five of the seven groups were able to reach significance beyond the .01 level. Of the two groups which failed in this respect one did show at least a tendency toward agreement. It is interesting to note that degree of consensus appeared to bear a relationship to the size of the group. The observation of Guilford that the sums of scores help eliminate tied rankings appears to be correct. Of the one hundred individuals rated, tied ranks occurred in only four instances.

Garrett (1958) has indicated the existence of a formula which "may be used to estimate the reliability of ratings,
paired comparisons and other judgments, as well as test scores (p. 343)." Substituting the values for W into this formula gives, in terms of reliability, the following values for groups seven to one respectively: .83, .91, .93, .51, .72, .46 and .84. Garrett indicated that the values thus obtained are "stepped up estimates" and may be best interpreted as rough approximations rather than exact coefficient values. The equivalent values when applied to the ranking of the ten factors, which may be of interest for purposes of comparison, were also calculated. The reliability estimates for groups seven to one were respectively: .92, .90, .92, .92, .81, .92, .99. It is thus apparent that factor ranking produced a greater degree of consensus than classmate ranking. It may be fairly concluded that the factor ranking was a more objective and impersonal task and relatively uncontaminated by personal or interpersonal considerations. Furthermore there were better controls possible on the factor ranking task since each judge exercised his opinion on the same identical ten stimuli. In ranking of classmates, the size of the classes ranged from six to twenty three. It might also be noted that there is no consistent relationship between length of acquaintance and degree of consensus in either ranking procedure. The students with the minimum length of acquaintanceship did as well as the group with the greatest length.
The results obtained in classmate ranking substantially validate the second hypothesis: that the rank order of subjects judged in the order of approval by a global definition of tend-will show agreement beyond the chance level. This proved to be the case with five of the seven groups involved. It was on the basis of this reasoning that the sample was divided into a high and low approval group. The two groups which did not reach significance were similarly divided inasmuch as random assignment was not considered to be required.

Results obtained from the GZTS

Part II of this study required subjects to respond to the 300 item survey. One of the objects of this study was to investigate the parameters of the population. It is well known that accurate interpretation of test results depends upon the nature of the population being considered. Since a religious community is a society different from others, factors of selection may be expected to affect test results, especially in regard to personality variables. Such studies as are extant on the use of the GZTS with religious do not offer much information in terms of raw scores, means, reliability coefficients and especially intercorrelations. It was the hope of this study to attempt to supply for this lack. Table 4 presents the distribution of raw score totals for 95 subjects. Each factor has been divided so as to present a score for each
half of that factor. Also presented are the differences between each half and finally the total score. These data immediately indicate something of the comparability of items in each half of a factor.

Table 4
Distribution of scores on ten temperament traits

<table>
<thead>
<tr>
<th></th>
<th>G</th>
<th>R</th>
<th>A</th>
<th>S</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>811-725</td>
<td>898-942</td>
<td>719-806</td>
<td>830-843</td>
<td>840-816</td>
</tr>
<tr>
<td></td>
<td>+86</td>
<td>-44</td>
<td>-87</td>
<td>-13</td>
<td>+24</td>
</tr>
<tr>
<td></td>
<td>1536</td>
<td>1840</td>
<td>1525</td>
<td>1673</td>
<td>1656</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>T</th>
<th>P</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>888-832</td>
<td>711-788</td>
<td>919-952</td>
<td>946-947</td>
</tr>
<tr>
<td></td>
<td>+56</td>
<td>-77</td>
<td>-33</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>1720</td>
<td>1499</td>
<td>1871</td>
<td>1893</td>
</tr>
</tbody>
</table>

The total score on the first half of the GZTS for all seven groups, on all ten factors, was 8500 and for the second half, 8544. From a total of 17,044 points, a difference of 44 points resulted. While such figures cause specific differences to disappear it does give a broad and general picture of the Survey as a whole. The manual (1949) indicates that each trait may be scored in two parts on each factor to see if an individual is self-consistent with respect to that factor. Table 4 indicates that in no single factor did the average difference exceed one point. Reliability coefficients indicate to some
how much difference can be tolerated. Tolerance limits are established by computing the standard error of an obtained score. Guilford (1949) states that a difference twice as large as the standard error should give cause for concern. He suggested that when the difference between two half scores exceeds twice the standard error, the total score for that trait should be seriously questioned. Table 5 presents three separate estimates of reliability, Spearman-Brown, Guttman's and the Kuder-Richardson.

Table 5

Three estimates of factor reliability by the split-half method

<table>
<thead>
<tr>
<th>Factor</th>
<th>S-B Prophecy</th>
<th>Guttman</th>
<th>K-R formula</th>
<th>S.E. meas.</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>.90</td>
<td>.89</td>
<td>.86</td>
<td>2.2</td>
</tr>
<tr>
<td>R</td>
<td>.63</td>
<td>.63</td>
<td>.68</td>
<td>2.7</td>
</tr>
<tr>
<td>A</td>
<td>.87</td>
<td>.86</td>
<td>.78</td>
<td>2.1</td>
</tr>
<tr>
<td>S</td>
<td>.91</td>
<td>.90</td>
<td>.90</td>
<td>2.3</td>
</tr>
<tr>
<td>E</td>
<td>.92</td>
<td>.91</td>
<td>.88</td>
<td>2.0</td>
</tr>
<tr>
<td>O</td>
<td>.78</td>
<td>.78</td>
<td>.70</td>
<td>2.2</td>
</tr>
<tr>
<td>P</td>
<td>.76</td>
<td>.73</td>
<td>.73</td>
<td>2.5</td>
</tr>
<tr>
<td>T</td>
<td>.78</td>
<td>.78</td>
<td>.75</td>
<td>2.4</td>
</tr>
<tr>
<td>P</td>
<td>.75</td>
<td>.74</td>
<td>.73</td>
<td>2.4</td>
</tr>
<tr>
<td>M</td>
<td>.78</td>
<td>.78</td>
<td>.74</td>
<td>2.3</td>
</tr>
</tbody>
</table>

*S.E. meas. was computed using Guttman's values.*
Guttman's formula was used as the basis of computing the standard error of measurement. Helmstader (1964) explained that, unlike the Spearman-Brown, Guttman's formula does not require the assumption of equal variances for the two half scores. The standard error values in this study agreed closely with Guilford's population, the largest difference being of the order .50 for factor R (restraint). For comparative purposes the reader should consult the GZTS manual. Comparison of this sample with Guilford's indicated a general agreement, the most notable deviation being in trait R as indicated.

Table 6

Means and standard deviations of trait scores

<table>
<thead>
<tr>
<th>Factor</th>
<th>Means</th>
<th>Standard deviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>16.23 (17.0)</td>
<td>6.64 (5.64)</td>
</tr>
<tr>
<td>R</td>
<td>19.3 (16.9)</td>
<td>4.50 (4.94)</td>
</tr>
<tr>
<td>A</td>
<td>16.0 (15.9)</td>
<td>5.54 (5.84)</td>
</tr>
<tr>
<td>S</td>
<td>17.6 (18.2)</td>
<td>7.50 (6.97)</td>
</tr>
<tr>
<td>E</td>
<td>17.4 (16.9)</td>
<td>6.92 (6.15)</td>
</tr>
<tr>
<td>O</td>
<td>18.1 (17.9)</td>
<td>4.71 (4.98)</td>
</tr>
<tr>
<td>P</td>
<td>15.8 (13.8)</td>
<td>4.77 (5.07)</td>
</tr>
<tr>
<td>T</td>
<td>19.7 (18.4)</td>
<td>5.10 (5.11)</td>
</tr>
<tr>
<td>F</td>
<td>19.9 (16.7)</td>
<td>4.81 (5.05)</td>
</tr>
<tr>
<td>M</td>
<td>19.2 (19.9)</td>
<td>4.91 (3.97)</td>
</tr>
</tbody>
</table>

note: figures in parentheses indicate GZTS norms
Table 6 presents the means and standard deviations for this sample and the figures in parentheses indicate the values for Guilford's population. The most noticeable differences appeared in three factors, R(restraint), P(friendliness), and P(personal relations). Since it was not the purpose of this study to compare results except within the population used in this study no comparisons between these differences were made. The direction of attention was focused on those differences between the high and low approval groups.

Table 7
Correlations between halves and total scores

<table>
<thead>
<tr>
<th>Factor</th>
<th>A vs. B</th>
<th>A vs. total</th>
<th>B vs. total</th>
</tr>
</thead>
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<tr>
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</tr>
<tr>
<td>R</td>
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<td>.82</td>
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<td>A</td>
<td>.77</td>
<td>.94</td>
<td>.94</td>
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<td>.96</td>
<td>.95</td>
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</tr>
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<td>P</td>
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</tr>
<tr>
<td>M</td>
<td>.64</td>
<td>.90</td>
<td>.91</td>
</tr>
</tbody>
</table>

As was earlier stated, each separate factor was analyzed to yield three scores: a score for the first half of that
factor; a score for the second half; and the combination of both halves or total score. Correlations between each of these were computed and the results presented in Table 7. These correlations assisted in making clearer the reliabilities presented in Table 5. Thus, factor R(restraint) which had the lowest reliability coefficient finds confirmation in Table 7 where the coefficient value between each half was only .46. Precisely what influences were operating to account for this factor's relatively poor showing are not known. It is interesting to note that factor R(restraint) also, as a result, had the largest standard error of measurement.

Another facet of the GZTS which was of importance concerned the relative importance of factor independence. Guilford stated(1949) that with his population, the intercorrelations were "gratifyingly low." The conclusion drawn from this was that each factor was relatively unique and thus presented a different aspect of temperament. The highest intercorrelation reported by Guilford was .69 between factors E(emotional stability) and O(objectivity). One reason for this was that factor E was the result of combining two emotionally laden factors from earlier inventories. Tables 8,9,10, and 11 present a complete account of the intercorrelations found between half and total scores found in this study. It should be noted that these were Pearson product moment correlations whereas those reported by Guilford were tetrachoric ones. The
tetraschoric coefficient is known to be less reliable than the Pearson being as much as 50% more variable (Guilford, 1950, p. 335). This deficiency is overcome mainly by increasing the size of a sample to twice the number necessary for the Pearson if dependable results are to be expected. Since this sample represents nearly one hundred subjects it is felt that the reported correlations are valuable.

When this sample's intercorrelations were compared with those reported by Guilford, the results indicated that the general uniqueness of each factor was confirmed. Guilford's highest coefficient was between E (emotional stability) and O (objectivity) being of the order .69. In this study it was also the highest being .72. Sociability(S) and Ascendancy(A) were .61 in Guilford's population and in this study were found to be .74. In rising to this value the two coefficients cannot claim that a score in one factor accounts for less than half the variance of the other. Still it can be noted that only slightly more than half the variance is accounted for and each factor does contribute something unique to temperament. In general, however, the comparisons indicated that both the direction (positive or negative) and the value of the intercorrelations were in substantial agreement. This study therefore is believed to substantiate the relative orthogonality of the factors involved. With the two exceptions already noted, all other intercorrelations indicated that each factor
Table 8

Intercorrelations of total scores
between 10 GZTS factors

<table>
<thead>
<tr>
<th></th>
<th>G</th>
<th>R</th>
<th>A</th>
<th>S</th>
<th>E</th>
<th>O</th>
<th>F</th>
<th>T</th>
<th>P</th>
<th>M</th>
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<tbody>
<tr>
<td>G</td>
<td>--</td>
<td>-10</td>
<td>34</td>
<td>32</td>
<td>34</td>
<td>29</td>
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<td>01</td>
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<td>-36</td>
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</tr>
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<td>S</td>
<td>--</td>
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<td>36</td>
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<td>13</td>
<td>10</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>--</td>
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</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>T</td>
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<td>00</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>--</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

Note: All correlations are Pearson product moment coefficients based on the scores of 95 subjects. Decimal points have been omitted.
Table 9

Intercorrelations of first half scores with second half scores

<table>
<thead>
<tr>
<th></th>
<th>G2</th>
<th>R2</th>
<th>A2</th>
<th>S2</th>
<th>E2</th>
<th>F2</th>
<th>T2</th>
<th>F2</th>
<th>M2</th>
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<tbody>
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<td>04</td>
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<td>-09</td>
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<td>-10</td>
<td>--</td>
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</table>

Note: All correlations are Pearson product moment coefficients based on scores for 95 subjects. Decimal points have been omitted.
Table 10

Intercorrelations of first half scores with first half scores

<table>
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<tr>
<th></th>
<th>G1</th>
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<th>A1</th>
<th>S1</th>
<th>E1</th>
<th>O1</th>
<th>F1</th>
<th>T1</th>
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Note: All correlations are Pearson product moment coefficients based on scores for 95 subjects. Decimal points have been omitted.
### Table 11

Intercorrelations of second half scores with second half scores

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<th>S2</th>
<th>E2</th>
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<th>P2</th>
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<tr>
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<td>32</td>
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<td>36</td>
<td>18</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>T2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>--</td>
<td>09</td>
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</tr>
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</tbody>
</table>

*Note: All correlations are Pearson product moment coefficients based on scores for 95 subject. Decimal points have been omitted.*
addresses itself to facets of temperament that are relatively independent of each other. It would appear safe to conclude that the GZTS can prove useful in differentiating between individuals and groups.

High and low approval data

As was indicated, the total group of 93 subjects was divided into a high and low approval group on the basis of the judgments of those in a particular group. Each separate class was divided into halves on the basis of sum scores. Tied ranks occurred in only four cases but the ties occurred among ranks that permitted them to be assigned to either group. In three groups there were an odd number of subjects who were alternately placed in the high, then low, then high groups. For this reason the high approval group has 47 subject to 46 in the low group. Although two groups did not achieve a significant consensus of agreement, their subjects were split according to sums of ranks. This was done, rather than random assignment, because it was felt that the coefficient of .30 tended toward agreement. In the other case, the coefficient of .70 can be presumed to indicate a random ranking. In this latter instance only six people were actually involved and there was no reason to believe that this would seriously affect the group performance.
As previously indicated, the MMPI and GZTS correlate negatively because of scoring reasons, a high score generally indicating positive qualities on the GZTS. The manual (1949) states that "a high score indicates the 'positive' qualities and a low score the 'negative' qualities. Extreme positive qualities do not always indicate the best adjustment, but an extreme negative one is likely to indicate trouble (p.3)." It also reported the existence of "several definitely curved regressions" in the factors which show that optimal scores do not extend to the top of the scale, but are at some moderate position between the mean and the top. Proper evaluation of scores therefore must be taken in context of the life of the individual being assessed. High extroversion, ascendancy and general activity befit a salesman more than a scholar. Table 12 presents various statistics and t ratios between the high and low approval groups. A negative value in a t ratio indicates that the mean of the low group exceeded that of the high approval group. Figure 1 presents in graphic form the mean profiles for both groups on the ten factors in terms of their raw scores.

Significant differences at the .01 level were found in factors O(objectivity) and P(friendliness). A significant difference at .02 was found for factor A(ascendancy) and factor P(personal relations) also closely approximated this level. Factor M(masculinity) closely approximates significance
at the .05 level and factors E(emotional stability),
T(thoughtfulness) and S(social interest) tend toward significance.

In the ten temperament traits, the high approval means exceeded the low group means in only three factors(G, R, and T). None of these differences were significant and they represented the lowest t ratios.

It was noted earlier that scores on the GZTS might be regarded as tapping the private view one has of himself and the rankings indicating the public level or how one appears to others. The relatively higher scores of the low approval group in seven of the ten factors was not anticipated since they generally indicate better adjustment. The general tendency of the low group to score higher suggested biasing toward creating a favourable impression. The manual(1949) discusses various indices of score dependability. It states that such a bias may be suspected when one finds notably more scores above the median than below it. The factors are held to be statistically independent and if one assumed complete independence the following odds would be expected: ten scores above the median would occur once in a thousand, nine scores once in a hundred and with eight it would be once in twenty times. It further notes that "with some degree of intercorrelation(even though slightly negative) the odds would be appreciably greater(p.11)."
<table>
<thead>
<tr>
<th>Factors</th>
<th>LOWS</th>
<th>HIGHS</th>
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<th>HIGHS</th>
</tr>
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<tr>
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<td>16.57</td>
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<td>19.68</td>
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<td>6.09</td>
<td>7.12</td>
<td>4.78</td>
<td>4.27</td>
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<td>.77</td>
<td>.53</td>
<td>.46</td>
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<td>1.03</td>
<td>.70</td>
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<tr>
<td>t ratio</td>
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<tr>
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<td>14.94</td>
<td>18.14</td>
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<td>7.07</td>
<td>7.90</td>
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<td>1.07</td>
<td></td>
<td>.72</td>
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<tr>
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<td>-1.72</td>
<td></td>
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<td>-2.89</td>
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<tr>
<td><strong>Friendliness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>16.85</td>
<td>14.87</td>
<td>19.15</td>
<td>20.47</td>
</tr>
<tr>
<td>S.D.</td>
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<td>4.64</td>
<td>5.16</td>
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<td>.50</td>
<td>.57</td>
<td>.53</td>
</tr>
<tr>
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<td></td>
<td>.78</td>
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<td></td>
<td></td>
<td>1.69</td>
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<tr>
<td><strong>Personal Relations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>20.83</td>
<td>19.15</td>
<td>20.02</td>
<td>18.55</td>
</tr>
<tr>
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<td>4.62</td>
<td>4.68</td>
<td>5.17</td>
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<tr>
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<td>.50</td>
<td>.52</td>
<td>.56</td>
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<td>S.E.diff.</td>
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<td>.76</td>
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<tr>
<td>t ratio</td>
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<td></td>
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<td>-1.93</td>
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<tr>
<td>91</td>
<td>1.66</td>
<td>1.99</td>
<td>2.37</td>
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Fig. 1. Mean profiles for high and low approval groups
The unexpected direction of the differences between groups indicated the possibility of biasing. The two falsification scales and the careless-deviancy scale constructed by Jacobs and Schlaff (1955) were used to investigate this matter. Table 13 indicates the results obtained.

Table 13

Results on three falsification scales for a high (N=47) and low (N=46) group.

<table>
<thead>
<tr>
<th>Gross falsification</th>
<th>Subtle falsification</th>
<th>Careless-deviancy</th>
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<tbody>
<tr>
<td></td>
<td>Highs</td>
<td>Lows</td>
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<td>Mean</td>
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<td>t ratio</td>
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<td></td>
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<td>d.f.</td>
<td>1.50</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>91</td>
<td>.68</td>
</tr>
</tbody>
</table>

The results indicated that on both falsification scales the low approval group scored significantly higher. This provided evidence that they may have been trying to create a favourable impression of themselves on the GZTS. The low t ratio for the careless-deviancy scale indicated that this
was not likely to be the result of a haphazard marking of the answer sheets, thus giving credence to the validity of the two falsification scales. It is not known whether the tendency to present this type of image was conscious or unconscious in motivation. One possible reason why individuals were rated lower in temperament may have been due to a habitual tendency to disguise oneself.

CLINICAL INTERPRETATIONS

The manual (1949) presents interpretations for each factor obtained from validity studies and clinical experience. It also contains information on various combinations of factors and how they may be interpreted. Jones (1954) tested 628 naval aviation cadets and reported that factor R (restraint) correlated well with F (friendliness) and that P (personal relations) also correlated well; factor R correlated best with factor T (thoughtfulness). In the present study the correlation between R and T was also the strongest. Linden (1957) has additional verification between these two and has hypothesized that they both contribute to an introversion-extroversion factor. The tendency towards introversion is more strongly indicated in the high approval group. Jones (1954) reported that factors E (emotional stability) and O (objectivity) appear to suggest a heavy loading of items relating to anxiety and that F (friendliness) and P (personal relations) reveal a common hostility factor. The low approval group consistently
scored higher on all these four factors, three of them (O,F,P) reaching significance. It may be hypothesized that anxiety and hostility are what was being denied by the low approvals. Factor studies have indicated that eight of the GZTS scales may cluster into two major group factors. One has been termed "emotionality" and relates to one's inward feelings. Four scales (E, O, F, and P) contributed a major influence to this cluster. Factor E(emotionality) is an index of the degree to which an individual will permit himself to freely feel his emotions. A high score indicates efforts to insulate oneself from doing so. The low group would appear to be relatively unwilling to represent themselves as vulnerable to their negative feelings.

Factor O(objectivity) is an index of defenses one may employ in an attempt to maintain comfort with feeling. A high score is indicative of defense mechanisms in action, whereas a low score is interpreted as indicating their lack. This lack of defenses contributes to a greater emotional vulnerability and sensitivity of feelings.

Factor F(friendliness) indicates that high scorers present themselves as easy to get along with, people who are nonthreatening in nature. Of interest was the significant difference (.01) between the high and low group in favour of the latter. While their own scores presented them as more friendly, their classmates' rankings by placing them
in the lower half of the entire group reveals reason to believe there was a basic misperception.

Factor P(personal relations) was reported by Linden as the most bias prone scale in the GZTS. High scorers tend to suggest individuals attempting to present themselves in a good light. As earlier noted, the two groups differed here at the .02 level, once again in favour of the low approvals.

The second major factor identified by GZTS scale clustering was termed "social drive." It relates to external behaviour. Four traits(A,S,R, and T) contributed to this general factor. The first two contributed the major portion.

Factor A(ascendancy) suggested individuals who present themselves as having unrealistic life goals and ambitions, they demand high status and prestige, have a need to dominate, manipulate and control others but cannot themselves follow direction easily.

Factor S(sociability) suggested social superficiality, the 'social butterfly' who defends against others truly getting to know his real self.

Factor R(restraint) was one trait where the high approval group's mean exceeded(not significantly) that of the lows. High scores indicate one who is serious minded, conservative, inhibited in his behaviour, a hard worker and duty bound person.

Factor T(thoughtfulness) was the second trait where the
highs exceeded (not significantly) the lows. In this trait, high scores suggest one who thinks about himself and his problems a great deal; one who is idea rather than object oriented; one who tends toward introversion and self-centeredness. Low scorers tend to focus on persons or objects outside the self and strive hard to refrain from thinking a great deal about themselves.

It should be noted that the above observations have the force of possible clinical interpretations which are based on work done with the GZTS. Precisely what influences were operating with this sample were not known nor was the study designed to establish them.

The traits in the GZTS may be combined for clinical purposes. Guilford suggested that when one finds a high score on 0(objectivity), there should be a high T(thoughtfulness) accompanying, so that while a high 0 is relatively unsympathetic of the feelings of others he is perceptive enough as an observer to know the right thing to do and say. In this study the low approval group scored relatively high in factor 0 but lower in factor T. A high M(masculinity) may indicate a tendency towards callousness which might intensify the discrepancy just noted.
Chapter 5
Summary and Conclusions

The purpose of this study was threefold: (a) to determine the degree of concordance seven separate groups would have in ranking ten temperament factors as they apply to religious life. It was hypothesized, and demonstrated, that agreement in all groups would exceed the chance level. (b) The second hypothesis was to determine whether each group could apply a global definition to their classmates and reach beyond chance agreement in rankings. In five of the seven groups this was demonstrated. Four of the five successful groups were highly successful (beyond .001) and the remaining one reached the .01 level. (c) The third hypothesis was that the GZTS could discriminate between a high and low approval group in the area of temperament. This was established at the .01 level for factors O(objectivity) and F(friendliness); at the .02 level for A(ascendancy) and at the .05 level for factor P(personal relations). Factors M(masculinity), E(emotional stability) and S(sociability) did not reach significance but give evidence of a tendency towards significance.

The overall differences between the two groups showed a pattern suggestive of 'faking good' in the low approvals. Two falsification scales indicated a significant difference in this regard at the .01 level. This suggested that the low
approvals tended to present themselves in a more favourable light and also tended to give themselves the benefit of any doubts. It was not the purpose of this study to predict specifically what factors would show differences, nor what influences were operating to produce the results obtained.

It would appear safe however, to assume that there is a disparity between the private view one has of himself and the public view held by others. The rankings by classmates was at variance with the results obtained from the GZTS.

Statistics relating to reliability and intercorrelations of the GZTS were presented. The general conclusion reached was that this study tended to support the original results obtained by Guilford. The ten factors were found to be relatively independent and to contribute, therefore, a different aspect of temperament for each factor. Both the size and the direction of the intercorrelations tended to show substantial agreement with the normative population.

In order to determine whether there was any relationship between the ranking of factors in their order of importance and the magnitude of the t ratio differences, a Spearman rho was applied. Table 14 presents the results. The obtained rho value of .65 was significant at the .05 level. The conclusion that may be drawn is that in those factors judged most impotant in the religious life one finds the greatest disparity between the high and low approval groups. The students as a whole
ranked factor 0(objectivity) as the most important and this factor represented the largest t ratio value. If the low approvals are inclined to 'fake good' it would be expected that such a result as the one obtained would occur.

The upper and lower twenty five per cent of the sample were compared. The direction of the differences remained the same but the magnitude of differences decreased somewhat. T ratios were computed but did not reach the level of significance. As Garrett(1958), Guilford(1950) and Gulliksen(1950) have pointed out, this may be due primarily to a problem of selection. That is, the same scatter of points in a restricted sample will give a relatively wider spread and hence a lower correlation. Guilford(1950) stated that correlations "are affected by the range of ability or of a trait present in the population sampled. The narrower the range, the smaller (the correlation) tends to be.(p.506)."

Table 14

Rank order of factors and t ratio magnitudes
for ten GZTS factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>G</th>
<th>R</th>
<th>A</th>
<th>S</th>
<th>E</th>
<th>O</th>
<th>F</th>
<th>T</th>
<th>P</th>
<th>M</th>
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<tbody>
<tr>
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<td>8</td>
<td>6</td>
<td>7</td>
<td>2</td>
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<td>3</td>
<td>5</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>t ratio rank</td>
<td>10</td>
<td>9</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Abstract

This study provided evidence to support the original authors published norms for such statistics as means, standard deviations, standard error of an obtained score and reliability estimates. It is in substantial agreement also in the matter of the direction and magnitude of the various intercorrelation coefficients. The study confirms that each of the factors is relatively independent and reflect a unique aspect of temperament. The study also validated the belief that the Guilford-Zimmerman Temperament Survey is sensitive enough to discriminate between a high and low approval group in the area of temperament. Statistical evidence was presented to substantiate the hypothesis that subjects would show beyond chance agreement in their ranking of the ten factors in the order of their importance in the religious life. In this instance all seven independent groups reached significant levels of agreement. Five of the seven groups reached significant agreement in ranking their classmates along the dimension of temperament.
REFERENCES


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Cottle, W.C. The MMPI: a review. Lawrence, Kansas: Univ. of Kansas Press. 1953.


Kendall, M.G. Rank correlation methods. London: Griffin. 1948


Saunders, D. see GZTS review in Buros, 1959.

Steenberg, N.Y. see GZTS review in Buros, 1949.

Stephenson, W. see GZTS review in Buros, 1949.


FAMILY BACKGROUND

1) LAST NAME, FIRST NAME: ____________________________

2) AGE, IN YEARS ( ) AND MONTHS ( ).

3) BORN IN U.S.A.? ( ), if NOT, specify country: ____________________________

4) RAISED IN U.S.A.? ( ), if NOT, specify country: ____________________________

5) FATHER BORN IN U.S.A.? ( ) if NOT, specify: ____________________________

6) MOTHER BORN IN U.S.A.? ( ) if NOT, specify: ____________________________

7) NUMBER OF BROTHERS( ) and SISTERS( ) ____________________________

8) NUMBER OF OLDER BROTHERS( ) ____________________________

9) NUMBER OF YOUNGER BROS. ( ) ____________________________

10) NUMBER OF OLDER SISTERS ( ) ____________________________

11) NUMBER OF YOUNGER SISTERS ( ) ____________________________

12) WAS YOUR BACKGROUND PREDOMINANTLY URBAN/CITY ( ) or RURAL ( )? ____________________________

13) SOCIO-ECONOMIC STATUS WAS: ( ) average; ( ) above average; ( ) below average ____________________________

14) PARENTAL MARRITAL STATUS BEFORE ENTERING DOMINICAN ORDER:

| ( ) still married | ( ) FATHER died when I was age ( ). |
| ( ) separated    | ( ) MOTHER died when I was age ( ). |
| ( ) divorced     | ____________________________ |

EDUCATIONAL BACKGROUND

15) Years of schooling completed BEFORE entering novitiate ( ) ____________________________

16) Number of years completed at Catholic Grade School ( ) ____________________________

17) Number of years completed at Catholic High School ( ) ____________________________

18) Number of years completed at Cath. College/University ( ) BEFORE entering Novitiate ____________________________

RELIGIOUS BACKGROUND

19) WERE YOU BORN A CATHOLIC? ( ) if NOT, specify: ____________________________

20) If a CONVERT, at what age ( ) ____________________________

21) WERE YOU RAISED A CATHOLIC? ( ) if NOT, specify: ____________________________

22) Was your FATHER born a Catholic? ( )

| IF NOT, specify: ____________________________ |

23) Was your FATHER raised a Catholic? ( )

| IF NOT, specify: ____________________________ |

24) Was your MOTHER born a Catholic? ( )

| IF NOT, specify: ____________________________ |

25) Was your MOTHER raised a Catholic? ( )

| IF NOT, specify: ____________________________ |

26) Did you ever belong to another Order, Congregation, Seminary, etc. ( a) If so, indicate its nature: ____________________________

| b) If so, indicate for how long: ____________________________ |

27) Date of your entrance into Dominican Novitiate: year. ____ & mo. ____

28) PRESENT STATUS IN ORDER:

<p>| ( ) postulant  |
| ( ) novice |
| ( ) simple professed |
| ( ) solemn professed |
| ( ) student priest |</p>
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</table>

**BE SURE YOUR MARKS ARE HEAVY AND BLACK.**

**ERASE COMPLETELY ANY ANSWER YOU WISH TO CHANGE.**
The Guilford-Zimmerman Temperament Survey

ADDENDA TO INSTRUCTIONS:
1) Please use pencils in case you make mistakes or want to change answers.
2) Please make your marks HEAVY to avoid scoring problems.
3) Please make all erasures thorough enough to avoid ambiguity.
4) SPECIAL NOTE: If your first choice to a question is in the "?" (i.e. doubtful) category, please add your second choice to the "yes" or "no" category. Thus any "?" will require a second choice on your answer sheet. For statistical reasons, a certain number of "?" answers tends to render a record invalid or unscorable.

INSTRUCTIONS: In this booklet you will find a number of statements. Read each statement carefully. If the statement seems to be true, or if you agree with it, mark answer "Yes" on your answer sheet. If the statement is more false than true, or if you disagree with it, mark "No." If you cannot decide between "Yes" and "No," you may mark answer "?" BUT AVOID DOING THIS IF POSSIBLE.

Be sure to answer every item.

There are no "right" or "wrong" answers in the usual sense of a high score being necessarily the best. The purpose of this Survey will be served best if you describe yourself and state your opinions as accurately as possible.

You may notice that many items are similar. Actually, no two items are exactly alike.

Notice that the numbering of items on the answer sheet follows across the rows rather than down the columns.

You may turn the page and begin with the items now unless the examiner tells you to wait.
You take life very seriously.

Other people think of you as being very serious-minded.

You often find it difficult to sleep at night because you keep thinking of what happened during the day.

You are inclined to think things over before you act.

You are inclined to limit your acquaintances to a select few.

You are friendly and people immediately feel at ease with you.

You are quick in your actions.

When you were a child, many of your playmates naturally expected you to be the leader.

When you find it difficult to get acquainted even though it may be quite easy.

It is difficult for you to understand people who get very concerned about things.

You feel lonesome even when with other people.

When you are served stale or inferior food in a restaurant, you say no.

You often act on the first thought that comes into your head.

You are a happy-go-lucky individual.

You would rather plan an activity than take part in it.

You have more than once taken the lead in organizing a project or a group of some kind.

You like to entertain guests.

Your interests change quickly from one thing to another.

When you eat a meal with others, you are usually one of the last to finish.

You believe in the idea that we should "eat, drink, and be merry, for tomorrow we die."

You find that something you have bought is defective, you hesitate to demand an exchange or a refund.

You find it easy to make new acquaintances.

You are sometimes bubbling over with energy and sometimes very sluggish.

You are happiest when you get involved in some project that calls for rapid action.

Other people think of you as being very serious-minded.

You often find it difficult to tell him about your troubles.

You believe that we should "eat, drink, and be merry, for tomorrow we die."

It is difficult for you to chat about things in general with people.

You feel lonesome even when with other people.

You are so naturally friendly that people immediately feel at ease with you.

You are quick in your actions.

When you were a child, many of your playmates naturally expected you to be the leader.

When you find it difficult to get acquainted even though it may be quite easy.

It is difficult for you to understand people who get very concerned about things.

You feel lonesome even when with other people.

When you are served stale or inferior food in a restaurant, you say no.

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Other people think of you as being very serious-minded.

You often find it difficult to tell him about your troubles.

You believe that we should "eat, drink, and be merry, for tomorrow we die."

It is difficult for you to chat about things in general with people.

You feel lonesome even when with other people.

You are so naturally friendly that people immediately feel at ease with you.

You are quick in your actions.

When you were a child, many of your playmates naturally expected you to be the leader.

When you find it difficult to get acquainted even though it may be quite easy.

It is difficult for you to understand people who get very concerned about things.

You feel lonesome even when with other people.

When you are served stale or inferior food in a restaurant, you say no.

You often act on the first thought that comes into your head.

You are a happy-go-lucky individual.

You would rather plan an activity than take part in it.

You have more than once taken the lead in organizing a project or a group of some kind.

You like to entertain guests.

Your interests change quickly from one thing to another.

When you eat a meal with others, you are usually one of the last to finish.

You believe in the idea that we should "eat, drink, and be merry, for tomorrow we die."

You find that something you have bought is defective, you hesitate to demand an exchange or a refund.

You find it easy to make new acquaintances.

You are sometimes bubbling over with energy and sometimes very sluggish.

You are happiest when you get involved in some project that calls for rapid action.

Other people think of you as being very serious-minded.

You often find it difficult to tell him about your troubles.

You believe that we should "eat, drink, and be merry, for tomorrow we die."

It is difficult for you to chat about things in general with people.

You feel lonesome even when with other people.

You are so naturally friendly that people immediately feel at ease with you.

You are quick in your actions.

When you were a child, many of your playmates naturally expected you to be the leader.

When you find it difficult to get acquainted even though it may be quite easy.

It is difficult for you to understand people who get very concerned about things.

You feel lonesome even when with other people.

When you are served stale or inferior food in a restaurant, you say no.

You often act on the first thought that comes into your head.

You are a happy-go-lucky individual.

You would rather plan an activity than take part in it.

You have more than once taken the lead in organizing a project or a group of some kind.

You like to entertain guests.

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When you eat a meal with others, you are usually one of the last to finish.

You believe in the idea that we should "eat, drink, and be merry, for tomorrow we die."

You find that something you have bought is defective, you hesitate to demand an exchange or a refund.

You find it easy to make new acquaintances.

You are sometimes bubbling over with energy and sometimes very sluggish.

You are happiest when you get involved in some project that calls for rapid action.

Other people think of you as being very serious-minded.

You often find it difficult to tell him about your troubles.

You believe that we should "eat, drink, and be merry, for tomorrow we die."

It is difficult for you to chat about things in general with people.

You feel lonesome even when with other people.

You are so naturally friendly that people immediately feel at ease with you.

You are quick in your actions.

When you were a child, many of your playmates naturally expected you to be the leader.

When you find it difficult to get acquainted even though it may be quite easy.

It is difficult for you to understand people who get very concerned about things.

You feel lonesome even when with other people.

When you are served stale or inferior food in a restaurant, you say no.

You often act on the first thought that comes into your head.

You are a happy-go-lucky individual.

You would rather plan an activity than take part in it.

You have more than once taken the lead in organizing a project or a group of some kind.

You like to entertain guests.

Your interests change quickly from one thing to another.

When you eat a meal with others, you are usually one of the last to finish.

You believe in the idea that we should "eat, drink, and be merry, for tomorrow we die."

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When you are served stale or inferior food in a restaurant, you say no.

You often act on the first thought that comes into your head.

You are a happy-go-lucky individual.

You would rather plan an activity than take part in it.
You often stop to analyze your thoughts and feelings...
You speak out in meetings to oppose those who you feel sure are wrong.
You are so shy it bothers you.
You are sometimes bothered by a useless thought coming into your mind.
You get things done in a hurry.
It is difficult for you to understand how some people can be so unconcerned about the future.
You like to sell things (that is, to act as a salesman).
You are often the "life of the party".
You find daydreaming very enjoyable.
At work or at play other people find it hard to keep up with the pace you set.
You can listen to a lecture without feeling restless.
You would rather work for a good boss than for yourself.
You can express yourself more easily in speech than in writing.
You keep in fairly uniform spirits.
You dislike to be hurried in your work.
You sometimes find yourself "crossing bridges before you come to them."
You find it somewhat difficult to say "no" to a salesman who tries to sell you something you do not really want.
There are only a few friends with whom you can relax and have a good time.
You are usually kept in spite of trouble.
People sometimes tell you to "slow down" or "take it easy".
You are one of those who drink or smoke more than they should.
When you think you recognize someone you see in a public place, you ask him whether you have met him before.
You prefer to work alone.
Disappointments affect you so little that you seldom think about them twice.
You are slow and deliberate in movement.
You like wild enthusiasm, sometimes to the point of bordering on rowdism, at a football or baseball game.
You feel self-conscious in the presence of important people.
People think of you as a very social type of person.
You have often lost sleep over your worries.
You can turn out a large amount of work in a short time.
You keep at a task until it is done, even after nearly everyone else has given up.
You can think of a good excuse when you need one.
Other people say that it is difficult to get to know you well.
Your daydreams are often about things that can never come true.
You often run upstairs taking two steps at a time.
You seldom let your responsibilities interfere with your having a good time.
You would like to take on important responsibilities such as organizing a new business.
You have hesitated to make or to accept "dates" because of shyness.
Your mood is very easily influenced by people around you.
Others are often amused by the amount of work you turn out.
You generally feel that if you had fewer business commitments you could do more in your leisure time.
You find it difficult to get rid of a salesman who tries to sell you something you do not care to listen to or give your time.
You are a listener rather than a talker in social conversations.
You always feel that life is very much worth living.

Disappointments affect you.

You are a person who really wants to please.

At work or at play other people find it somewhat difficult to say "no" to a salesman who tries to sell you something you do not really want.

You usually keep cheerful in spite of trouble.

You find it somewhat difficult to say "yes" to a salesman who tries to sell you something you do not really want.

You like to be hurried in your work.

You prefer to work alone.

You find daydreaming very enjoyable.

You keep in fairly uniform spirits.

You dislike to be hurried in your work.

You sometimes find yourself "crossing bridges before you come to them."

You find it somewhat difficult to say "no" to a salesman who tries to sell you something you do not really want.

There are only a few friends with whom you can relax and have a good time.

You are usually kept in spite of trouble.

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You find it difficult to get rid of a salesman who tries to sell you something you do not care to listen to or give your time.

You are a listener rather than a talker in social conversations.

You always feel that life is very much worth living.
In most places the traffic laws are in great need of improvement.

You would rather study mathematics and science than literature and music.

You get into scraps which you did not seek to stir up.

You resent having friends or members of your family give you orders.

You are philosophically inclined, that is, inclined to philosophize about things.

Most people keep to the "straight and narrow path" only because of the fear of being caught.

You especially dislike to get your hands dirty or greasy.

You are inclined to think about yourself much of the time.

You have frequently felt like telling "noisy" people to mind their own business.

There are too many useless laws which hamper an individual's personal freedom.

You feel you are likely to talk back to a policeman or other person in authority over you very often.

You would rather be an interior decorator than an architectural engineer.

You get a lot of satisfaction from making other people do as you want them to.

You like to discuss the more serious questions of life with your friends.

You like to read true stories about love and romance.

You are inclined to think about yourself much of the time.

You feel deeply sorry for a mistreated horse.

You have been seriously slighted more than once.

You are likely to talk back to a policeman or other person in authority over you.

You usually think of something you should have done but didn't do.

If you want a thing done right, you must do it yourself.

You can handle a loaded gun without feeling at all jittery.

Other people too often take the credit for things you yourself have done.

You know or have known someone personally whom you would like to see behind prison bars.

You are much concerned over the morals of your generation.

Large business corporations are a good thing.

You cry rather easily.

When it appeals to you, you will look into a problem.

You see to it that people do not take advantage of you.

You are inclined to ponder over your past.

Some people pay more attention to your comings and goings than they should.

The sight of a ragged or soiled fingernail is repulsive to you.

It is difficult to hurt your feelings.

It pays to "turn the other cheek" rather than to start a fight.

You try to sense what people are thinking about as they talk to you.

You have had your share of good luck.

You are too sensitive for your own good.

Large business corporations are a good thing.

You are inclined to steer clear of complicated problems that call for thinking.

You feel deeply sorry for a mistreated horse.

You have been seriously slighted more than once.

When you resent the actions of anyone, you promptly tell him so.

After a critical moment is over, you usually think of something you should have done but didn't do.

If you want a thing done right, you must do it yourself.

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If you want a thing done right, you must do it yourself.
275. You are willing to take a chance alone in a situation where the outcome is doubtful.
276. People have criticized you unjustly.
277. The opinions of most people are worthless.
278. You are inclined to introspective, that is, to analyze yourself.
279. Almost anyone, even though poor, can get a square deal in courts of law.
280. You would rather be a miner than a florist.
281. It is difficult for you to become interested in the problems of others when you have so many of your own.
282. It bothers you to have other people tell you what you should do.
283. You often wonder about why human life exists and what its future is.
284. Some people deliberately make things hard for you.
285. Odors of perspiration disgust you.
286. Criticism disturbs you very little.
287. It bothers you to see someone else bungling a job that you know perfectly well how to manage.
288. You are inclined to live in the present, leaving the past and the future out of your thoughts.
289. Most people will tell a lie now and then.
290. The sight of an unshaven man disgusts you.
291. When you lose something you often begin to suspect someone of either having taken it or having misplaced it.
292. There are some people whose actions seem continually to irritate you.
293. You like to have time to be alone with your thoughts.
294. There are entirely too many employees who deserve higher pay than their bosses.
295. You like love scenes in a movie or play.
296. There are times when it seems that everyone is against you.
297. If anyone steps ahead of you in line, he is likely to hear from you about it.
298. You often wonder why people behave as they do.
299. Nearly all people try to do the right thing when given a chance.
300. When you become emotional you come to the point of tears.

BE SURE YOU HAVE ANSWERED EVERY ITEM
PLACE ONLY YOUR CODE NUMBER:

As Dominicans we have, or will have, the right and obligation to vote. Voting is according to various criteria, physical, moral, intellectual, etc. One factor is the matter of temperament.

You are asked to rank ONLY members of your novitiate class. This ranking is ONLY on the factor of Temperament. You are asked to rank them in the order of your APPROVAL. You are NOT asked, or presumed to disapprove any individual. Since Temperament is the sole criterion you assume that all other factors (age, abilities, intelligence, etc.) are equal.

The list below, taken from the Catalogus, includes only those presently at Dubuque. Give each individual a separate rank number, placing number 1 opposite the name of your first choice for APPROVAL. Give number 2 to your next choice and so on. Its recognized your choices will be difficult but we are only interested in the degree of agreement or disagreement of those in any particular GROUP.

STUDENT PRIESTS: THEOLOGY  THEOLOGY: 3rd Year
The thesis submitted by Reverend James Harney, O.P. has been read and approved by the director of the thesis. Furthermore, the final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

February 8, 1967

Signature of Adviser