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Reliability and Construct Validity of an Adjective Rating Scale of Concept of God

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Abstract

The reliability and construct validity of Gorsuch's (1968) adjective rating scale of Concept of God (COG) was investigated. Two separate samples of 72 and 197 participants were utilized to complete four statistical analyses: (a) test-retest reliability was computed on a sample of 120 participants; (b) measures of internal consistency were computed providing coefficient alpha's for each scale of the COG; (c) the COG was correlated with the Spiritual Well-Being scale, the Spiritual Maturity Index, the Religious Orientation Scale, and the Spiritual Distress Scale; (d) a confirmatory factor analysis was completed hypothesizing both a one- and four-factor model. The four-factor model was based upon a review of the

literature. The degree to which these models provide an accurate estimate of the factor structure of the COG was assessed using the chi-square statistic, the Adjusted Goodness of Fit Index, and the Tucker-Lewis Index of goodness of fit. The results revealed encouraging support for test-retest reliability of the COG. In addition, the correlations of the COG with the other religious measures provided support for the construct validity of the COG. However, the results from the confirmatory factor analyses did not support the factorial construct validity of the COG. Neither the hypothesized four-factor nor one-factor models were confirmed. A scale-level exploratory factor analysis revealed that a two-factor solution provides the best explanation for the COG scales with this sample. In addition, significant skewness of the COG was noted in this investigation.

The COG in its present form should be used only as a research instrument, until questions concerning its construct validity have been resolved. In addition, many of the scales are limited to the interpretation of only high or low scores due to skewness. This skewness results in ceiling or floor effects for many of the

Table of Contents

List of Tables

CHAPTER 1

INTRODUCTION

Central to the Judeo-Christian tradition is a belief in God. The God who is described in the Bible is a spiritual being and not physically tangible to mankind. While the Bible informs us that no one has ever seen God, it is rich with accounts and metaphors which describe this unseen God. In light of the vast number of Biblical references to God, acts attributed to Him, and descriptions of Him, there appears to be great diversity in the ways in which people conceptualize God. Spilka, Artamas, and Nussbaum (1964) pointed out:

> Theological efforts to comprehend the nature of God range from a complete aversion of specification and circumscription as in Judaism, to rather carefully spelled-out formulations by various Christian religious bodies. (p. 29)

Even among the more recent systematic theological examinations of God there is great diversity. When moving to the individual, the diversity of views of God

appears to increase even more. This country boasts of a Judeo-Christian heritage in which an overwhelming number of persons profess a belief in God (Roof & Roof, 1984), and yet the specific nature of these beliefs appears to vary widely.

Despite this diversity, little research has been completed into the manner in which individuals conceptualize God. Some of this may be attributed to the unpopularity of the religious domain among researchers in the fields of psychology and sociology. However, more recently the religious domain has emerged as a legitimate area of study within psychology and social science. Additionally, an increasing number of religiously oriented psychologists have become involved in research in this area (Gorsuch, 1988).

Yet even with the emergence of interest in the religious domain and the proliferation of new religious research, only a sparse amount of research has investigated the construct of God concept. In addition, the manner in which the construct has been explored has greatly varied. As research became more empirical, instruments were developed to measure concept of God. However, the instruments typically had

little research development and were often used only once or twice.

This latter problem poses a significant difficulty for any research completed in this area. When an instrument is not established as reliable and valid the results are tentative at best.

The lack of reliable and valid instruments in this area is unfortunate since a number of researchers have highlighted the construct of God concept as an important one. For example, Gorsuch (1968) pointed out that cross denominational and cross cultural studies may yield interesting results for this construct. Possibly of more importance are studies which would investigate the behavioral and personality correlates of God concept.

More recently it has been suggested that the occurrence of sexual abuse will affect the victim's concept of God and subsequently his or her relationship with this God (Vredevelt & Rodriguez, 1987); this area of investigation is of particular interest to this researcher. In fact, originally a clinical study had been proposed to investigate the effect of childhood sexual abuse upon the an adult female's

conceptualization of God. However, since there is presently no reliable or valid instrument with which to measure concept of God, adequate research cannot take place.

Statement of Problem

Presently, there exists a consistent opinion that the construct of God concept is an important area of research within the religious domain. Yet, there exists no reliable or valid instrument to measure this construct. Thus the results yielded from the studies to date are subject to criticism. Additionally, further research into this area is impeded.

In light of this, the objective of this study was to evaluate a previously developed instrument used to measure God concept. It was intended that this study would contribute to the accumulation of data for the establishment of reliabilty and construct validity for this instrument. The most widely used instrument, Gorsuch's (1968) Concept of God scale, was chosen and several different statistical procedures completed. In particular, a confirmatory factor analysis, test of

internal consistency, test-retest reliability, and correlations with other measures were performed upon this instrument. It was anticipated that once this information was gathered this instrument would be more useful for a variety of research. Additionally, more researchers would be inclined to use an instrument which had proceeded further in the validation process.

Review of Research

Psychologists have displayed an interest in the systematic investigation of the construct of God concept for over 20 years. Even as early as 1913, Freud (1913) hypothesized that an individual's belief in God was a projection of his or her image of father. In terms of content, most research completed in this area has investigated a projection theory of God concept (Spilka, Hood, & Gorsuch, 1985). In addition, the development of God concept, gender differences in God concept, and the relation of God concept to moral behavior, personality traits, and mental health have been investigated.

The manner in which each of these areas of this construct has been investigated has varied significantly. A portion of the research has been idiographic in nature. In addition to this, many researchers have utilized some form of self report survey to investigate God concept. This review of the literature will focus upon the methodology of the research base, with particular attention to the instruments utilized by the researchers. Case studies, interviews, written protocols, drawings, and surveys used to investigate God concepts will each be examined in turn.

Case Studies

A recent review of the literature revealed that there had been at least five investigations utilizing case studies to examine the construct of God concept. Most of these studies had been published within the last three years. Randour and Bondanza (1987) presented the case study of a 40 year-old woman to argue that a cultural concept of God significantly influences the psychological development of women.

They hypothesized that the cultural God image impacts the individual's self-representation.

Several published case studies illustrated how the reexamination and transformation of God images had been beneficial to clients in therapy. Compaan (1985) reported how a 35 year-old woman had been helped to deal with her childhood sexual abuse as her perceptions of God were changed. Rossi (1985) similarly reported progress for a religiously oriented client in her mid-forties. Conversely Edkins (1985) pointed out with a case report of a 35 year-old male how the internal state of an individual could dominate his/her understanding of God.

Lastly, Bowman, Coons, Jones, and Oldstom (1987) studied the God images and personality splits of seven women with multiple personality disorder. They found that different God images were associated with different personalities and suggested that God images reflected the dynamics of an individual's personality.

In summary, the data gathered from case studies suggests the importance of God images as they relate to self representation and for promoting progress in therapy.

Interviews

Nye (1981), in investigating the development of concept of God in children, conducted semi-clinical interviews with 120 Protestant and Catholic day school students between ages 5 and 16. Twelve questions were asked to initiate conversation concerning God concept. He reported no differences across denominations but found that as a child's ability to think abstractly increased their concept of God became more abstract.

Written Protocols

Ludwig, Weber, and Iben (1971) investigated the development of God concept by asking second, fifth, and eighth graders attending a Christian school to write a letter to God. The 135 letters were analyzed for four categories; areas of concern, social awareness, self-time consciousness, and image of God. These areas were devised by the authors in hopes of measuring emotional and intellectual development. They reported that as children develop, their concept of God tended to move from external doctrinal beliefs to an integral part of their perception. However, the scoring procedure,

which appears very subjective, seems to call these reported results into question.

Roe, Warner, and Erikson (1986) analyzed story protocols of 16 female professionals to investigate the impact of the feminist movement upon their religious beliefs. Responses were analyzed for statments pertaining to "feminism" and religious orthodoxy. They concluded that "feminism" led subjects to expand their images of God. However, the procedures by which the protocols were analyzed and the way in which God images were expanded were not reported.

Drawings

Harms (1944) studied thousands of children's drawings of religious symbols in an effort to investigate development of God concept. From his data he reported two stages of development of concept of God. The manner in which he arrived at this is somewhat ambiguous and appears to be influenced in part by the researcher's subjective interpretation of the data.

Surveys

Nelson and Jones (1957) explored the psychoanalytic hypothesis of God concept as the projection of father by using a Q-sort procedure. Strunk (1959) completed a follow-up study utilizing the same methodology on religiously trained Protestant students. These studies yielded conflicting results. Nelson and Jones found that the formation of images of deity were most influenced by mother-concept. Strunk on the other hand found father concept to be most closely related to God image. However, Strunk's sample was relatively small, highly religious, and homogeneous, which likely influenced his results.

At this same time Osgood, Suci, and Tannenbaum (1957) analyzed the ratings of numerous concepts on bipolar adjective scales. They reported that conceptual meanings concerning a wide variety of concepts could be summarized by three dimensions: evaluation; potency; and activity. Heise (1965), utilizing the work of Osgood et al. studied naval enlistees and found that they tended to see God as high on evaluation, moderate on activity, and low on the potency factor.

The research by Osgood et al. (1957) resulted in the development of the Semantic Differential measurement technique (Gorsuch, 1968). The use of this technique has comprised a major portion of the survey research on God concept.

Benson and Spilka (1973) developed a 13-item semantic differential scale to measure loving and controlling God images. Bipolar items such as rejecting-accepting and loving-hating were placed on a six-point scale. They correlated this scale with locus of control and self-esteem scales on a sample of 128 Catholic high school students. Benson and Spilka reported that locus of control was unrelated to God images but self-esteem was related. They proposed that self-esteem was a major determining factor of God images.

Spilka, Addison, and Rosensohn (1975) followed up the above research by investigating the impact of parental and self images on concept of God. They utilized twelve items of the semantic differential scale used previously by Benson and Spilka. The authors reported this scale had good internal consistency but neither article reported statistical

measures for the scale itself. Interestingly, the researchers also utilized an adjective checklist developed by Gorsuch (1968) to gain a "more complete perspective on God concepts" (p.167). They reported that the results did not confirm any one of the proposed models (Freudian, Adlerian, Social Learning theory, or self-esteem) of explanation of God image. Spilka et al. went on to discuss the difficulties of the measurement procedures, suggesting that the items of the instruments used may contribute to the lack of confirmation of any of the models.

In addition to the two above studies, some form of this semantic differential scale has been used in several other studies. Chartier and Goehner (1976) used the original 13 items developed by Benson and Spilka (1973) to investigate the relationship between parent-adolescent communication, self-esteem, and God image. Significant relationships were found between adolescent self-esteem and God image.

Dean (1987) also used all 13 of the items from the semantic differential scale to investigate the relationship between perception of their father's

parenting style and concept of God among college women. She found that women who reported having controlling fathers also expressed a concept of God that was controlling.

It is important to note here that the semantic differential scale utilized in these studies was developed by Benson and Spilka (1973) for their particular study. There does not appear to be any empirical research on the instrument itself. Therefore, the researchers were assuming without verification that the instrument was actually measuring controlling and loving images of God. In light of this, the results from studies utilizing this instrument are tentative at best.

Vergote et al. (1969) developed an instrument designed to measure God concept and parental images in an effort to produce research that would support a Freudian view of the development of God image (Benson & Spilka, 1973). Literature from a variety of fields was canvassed for items. From a pool of 226 items, in the form of words or phrases, 36 items were selected on the basis of a hypothesized ability to measure maternal or paternal images. Items were rated by subjects as to

how they related to mother, father, and God. In a sample of 180 Catholic female high school and college students, the authors found that God images were related more strongly but not exclusively to a paternal symbol. While this study explored paternal symbols it did not specifically relate to participant's fathers.

In a later study, Vergote and Aubert (1972) utilized the same scale to carry out a cross cultural study of the relationship of parental and God images. They concluded that American girls described God in both maternal and paternal terms but American boys described God primarily in paternal terms. As both boys and girls increased in age, they found that more maternal values were integrated into God images.

Keyser and Collins (1976) also used Vergote's scale to explore the relationship of conversion and God images. They reported that the earlier an individual experienced conversion the more parental his or her image of God was. However, they used 72 items which Pasquali (1970) had adapted from the 226 items used in Vergote's original research.

More recently, Roof and Roof (1984) were able to do a large-scale study of God images when a survey

investigating God images was included in the 1983 General Social Survey. Nearly 1600 individuals were surveyed using 12 adjectives on a likert-type scale. While little information was given concerning the instrument used, it appears that it was developed specifically for this study.

The study by Roof and Roof (1984) illustrates a trend in the research of concept of God. There have been a number of researchers who have developed and used instruments for a particular study and then these instruments were not used again. For example, there appear to be at least two other semantic differential scales utilized in one study each (Jolley & Taulbee, 1986; McKenzie, 1987). Additionally, other surveys developed to measure the relationship between parental and God images have been employed in single instances by Beit-Hallahmi and Argyle (1975), Nicholson and Edwards (1979), and Justice and Lambert (1986).

One other instrument that has been used to measure God concept is Gorsuch's Adjective Rating Scale of Concept of God (COG). The COG is a 75 item adjective checklist utilizing a six-point likert-scale. This scale was initially developed by Gorsuch (1968) based

upon prior research by Spilka, Artamas, and Nussbaum (1964). Gorsuch attempted to develop a scale which would resolve problems of replication demonstrated in earlier research. He sought to develop a scale which would allow a variety of religious and nonreligious positions to be expressed concerning conceptualizations of God in order that the scale may be more useful.

The COG scale was developed utilizing factor analysis. Primary, secondary, and tertiary factors were found, with a total of eleven factors. The eight primary factors were Kindliness, Wrathfulness, Deisticness, Omniness, Evaluation, Irrelevancy, Eternality, and Potently Passive. There were two second-order factors, Benevolent Deity and Companionable, and one third order factor, Traditional Christian. Gorsuch (1968) reported that the interrelationship of the eleven factors resulted in four unrelated factors.

In addition to Gorsuch's original study, the COG scale has been used in five other studies. Two doctoral dissertations, Lewis (1986) and Dean (1987), have utilized different portions of the scale. Lewis evaluated the relationship of denominational

affiliation to conceptualization of God. Dean's research investigated the relationship of daughter's relationship with father and concept of God, utilizing multiple regression.

Hammersla, Andrews-Qualls, and Frease (1986) modified Gorsuch's original scale to study the relationship of religious commitment, academic major, and concept of God among religious college students. The authors found few significant results in this highly homogeneous sample. Poling, Kenney, and Jilnicki-Lipman (1988) used the scale as modified by Hammersla et al. to study the relationship of God concept and personality traits among state university students. The later study factor analyzed the results.

Summary

This review of the literature demonstrates the fragmented and underdeveloped nature of the research on God concept. The idiographic studies completed, utilizing case studies, interviews, and written responses, have been diverse in nature and results. The survey research has displayed more cohesiveness with an emphasis upon the relationship between parental

images and God concept. However, the methodology employed with these measures has been diverse here as well. Additionally, there have been numerous instruments developed and used for a single or very few studies. Even those instruments that have been used more than once have virtually no reliability or validity data available on them. Without such information the results from these studies are tenuous. The one instrument that has demonstrated some promise is Gorsuch's adjective rating scale. It was developed utilizing sophisticated statistical procedures and has some evidence supporting reliability and validity. This instrument will be reviewed in depth following a discussion of reliability and validity.

Test Reliability

The Standards for Educational and Psychological Tests and Manuals (American Psychological Association [APA], 1985) states that "reliability refers to the degree to which test scores are free from error of measurement" (p. 35). Stated another way, test reliability indicates the extent to which individual

differences in test scores are attributable to true differences in the characteristics under consideration and the extent to which they are attributable to chance errors (Anastasi, 1982). For a test to be said to be reliable it should have a low degree of individual differences which do not relate to the characteristic being measured.

There are a number of types of test reliability. The first is test-retest, in which a reliability coefficient is derived by computing the differences of two administrations of the same test. The error of measurement or error variance represents the random fluctuations on performance from one test situation to the other. Test-retest reliability demonstrates the extent to which scores on a test can be generalized over different occasions.

Another method of test reliability is alternate form. In this method, a comparable form of the test is administered and correlated with the first test. This method is useful in avoiding practice affects present with test-retest reliability but is only useful when appropriate comparable forms of a test are available.

Split-half reliability is another method which involves only one administration of the test. The items are divided into two comparable halves and then evaluated. The method is sometimes called a coefficient of internal consistency. It can be accomplished only when a test can feasibly be split into comparable halves.

The last method of finding reliability is evaluating the consistency of response to all the items on the test. One such method is called coefficient alpha, which measures inter-item consistency for tests in which there is not a simple "right" or "wrong" answer (e.g. Likert-scale). Inter-item consistency is affected by both content sampling and the heterogeneity of the trait sampled. The more homogeneous the domain the higher consistency will be (Anastasi, 1982).

Test Validation

A past edition of the Standards for Educational and Psychological Tests and Manuals (APA, 1966) states in its introduction:

> Psychological and educational tests are used in arriving at decisions which may have great influence on the ultimate welfare of the persons tested, on educational points of view and practices, and on development and utilization of human resources. Test users, therefore, need to apply high standards of professional judgment in selecting and interpreting tests, and test producers are under obligation to produce tests which can be of the greatest possible service. The test producer, in particular, has the task of providing sufficient information about each test so that users will know what reliance can safely be placed on it. (p. 38)

The most recent edition of the Standards (APA, 1985) also underscores the importance of having adequately developed instruments. This document outlines "primary standards" which are those that "should be met by all tests before their operational use and in all test uses, unless a sound professional reason is available to show why it is not necessary, or technically feasible, to do so in a particular case"

(p. 56). Two primary standards set forth in Standards are validity and reliability.

The Standards (APA, 1985) states that "validity is the most important consideration in test evaluation." Validity concerns the ability of an instrument to measures what it purports to measure and to what degree it accomplishes this objective (Anastasi, 1988). Additionally, this concept refers to the meaningfulness and accuracy of inferences made from test scores. The process of validating a test is the accumulation of data which supports the inferences from scores. It is actually the inferences made from the test scores which are validated, not the test itself.

There are traditionally three broad categories of validity: content-related; criterion-related; and construct-related. The use of these labels does not imply that these types of validity are entirely distinct from one another. Typically, evidence accumulated for content and criterion related validity is also relevant to construct validity (Anastasi, 1988). Table 1 gives an overview of the types of validity.

Table 1

Types of Validity

1. Content-Related Validity
2. Criterion-Related Validity
3. Construct Validity
a. Developmental Changes
b. Correlations with other Tests
c. Factor Analysis
d. Internal Consistency
e. Convergent and Divergent Validity
f. Experimental Interventions

Note. From Anastasi (1988)

Content-Related Validity

Content validation is the systematic examination of an instrument's content to determine if it covers a representative sample of the behavior domain to be measured (Anastasi, 1982). This procedure is often used to validate achievement and occupational tests.

According to Anastasi (1982), content validation is usually inappropriate for personality or aptitude tests and may even be misleading. While the relevance and representativeness of the content of the test must be considered during test construction, the validation process of personality and aptitude measures requires empirical verification by other types of validity. Anastasi goes on to say the content of personality and aptitude measures will reveal little more than the hypotheses that led the test constructor to choose the particular content to measure the trait. Empirical methods must be used to evaluate hypotheses from measures such as these.

Criterion-Related Validity

Criterion-related validation, according to Anastasi (1982), indicates the effectiveness of a test in predicting an individual's behavior in specified situations. To accomplish this task, performance on a test is correlated with a direct and independent measure (a criterion) of that which the test is designed to measure. Thus criterion validity is

concerned with how well a test can predict an individual's behavior in a particular situation.

Criterion validation has been divided into two types by the Standards (APA, 1974). The basis of this differentiation is the time relation between the criterion and the test. Concurrent validity is concerned with tests relevant for determining the existing status of a particular ability or skill, while predictive validity refers to the prediction of future outcomes. According to Anastasi (1982) the information provided by these types of validity are most useful for the selection and/or classification of persons in an academic or occupational setting.

Construct Validity

Construct validity assesses the extent to which a test measures a theoretical construct or trait (e.g., intelligence). The construct should be embedded in a conceptual framework which specifies the meaning of the construct, distinguishes it from other constructs, and indicates how measures of the construct should relate to other variables (APA, 1985).

Construct validity is more comprehensive in nature and incorporates the other types of validity. Thus it will utilize evidence from content and criterion validity studies. The process of construct validation begins with test development and continues until the empirical relationships between test scores and other variables clearly indicate the meaning of the test scores (APA, 1985). Since construct validity is more abstract in nature than other types of validity it necessitates the accumulation of data.

The accumulation of evidence for construct validity of a test may be obtained through a variety of sources. Anastasi (1988) has outlined six specific techniques used to establish the construct validity of an instrument. These techniques include utilizing developmental changes, correlations with other tests, factor analysis, internal consistency, convergent and discriminant validation, and experimental intervention.

Developmental Changes

Age differentiation as a criterion applies only to those functions which exhibit clear-cut and consistent age changes (Anastasi, 1982). This means of validation has found most application with intelligence measures.

With personality measures on the other hand it has found only limited use. Additionally, even when age differentiation is applicable, it is a necessary but not sufficient condition for validity.

Correlations with other Tests

This technique is at times cited as evidence of construct validity. When a new test is correlated with a similar earlier test the correlations should be moderately high, but not too high (Anastasi, 1982). This provides evidence that the new test measures approximately the same general area of behavior. However, when a new test correlates too highly with existing measures it represents needless duplication and adds no advantages unless it is significantly shorter or easier to administer, or offers a needed parrallel form. Correlations with similar and dissimilar tests can also be used to show that the test is free from the influence of particular irrelevant factors.

Factor Analysis

According to Anastasi (1982), factor analysis is particularly relevant to construct validation as a means of identifying psychological traits. Factor

analysis is a refined statistical technique for analyzing the interrelationships of data. It is useful for identifying the factorial composition of a test. This information helps characterize the test in terms of the major factors it measures.

Internal Consistency

The essential characteristic of internal consistency as a method of construct validation is that the criterion the test items are measured against is none other than the total score on the test itself (Anastasi, 1982). These are essentially measures of homogeneity. It is helpful for construct validation because it helps characterize the behavior domain or trait sampled. However, in the absence of external data to support validation, internal consistency contributes little to the test validation process.

Convergent and Divergent Validity

Simply stated, convergent validation demonstrates that a test correlates highly with that which it should theoretically correlate highly with. Whereas, divergent validity shows that a test does not correlate significantly with variables to which it should theoretically be unrelated. Anastasi (1982) pointed

out that this is an important piece of evidence for personality measures, since many irrelevant variables may affect the scores.

Experimental Interventions

This technique is another source of data for construct validation. It is provided by experiments in which the effect of selected variables on tests scores is measured. Support for the construct is provided when interventions known or believed to effect the construct of interest show predicted effects on test scores.

The relative importance of each of these areas of construct validity as they relate to the COG will be addressed in a later section.

Concept of God Scale

As noted above, Gorsuch's (1968) Concept of God scale was constructed from a theoretical and empirical basis and displays the most psychometric sophistication and the widest use among the instruments for evaluating God concept. Gorsuch developed the adjective rating scale of conceptualizations of God based upon previous

research completed by Spilka, Armatas, and Nussbaum (1964). Spilka and his associates gathered 205 responses to the questions "What does God mean to you? Please indicate by defining what the nature of God is" (p. 30). The participants included 110 undergraduate university students, 55 student nurses, and 40 middle-aged persons attending a Methodist Sunday School. The authors noted that all the participants reported themselves to be very religious.

From the initial responses, 64 terms were selected by judges to be used to measure God concept. These items were administered to two samples, one "very religious" sample composed of 200 female Catholic college sophomores and one general sample composed of 364 university students. To administer the items the authors utilized a Q-sort procedure. This procedure asks participants to sort cards containing statements or trait names into piles ranging from "most characteristic" to "least characteristic".

The data for each sample was then intercorrelated and factor analyzed, using a varimax rotation. The authors stated they had no criteria for determining significant factor loadings and therefore selected a

relatively conservative cutoff. All items that loaded greater than .30 comprised a factor. If fewer than four words comprised a factor it was considered nonsignificant.

For the religious sample 11 factors were found. The first factor accounted for the most variance and could be described as "the vindictive God of the Old Testament". Factor 1 is best defined as a wrathful, avenging and damning view of God as opposed to a warm and charitable one.

Factor 2 was similar to factor one but included an unyielding-permissive continuum. The authors called this factor the "stern father". Factor three displayed an "omni" view of God, including such items as omnipotent, omnipresent, absolute, and infinite. The authors noted that this was a popular view of God. The other factors included the ideas of "God the kindly father", "impersonal, supreme ruler", and "the psalmist God". Only tentative descriptors were given to other factors.

The nonreligious general sample had 12 significant factors. The first factor accounted for a very significant 32% of the total variance. It primarily

held positive items such as comforting, helpful, patient, and kind.

When the results of the two samples were analyzed and compared, four or possibly five common factors were found. These include the factors described as stern father, the omniness of God, the impersonal God, the kindly father, and possibly the supreme ruler concept. The authors were hesitant to match the factors and found some factors which did not match. Additionally, they called for further research in this area.

Gorsuch (1968) sought to expand Spilka, Artamas, and Nussbaum's (1964) research by completing a similar study. He researched the way in which people conceptualize God by utilizing 63 adjectives developed by Spilka, Armatas, and Nussbaum (1964). In addition to these items, he used 28 adjectives from research done by Osgood, Suci, and Tannenbaum (1957). Spilka et al. analyzed the ratings of numerous ways to conceptualize God on bipolar adjective scales in order to determine the general meaning of the concepts. They found that meanings could usually be summarized into three different dimensions: evaluation (e.g., good vs. bad); potency (e.g., strong vs. weak); and activity

(e.g., active vs. passive). The items selected from Osgood et al. represented these three dimensions.

Participants rated each adjective on a 3-point scale: 1 meant "the word does not describe God"; 2 meant "the word describes God"; and 3 meant "the word describes God particularly well". To the 91 single adjectives were added 8 demographic variables and a variable for sex.

The adjectives were rated by 585 undergraduate students in general psychology classes. The sample contained 234 women and 351 men. A variety of religious denominations were represented by the participants, but were largely from Christian denominations. By random selection 85 males were chosen out of the sample for later analysis to determine the internal consistency of the measure.

The data was factor analyzed utilizing a Promax (oblique) rotation. Eight primary, two secondary, and one tertiary factors were extracted by this method, yielding 11 factors from a total of 75 items. Loadings with an absolute value of .30 or higher were considered significant.

Using this criterion Gorsuch found 51 items which fell under the tertiary factor called Traditional Christian (TRA). This factor views God as a deity who is actively concerned for and involved with mankind. Adjectives such as all-wise, divine, majestic, omnipotent, real, righteous, and sovereign reflect this factor. Gorsuch reported that this factor embodied a more distinctly Christian view of a deity by emphasizing a favorable orientation towards man with such adjectives as charitable, fair, faithful, forgiving, gentle, helpful, kind, and loving.

Twelve items comprised the Benevolent Deity factor (BEN). This secondary factor appears to represent both the transcendent and benevolent concepts simultaneously. There is a sense of a transcendent deity who is involved with mankind reflected in such adjectives as comforting, not inaccessible, merciful, not passive, and protective.

A secondary factor described as Companionable (COM) was found with seven items loading under it. Similar to the BEN factor, this also has elements of the immanent aspect of the deity but lacks the transcendent qualities. According to Gorsuch, God is

described here as one might describe a friend, using such adjectives as fair, considerate, helpful, kind, moving, and warm.

Thirteen items loaded under a primary factor called Wrathfulness (WRA). This factor reflects a view which sees God as standing in judgment over mankind. Gorsuch believed that this factor might be able to differentiate between certain religious movements (e.g., fundamentalist vs humanistic). It is represented by such items as avenging, damning, critical, severe, stern, and wrathful.

A primary factor called Omniness (OMN) had four items under it. This factor conceptualizes God with particular infinite powers and is measured by the four adjectives infinite, omnipotent, omnipresent, and omniscient. The primary factor labeled Deisticness (DEI) sees God as being so transcendent that He has little if anything to do with mankind. Such adjectives as distant, impersonal, and inaccessible were included in the five items making up this factor. Another primary factor labeled Potently Passive (PAS) was found having three items. Gorsuch stated that this factor was difficult to interpret due to the lack of loadings.

The three adjectives making up this factor were still, slow, and tough.

In addition to the factors above, four other factors were found, including 12 items under Kindliness (KIN), five items under Evaluation (EVL), four items under Irrelevancy (IRR), and four items under Eternality (ETR). The Kindliness factor incorporates the view that God is "kindly disposed" towards mankind, illustrated by such adjectives as charitable, comforting, and gentle. Evaluation as a factor contains the idea that God is important or valuable for the individual. The Irrelevancy factor can be described by the phrase "God doesn't really exist and if he did, it wouldn't really make any difference". Lastly, the Eternality factor sees God as being eternal, everlasting, holy, and divine.

When the interrelationships of the factors were observed four major headings were found. Table 2 displays the factor structure found from the results of Gorsuch's investigation. The three primary factors WRA, OMN, and PAS were unrelated to any other primary factor. The other major heading is TRA. This third order factor subsumed the other seven factors.

Table 2

Factor Structure of COG

Primary	Secondary	Tertiary
Evaluation		
Relevancy[a]	Companionable	
Kindliness		Traditional
Eternality	Benevolent Deity	
Lack of Deisticness[b]		
Wrathfulness		
Omniness		
Potently Passive		

[a]Opposite of Irrelevancy. [b]Opposite of Deisticness

In analyzing this data, Gorsuch compared his results to those of Spilka, Armatas, and Nussbaum (1964), finding several matching factors. He asserted that at least three factors, Omniness, Deisticness, and Wrathfulness were tentatively established, having been found in Gorsuch's sample and in both of the samples

used in the study by Spilka et al. He went on to say that "the replication of these three factors across divergent samples is strongly suggestive of their viability and probable importance. The existence and nature of these particular ways of conceptualizing God can therefore be concluded to have been established" (p. 63).

In addition to these three matching factors, Gorsuch (1968) observed similarities in the TRA factor and a number of the factors in the previous study. Gorsuch reported that these similarities provide some evidence for a "general factor" of God concept. A similar hypothesis has been more recently posited by Gorsuch (1984) concerning a "general religious factor". This factor may account for the high correlations among many religious tests and may possibly be related to the TRA factor found in this study.

Gorsuch sought to develop a scale with this data and set forth the following criteria for items to be included: first, that each variable load not less than .40 on the factor; second, that each variable have its strongest loading on the factor; and third, that each variable have no loading on any other factor within .10

of its major loading. Under these conditions only five factors had at least three variables meet the criteria due to overlapping items. The factors were TRA with 15 items, WRA with 11 items, DEI with 3 items, OMN with 4 items, and IRR with 4 items.

No other validity studies on the scale were reported by Gorsuch (1968). He did provide coefficients of internal consistency for several of the scales from the sample of 85 males: TRA--.94; WRA--.83; DEI--.71; OMN--.89; and IRR--.49.

Gorsuch's COG scale has gained wider use than other measures investigating conceptualizations of God. To date six additional studies have utilized at least some of the items from this scale.

As noted above, Spilka, Addison, and Rosensohn (1975) used 45 items from Gorsuch's original research. These constituted the five major factor loadings and were described as separate views of God. It is unclear exactly what items he used since only 37 items comprise the five scales under Gorsuch's criteria. Additionally, the specific nature of the results from the 45 items used by Spilka et al. is unknown. Therefore, this study provides little specific

information concerning the usefulness of the scale. However, it is important to note that the COG items were included to help provide a better understanding of God concept. The authors seem to imply that the semantic differential scale they utilized was not fully adequate for understanding concept of God and that the COG can provide more information.

Lewis (1986), in his doctoral dissertation, used 72 of Gorsuch's items. He surveyed 51 members of a Unitarian church and 46 members of a Baptist (General Conference) church. The instruments used included the Spiritual Well-Being Scale (SWB), the Intense Ambivalence Scale, and the COG.

Lewis had intended to use all 75 of the items from which the 11 factors were found in Gorsuch's (1968) original research. However, Lewis inadvertently left 3 items off. Lewis also modified the rating scale for the COG by increasing it to a six-point scale. He also reversed the usual order for the categories so that 1 equaled strongly like God and 6 equaled strongly unlike God. As a result he had to change all of his correlation signs from negative to positive.

From the results of his study Lewis found strong correlations ($p<.001$) between the TRA subscale of the COG and the SWB full scale (.569) and RWB subscale (.752). He also found a significant correlation between the WRA subscale and the SWB (.317) and the RWB (.418), and a negative correlation between the DEI subscale and the SWB (-.517). These results lend some support to the possibility of a general religious factor.

In addition to the correlations between scales, Lewis also found that Baptists and Unitarians reported different conceptualizations of God. Baptists rated such factors as TRA, OMN, EVA, ETR, WRA, COM, BEN, and PAS as more descriptive of God than Unitarians. In contrast, Unitarians rated DEI and KIN as more descriptive of God than the Baptists. These results suggest that the COG is sensitive enough to detect differences in God concept among religious groups. It is unclear how the exclusion of the three items from the COG impacted the results of this study.

Also as part of a doctoral dissertation, Dean (1987) used the 45 items Spilka, Addison, and Rosensohn (1975) included in their study, representing the five

major factor loadings. Dean administered the COG items, the SWB, a semantic differential scale of God concept, and the Children's Report of Parental Behavior Inventory to 127 female students at Messiah College.

Correlations between scales were similar for Dean's sample as for Lewis'(1986). Dean found a significant positive correlation ($p<.01$) between the TRA subscale of the COG and the SWB fullscale (.215). There was also a strong negative correlation ($p<.001$) between the DEI subscale and the SWB (-.465), RWB (-.415), and EWB (-.356). Dean also found a relationship between perceived acceptance by father and a woman's view of God as kind and loving. She went on to say that the more controlling a women perceives her father the more controlling and wrathful she will perceive God.

Hammersla, Andrews-Qualls, and Frease (1986), in a study of God concept and religious commitment of religious college students, modified Gorsuch's scale. To keep the measure under 90 items, the authors deleted items on which participants were expected to differ little and items which were expected to show little salience for university students. New items were added

to the scale to include concepts which appeared to them to be omitted in earlier research. The 75 items from Gorsuch's research and the 28 new items were combined to form nine scales (Benevolent, Distant, Irrelevant, Majestic, Potent, Sensual, Creative, & Valuable). These new scales were developed in response to conversations the researchers had with students and a review of the literature which suggested a "new" religious consciousness. However, there is virtually no information concerning the manner in which the researchers derived the additional items for the scale.

The participants were also asked to fill out a questionnaire so as to gather demographic information and were asked to rate their commitment to God on a 10-point scale. The adjective checklist broke down into a total of nine dimensions, and was scored on a 5-point Likert scale.

The results of the study showed that while conceptualizations of God were unrelated to year in school, both academic major and gender displayed significant relationships to several dimensions of conceptualizing God. The authors acknowledged some difficulties with their instrument but did not

elaborate on how it affected their particular study. The results of the study also showed eight of the scales were related to religious commitment. However, further evaluation revealed high intercorrelations among the scales.

Hammersla et al. (1986), in looking at the high intercorrelations among the scales, compared their data to previous research in this area and pointed out that essentially the same four factors have emerged as found in Gorsuch's (1968) original research. The first similar factor was a favorable God dimension to which the six positive scales of Hammersla et al.'s instrument contributed. The other similar factors were an unfavorable God dimension, a Vindictive God dimension, and a Distant dimension.

The favorable God dimension is similar to Gorsuch's Traditional Christian scale. This factor is also similar to the Kindly-God factor suggested by Benson and Spilka (1973) in their study in which they used Spilka, Armatas, and Nussbaum's (1964) 64-adjective Q-sort measure of God images. The Vindictive dimension relates to Gorsuch's Wrathful scale and to the Stern Father factor from Benson and Spilka's study.

The Distant dimension in this study is similar to the factor labeled Omniness by Gorsuch and Impersonal Supreme Ruler by Benson and Spilka. Hammersla et al. also reported that their Irrelevant dimension was similar to Gorsuch's Deistic and Irrelevant factors and Benson and Spilka's Impersonal Distant dimension.

Utilizing the modifications of Gorsuch's scale by Hammersla et al. (1986), Poling, Kenney, and Jilnicki-Lipman (1988) have investigated the effects of personality traits and gender on conceptualization of a deity. The 93 adjectives from Hammersla et al. and the Meyers-Briggs Type Indicator were administered to 354 students (139 male) in a general psychology class at a state university. The data from the adjective rating scale was then analyzed using a Promax factor analysis.

Findings were similar to the above studies of adjective rating scales of conceptualizations of God. Five significant factors were reported by the researchers. These factors included Benevolent, Wrathful, Omniness, Significant, and Remote dimensions. The authors reported that the loadings for the Benevolent factor suggest that this dimension of God concept involves a consistently positive evaluation, a

deity who is favorably disposed towards man. The Significant dimension suggested salience of God but without a large element of compassion for man. The Omniness component implies an unchanging and all powerful deity which is independent of God's relationship with man. The Significant and Omniness factors were significantly correlated with the Benevolent factor (r=.51, r=.48, respectively).

The Wrathful and Remote factors were somewhat correlated with each other (r=.25). Both of these dimensions imply negative evaluations of God. Wrathful implies an unfavorable judgement of man and Remote implies a belief in a non-personal, deistic God or even the denial of God.

Summary

Based upon prior research Gorsuch investigated conceptualizations of God utilizing a 91 item adjective rating scale. Using factor analysis he found 11 factors from 75 items. The interrelationship of these factors resulted in four major factors. Gorsuch felt that three of these factors (Omniness, Deisticness, & Wrathfulness) were tentatively established since they

corresponded to factors in Spilka et al.'s (1975) research. Additionally, he believed that the Traditional Christian factor was supported by both studies.

In addition to the original research, six other studies have been completed utilizing at least some of the items from Gorsuch's scale. Each study has investigated either the relationship of God concept to some other variable or the effect of some variable upon concept of God. The results of these studies indicate that this instrument has the capacity to differentiate God concept in a variety of samples, including both religious and non-religious.

Three of the studies verify the similarity of the four basic factors of conceptualizations found in Gorsuch's (1968) and Spilka et al.'s (1975) research. Hammersla et al. (1986) and Benson and Spilka (1973) observed the correlations among scales, while Poling et al. (1988) factor analyzed their results, with each finding similar factors. It should be noted that the item pool varied in several of these studies and yet similar results were found. Additionally, the samples upon which this research was done were rather

divergent, including both religious and general population samples. These results suggest an empirically derived four-factor structure for concept of God as measured by the COG. Table 3 summarizes the similarity of the results of these analyses of the COG.

This instrument has gained wider use than other instruments endeavoring to investigate concept of God and displays promise for further research.

Table 3

Hypothesized Parallels Among Studies of the COG

Gorsuch	Hammersla et al.(1986)	Benson & Spilka(1975)	Poling et al.(1988)
Traditional Christian	Favorable God	Kindly-God	Benevolent
Wrathful	Vindictive	Stern Father	Wrathful
Omniness	Distant	Impersonal Supreme Ruler	Omniness & Sig-nificant
Irrelevant	Irrelevant	Impersonal Distant	Remote

Evaluation

It is important now to consider the relative value of each of the six techniques for gathering data to support construct validity, as they relate to the COG. Once again, the six techniques include using developmental changes, correlations with other tests, factor analysis, internal consistency, convergent and divergent validity, and experimental intervention.

The use of developmental changes is of little value for the COG. Anastasi (1982) stated that this technique has limited use with personality and similar measures. Another less important technique for the COG at this time is experimental interventions.

Correlation with other tests, on the other hand, is of significant importance for this instrument. If it correlates too highly with other measures it may be seen as a parallel form of the previous instrument, and may or may not provide any advantages. Additionally, correlations with other tests are important to investigate further the notion of a general religious factor, which Gorsuch (1968) proposed was supported by the relatively high correlations found among a variety of religious measures (e.g., SWB, SMI, ROS).

Only two studies have provided information concerning correlations with other tests, another method of accumulating data for validation. Both Dean (1987) and Lewis (1986) correlated the COG and the SWB, finding some significant correlation coefficients.

Factor analysis is of particular importance in the gathering of data to support construct validity of the COG. This is true for instruments which measure a particular trait and/or have a proposed structure of scales or subscales. In evaluating the studies outlined in the previous section it is found that the factor analyses done in these studies appear to have been exploratory in nature.

Exploratory factor analysis is a multivariate statistical procedure for analyzing the interrelationships among variables. The goal is to discover if the original number of variables can be reduced to a relatively small number of factors, or latent (unobserved) constructs. No a priori or empirically derived hypotheses can be tested using exploratory factor analysis. Rather, this procedure is intended to be used to explore interrelationships among

variables and is not appropriate for testing a priori models (Kim & Mueller, 1978a).

In contrast, confirmatory factor analysis is a preferable strategy for investigating a priori hypotheses. It is designed to test the "fit" of a particular measurement model to an observed covariance or correlation matrix (Kim & Mueller, 1978a). This procedure provides a method for estimating the degree to which a hypothesized model describing the interrelationships of the variables corresponds to the observed pattern of correlations among the variables. In contrast to exploratory factor analysis, conclusions regarding the goodness of fit of a priori and empirically derived models can be drawn from the results of confirmatory factor analysis. Therefore, while the previous studies provide some foundational information, if a four-factor model of concept of God is to be statistically verified for Gorsuch's adjective rating scale, confirmatory factor analysis must be completed.

Internal consistency is important for the COG to determine how homogeneously it measures the sampled behavior. Only Gorsuch's original research provides

coefficients of internal consistency for several of the factors he found. It appears that no other studies have been completed producing reliability information.

Convergent and divergent validity are important for the COG, for as with personality measures irrelevant variables may affect the scores. Experimental interventions are presently not of particular value as there are no known interventions which may effect COG.

One final note is that the focus of the studies reported in this paper that involve items from Gorsuch's research has been to investigate the relationship of God concept to some other variable. The information concerning validation comes not by way of intention of these studies but as supplemental data. Other than Gorsuch's original study, no studies have sought to further develop this instrument.

In summary, while this instrument has gained wider use than other instruments and displays a capacity to differentiate God concept with a number of factors, it is psychometrically underdeveloped. Yet, this instrument continues to be used to research a variety of issues, including relation to gender and

denominational affiliation, the effect of relationship with father upon God concept, and the effect of personality traits upon concept of God.

The existing studies for Gorsuch's adjective rating scale of concept of God have accumulated little data for the validation of the instrument. There are four studies which suggest a four-factor structure of God concept for this instrument. While these results lend some information concerning the factorial construct validity of the COG, they are inadequate since two are correlational and the other two have been exploratory, not confirmatory factor analysis. Besides this information, only two studies which have correlated the COG with the SWB provide information for validation.

Additionally, there is also virtually no information concerning reliability. Only internal consistency coefficients from the original research on several factors has been reported.

Experimental Objectives

The review of the research has shown three important points concerning the research of God concept. First, researchers and clinicians alike see an individual's concept of God as an important construct. Second, while many instruments have been used in an effort to investigate concept of God, none has been adequately developed. Third, of the existing scales to investigate God concept, Gorsuch's Concept of God scale appears to be the most well developed measure.

On the basis of these important findings, this study proposed to take Gorsuch's adjective rating scale of Concept of God and provide further research in the areas of reliability and validity, since they are the cornerstones of test development. Five objectives were outlined for this study. The first two relate most directly to reliability, while the last three address validity.

The specific objectives were:

1. To compute a test-retest reliability coefficient for the COG.

2. To compute reliability coefficients for internal consistency, namely a coefficient alpha for each scale of the COG.

3. To compute correlation coefficients between the COG scales and other tests within the religious domain.

4. To complete a confirmatory factor analysis to determine whether the COG has factorial construct validity for a proposed four-factor model.

5. To complete a confirmatory factor analyis with a one-factor model (Null model) to be used for comparison with the four-factor model.

CHAPTER 2

METHODS

This study was designed to investigate the psychometric properties of the COG scale. The purpose was to further the process of validation and gain more information concerning reliability for this instrument so that it will be more useful to researchers. Four specific statistical procedures were carried out in this study: (a) test-retest reliability, (b) test of internal consistency (coefficient alpha), (c) correlations with other tests, and (d) confirmatory factor analysis.

Archival data was used for each of these analyses. The data was gathered as part of a doctoral dissertation which examined the effectiveness and reliability of the SWB scale (Brinkman, 1989). The COG was included in the data set but not examined as a part of that dissertation. This data set provided the advantage of a relatively large sample, the use of a number of other religious measures, and administration

on two separate occasions to the same sample. Two separate samples were pooled for several of the statistical procedures.

The content of this chapter focuses upon the methods used to collect and statistically analyze this data, which was needed for each of the validation and reliability procedures. This chapter is divided into three major sections: (a) Participants, (b) Instruments, and (c) Procedures. These sections are subdivided into Sample 1 and Sample 2 to adequately describe the methods used for the two samples used within this study. The Procedures section is further divided to describe each of the four statistical procedures completed in this investigation.

Participants

Sample 1

The participants for this sample included 73 volunteers from three churches. These subjects were an available sample taken from a study begun in the spring of 1988 involving a Conservative Baptist Church, an Evangelical Free Church of America, both located in the

Pacific Northwest, and an independent church in Washington, D.C. (Brinkman, 1989). The participants were largely middle-class and Caucasian individuals, who reported high levels of religious commitment.

Sample 2

The participants comprising this sample were volunteers from a Baptist church in Vancouver, WA and a community college in Gresham, OR. Testing took place on two separate occasions (test and retest). A total of 197 individuals participated in the research, with 120 of these participants taking part in both testing sessions.

The participants were mostly Caucasian, middle class, and reporting to be Christian.

Instruments

Five different religious measures were administered to Sample 1. These included two versions of the SWB scale, an original and an experimental version, the Religious Orientation Scale (ROS), the Spiritual Maturity Index (SMI), and the COG scale. The

experimental version of the SWB will not be discussed since it was not used in the statistical analysis for the present study.

Sample 2 received a survey packet made up of three measures and a demographic questionnaire. The instruments included the SWB (half the original version and half the experimental), the COG, and the Spiritual Distress Scale (SDS).

Sample 1 Instruments

Four instruments were administered to the participants in Sample 1. These instruments were the Spiritual Well-Being Scale, the Religious Orientations Scale, the Spiritual Maturity Index, and the Concept of God Scale. This section will describe each of these measures in turn.

Spiritual Well-Being Scale

The SWB scale is composed of 20 self-report items which the participant rates along a Likert scale. The SWB scale is made up of two subscales of ten items each. The Religious Well-Being (RWB) subscale includes ten items which purport to measure the vertical dimension of relationship to God. The Existential

Well-Being (EWB) subscale is also composed of ten items and endeavors to measure the horizontal dimension of meaning, purpose, and satisfaction in life.

The instrument yields a fullscale score and scores for each subscale. The items are scored on a six-point scale, with high scores representing greater well being.

Ellison (1983) reported the test-retest reliability coefficients for the SWB, RWB, and EWB to be .93, .96, and .86 respectively. Split-half reliabilities were found to be .89, .87, and .78 in that same study. Brinkman (1989) reported test-retest reliabilities (six week interval) of .73, .88, and .82 for the EWB, RWB, and SWB respectively. Each of these was significant at the $p < .001$ level.

Bufford (1984) reported that preliminary validation studies of the SWB scale have found it to be positively related to self-esteem, "Purpose in Life", and to self reports of experiencing positive peer relationships and positive parent-child relationships. It has also been found to be positively correlated to assertiveness as measured by the Interpersonal Behavior Survey and self confidence as measured by the Tennessee

Self Concept scale (Rodriguez, 1987). In addition, the SWB has been positively correlated with other religious measures such as the SMI and the Intrinsic subscale of the ROS (Brinkman, 1989).

While there has been some preliminary data to support the validity of the SWB scale several recent studies have pointed out the ceiling effects this measure suffers from (Brinkman, 1989; Ledbetter, Smith, Fischer, Vosler-Hunter, & Chew, 1989). Such ceiling effects limit the scale's ability to differentiate among scores at the high end of the continuum, which reflects high religiousity. These effects also serve to suppress intra and intertest correlations.

Religious Orientation Scale

The Religious Orientation Scale (ROS) is a 21 item self-report instrument originally designed to measure a continuum from Intrinsic (I) to Extrinsic (E) Religious Orientation. A single total score may be obtained for the scale. However, scores for I and E subscales are typically scored separately since for many individuals these constructs appear to be independent (Robinson & Shaver, 1973). The Extrinsic scale is believed to measure the degree to which a person's external social

environment has influenced his or her personal religion. The Intrinsic scale was designed to measure the degree to which internal needs for creativity, strength, and direction shape an individual's religion.

Four types of religious orientation have been distinguished with this test, including intrinsic, extrinsic, indiscriminately pro-religious, and indiscriminately anti-religious (Allport & Ross, 1967). Those persons who are scored as intrinsically motivated are more likely to live their religion than to use it. An extrinsically motivated person tends to see his or her religion as a means of accomplishing some other goal. Indiscriminately pro-religious individuals score high on both E and I, while low scores on both scales indicate an indiscriminately anti-religious orientation.

Feagin (1964) reported item to scale correlations ranging from .22 to .54 when the whole scale was given one score. Item to intrinsic scale correlations ranged from .54 to .71 and item to extrinsic scale correlations from .48 to .68. Allport and Ross (1967) reported item to subscale correlations ranging from .18 to .58. Robinson and Shaver (1973) in their review of

the ROS scale concluded that the Intrinsic-Extrinsic scale appears to have consistently demonstrated construct validity.

Spiritual Maturity Index

The SMI is composed of 30 self-report items to which individuals respond on a six-point Likert scale, much like the SWB. It was developed by Ellison (Cooper, 1987) in an effort to measure spiritual maturity. It was constructed using a rational process to determine criteria for spiritual maturity and then questions were developed on this basis.

Bressem (1986) reported a split-half reliability coefficient of r=.78, and an internal consistency coefficient alpha of r=.82 for the scale.

A number of studies have been completed investigating validity of the SMI. The SMI has been positively correlated with self-esteem, perceiving the church as a caring community, and feeling there is a God-given purpose in life (Ellison, Rashid, Patla, Calica, & Haberman, 1984). It has also correlated in the expected direction with the ROS Intrinsic and Extrinsic scales (Bufford, 1984).

Bressem (1986) also factor analyzed the SMI items and found 10 factors with eigenvalues greater that +1. Two other factor analytic studies have concluded that the SMI and the SWB appear to be measuring a similar general factor (Bufford, 1984; Cooper, 1987). The SMI has been reported to share 68% of common variance with the RWB subscale of the SWB (Bufford, 1984). In light of these results, there is some question whether the SMI is measuring distinct aspects of religiosity from the SWB.

Concept of God

The version of the concept of God scale used for this study incorporates the original 75 items from Gorsuch's (1968) research which found 11 factors. The items, which are adjectives, are scored on a six-point Likert scale. The factors found by Gorsuch were measured as subscales. For further information concerning this scale please refer to the review in Chapter One. A copy of the COG scale is in Appendix A.

Sample 2 Instruments

This sample was administered the SWB, the COG, the Spiritual Distress Scale, and a demographic

questionnaire. The SWB and COG scales were described in the discussion above. This section describes only the Spiritual Distress Scale and the demographic questionnaire.

Spiritual Distress Scale

The Spiritual Distress Scale (SDS) is a 22 item self-report survey designed to measure distress of the human spirit. The original researcher, Ruby Flesner, developed this instrument as a part of her Master's thesis at Marquette University (Flesner, 1981).

Flesner (1981) reported that within the nursing profession there was widespread agreement that a relationship existed between unmet needs of the human spirit and the total well-being of an individual. She stated that many nurses believed it was important to meet both the physical and spiritual needs of patients. However, there was little research completed within this area. In an effort to fill this gap, Flesner developed the SDS.

Spiritual distress has been defined by Flesner as "the painful and/or damaging effects of the stress that occurs to the mind and body of man when he is unable to adapt to an unmet need of the spirit" (p. 11).

According to Flesner (1981), to experience a dynamic relationship with God is the most basic need of the human spirit. Through this relationship an individual may experience forgivness, love, hope, trust, and meaning and purpose in life.

Flesner used these five dimensions to develop an item pool designed to indicate spiritual distress in relation to each dimension. Four statements from each of the five areas were eventually chosen. In addition, two other statements were included which judges felt helped in measuring or preventing distress. The total of 22 items comprise the scale. Half of the items are worded negatively, and half positively. The items are scored on a six-point Likert type scale.

Flesner (1981) reported that reliability was examined through a test-retest study, utilizing a sample of 88 first year nursing students (83 female, 5 male). The SDS, along with the SWB, was given to this group on two occasions one week apart. A total of 83 individuals participated in the second administration. A mean of 49.2 with a standard deviation of 9.8 was reported fo the first administration, and a mean of 49.2 with a standard deviation of 12.6 for the second.

Only mean scores were compared. The difference between the means of the SDS was reported to be within about 1.7%. Unfortunately, this finding sheds little light on the reliability of the SDS.

Construct validity was examined through correlation with the SWB. Correlations for the first administration were -.45, and -.90 for the second. Both were significant at the $p < .001$ level. The SDS was not significantly correlated with age or gender. A modest correlation ($r = .22$) was found between SDS and reported religious participation. After reviewing these results, Flesner reworded some of the items and shifted the order of presentation.

Demographic Questionnaire

A demographic questionnaire developed by the original researcher was included for each administration. For the first session a one-page questionnaire asked data on age, gender, marital status, education, income, ethnic origin, religious affiliation, and estimates of spiritual maturity and well-being. The questionnaire included for the second administration inquired about religious beliefs and practices.

Procedures

Sample 1

Individuals from three churches were asked to participate in a longitudinal study of spiritual growth. They were informed the study would involve completing some surveys at that time and again a year later. They were also informed that following the second information gathering they would receive feedback on both sets of data so they could compare their individual spiritual growth as measured by these scales. Initial data was collected from January to May of 1988.

Seventy-three individuals volunteered to participate in the study and completed the survey package. Of these 31 were from a Conservative Baptist Church in Vancouver, WA; 30 were from an Evangelical Free Church in Seattle, WA; and 12 were from two Bible study groups in Washington, D.C. These organizations were selected to secure participants because of contacts known to the original examiner.

Participants from the church in Vancouver were given the questionnaires at church and asked to fill them out and return them to the church. The other participants were mailed the materials with a cover letter and a stamped, self-addressed return envelope.

The church in Vancouver became involved in the study as part of a program for members to read through the Bible in one year. The senior pastor was contacted about trying to measure the anticipated change in individuals who would complete the reading. Using bulletin announcements and announcements from the pulpit, volunteers were asked to participate and then were given the packet during a morning service. A box was provided at the church to return completed surveys. Participants placed their names on the cover letter which was later numbered and separated from the surveys to protect confidentiality.

The church in Seattle and the Bible study groups in Washington, D.C. were contacted at the same time. After the church agreed to participate individual volunteers were solicited. A numbered survey was mailed to each participant to complete and return. Participants were instructed not to place their names

on the surveys. For those who did not mail their surveys back right away, a follow-up postcard was sent.

The order of the instruments was mixed in each packet. No systematic procedure was used to assure a truly random mix of the instruments. In addition to the five measures, some single item questions evaluating aspects of religious life were included. Items inquired about importance of religion, current religious knowledge, life satisfaction, spiritual maturity, and number of hours per week spent in ministry.

Sample 2

The data collection took place on two separate occasions, approximately six weeks apart. A number of sources were contacted to participate in the study. Two psychology professors at one community college agreed to make announcements in their introductory psychology classes and to give extra course credit for those students who participated in both sessions of the testing.

The first data gathering session took place on October 19, 20, 26, and 27, 1988. A room on the campus

was made available during the lunch hour for those students who were interested in participating in the study. A sign was posted outside informing students that research was being conducted and to enter quietly.

Two weeks prior to the second session the professors were contacted as a reminder. Another announcement was given to the professors to give to the class. The second session took place on November 30, December 1, and 7, 1988, utilizing the same room for students to enter and complete the surveys.

Following completion of the surveys, students were also given a handout explaining the study and given the opportunity to receive feedback from their test results.

In addition to the students from the community college, the pastoral staff of a Baptist church in Vancouver, WA agreed to participate in the study through their Sunday school program. Each of the Sunday school class leaders was contacted by a pastor and the examiner to assure their participation and understanding, as well as to answer any questions. All Sunday school classes from high school age and older

participated with the exception of the Senior Citizens class.

Class members were informed of the study during regular Sunday school class time. Surveys were also completed during class time. The first session was on October 23, 1988 and the second was on December 4, 1988. For those who missed the second session, addresses were obtained from the church directory and they were mailed a copy of the packet with a cover letter and stamped, self-addressed return envelope. Individuals who missed the first session but present at the second were given a packet at the second session to obtain a larger sample for this administration.

At each administration site participants were given a manila envelope that contained a four page survey packet and an index card. Each packet contained, in order, the SWB scale, the COG scale, the SDS, and a demographic sheet. Verbal instructions were given asking participants to open the envelope and place their name on the index card in order that surveys could be matched for the second administration. They were instructed not to place their names on the surveys. Participants were then asked to complete the

surveys and when done to put them back into the envelope and turn it in along with the index card. All were informed this study involved a second session a few weeks later but were not told it involved completing the same tests. If someone did not understand an item they were told to leave it blank.

Between the testing sessions, the surveys were numbered with a number placed on the index card and the face sheet. The data was entered into a data base and scored. Scores were placed on the tests.

At the second session the participants were given a manila envelope with the index card they had completed stapled to the outside. The second set of instruments was inserted in the packet in the same order as during the first administration along with the second demographic page. Again participants were asked not to put their name on the instruments and to remove the index cards from the envelope.

For the church sample, a sealed envelope with the scored scales from the first administration along with a sheet explaining the purpose of the study was in the envelope. After participants had completed the surveys they were given the opportunity to compare their

results with the first administration and to ask questions. Group data was also available for their information. Participants were instructed to keep the index card with their name and number if they wished to discuss the results later since no master was available at that time with this information.

The community college sample was given the same sheet explaining the purpose of the study after participants had finished the second session. They were also given an opportunity to sign up for an individual appointment or to give their name and phone number to discuss the results of the study. Names of those completing both sessions were submitted to the professors for extra course credit.

Results of the study were also made available to the professors and pastors for their use.

Statisical Procedures

Test-Retest Reliability

The data from the 120 subjects of Sample 2 who participated in both of the test administrations were utilized to examine the test-retest reliability of the COG. To compute the test-retest reliability, the test

scores from the two administrations of the COG were correlated using the Statistical Package for the Social Science (SPSS/PC+) software package (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

Measures of Internal Consistency

A measure of internal consistency was derived using the 197 cases from the first administration of Sample 2. Utilizing the SPSS/PC+ software package (Nie et al. 1975), a coefficient alpha was computed for each of the COG scales.

Correlation with other Tests

In order to carry out this portion of the analysis both Sample 1 and 2 were utilized. The data from sample 1 were used to compute correlations between the COG, SWB, SMI, and ROS. The data from Sample 2 were used to compute correlations between the COG, SWB, and SDS. However, in Sample 2, since there were two versions of the SWB only the 98 cases using the original SWB (half the participants) were correlated with the COG.

Each of the eleven factors or scales of the COG was correlated with the full scale scores of each of the measures, as well as with any subscales. In

addition, the COG scales were correlated with each other. The data was analyzed using the SPSS/PC+ software system (Nie et al., 1975), on a MS-DOS microcomputer.

Confirmatory Factor Analysis

Factor analysis is a multivariate statistical procedure. Because it was the focus of this investigation and may be less familiar to some readers it is briefly discussed. In addition, the confirmatory factor analysis used in this study is described.

Factor analysis, as described by Kim and Mueller (1978a), is a variety of statistical procedures whose common objective is to represent a set of variables (e.g., questions or scales) in terms of a smaller number of hypothetical variables. The task of factor analysis is to distinguish underlying common factors from a larger set of variables. These factors are assumed to be present as a result of the covariance (tendency to vary together) of the observable variables. The underlying variables or factors produced by this process are hypothetical and unmeasured (Kim & Mueller, 1978a). The factors are unobserved, having been derived by a statistical

procedure. A linear combination of the observed variables is assumed to give rise to the hypothetical factors that are derived.

Factor analysis is accomplished by investigating the relationship of a number of observed variables. These variables are plotted (usually by a computer) on a matrix. However, most results produce data that are difficult to interpret (Kerlinger, 1986). To provide results which are meaningful, the matricies are rotated to find the simplest and most easily interpretable factor structure (Kim & Mueller, 1978a). There are two basic types of rotation, orthogonal and oblique. Orthogonal rotation searches for a simple factor structure in which the factors are uncorrelated. Oblique rotation, on the other hand, does not impose the restriction that factors be unrelated, and generally results in finding a factor structure in which factors are related.

There are two basic types of factor analysis: exploratory and confirmatory. Exploratory factor analysis is a means of investigating the underlying factor structure of a set of variables without any prior specification of the number of factors or their

loadings. This type of factor analysis is generally what is referred to when factor analysis is discussed.

Confirmatory factor analysis is a factor analytic procedure in which specific expectations concerning the number of factors and their loadings are tested on sample data (Kim & Mueller, 1978b). The most significant difference between exploratory and confirmatory factor analysis is that in the latter a hypothesized model of the factor structure and their loadings is specified prior to the analysis. If a given factorial model is supported by the data, then generally there is greater confidence in the appropriateness of the hypothesized model. In addition, statistical analysis can determine the goodness of fit of the hypothesized model.

Hypothesized models for confirmatory factor analytic investigations may be derived from a theoretical or empirical basis. The hypothesized model, in contrast to a hunch or guess, must be based upon an understanding of the nature of the variables and the expectations concerning which variables are likely to load on which factors (Kim & Mueller, 1978a).

As is the case with this study, the model may come from information provided by exploratory factor analyses.

Four steps have been outlined by Long (1983) to carry out confirmatory factor analysis. These steps include specification, identification, estimation, and assessment of the hypothesized model. Long's approach focuses heavily upon the mathematical nature of the hypothesized model. His discussion is complex and beyond the scope of this study. However, his steps are helpful in outlining the process of confirmatory factor analysis and will now be considered in light of this study.

Specification and identification involve defining the components, assumptions, and parameters of the hypothesized model. It includes formally outlining the number of factors, the number of observed variables, and the relationship among variables and factors.

Two models were hypothesized for this study. The first was the null hypothesis. This hypothesis predicted that all the variables were highly related and load onto one factor.

The second model was based on the results of exploratory factor analyses discussed in Chapter 1. In

this discussion four separate studies of God concept, with diverse samples and varied item pools, have consistently found similar results concerning the factor structure of the COG.

Formally stated, 8 primary underlying factors were hypothesized to be found from the 75 variables (items) of the COG. Furthermore, the interrelationship among these factors was hypothesized to display four basic factors. Of these factors, three were to have relatively strong covariance and one was not.

The next step in the confirmatory factor analysis was estimation. The objective of this step was to find estimates of the parameters that reproduce the sample matrix of the variances and covariances of the observed variables (COG items). A Least Squares (LS) method of determining fit was used.

The final step in confirmatory factor analysis was assessment of fit of the hypothesized model. Several techniques were utilized to carry out this procedure: Chi-square goodness of fit, Adjusted Goodness of Fit Index, and the Tucker-Lewis Index.

The chi-square goodness of fit test assesses goodness of fit by measuring the degree of discrepancy

between observed intercorrelations and the interrelationships proposed by the theoretical model of factor structure. Good model fit can be indicated by a low degree of discrepancy, reflected in small values of the chi-square statistic.

The Adjusted Goodness of Fit Index (AGFI) incorporates consideration of the number of parameters estimated by the model and the Root Mean Square Residual (RMSR), which is a measure of the average size of estimation errors in the fitted model (Jorskog & Sorbom, 1987; Wolfe, 1981).

The Tucker-Lewis Index (TLI), which is less dependent upon sample size, was also computed for goodness of fit (Marsh & O'Neill, 1984). Values of the TLI near .9 indicate good model fit, while values substantially less than .9 suggest that model improvement is needed.

The data from Samples 1 and 2 were pooled to carry out the confirmatory factor analysis. The total sample numbered 270 participants. Sample size is an important issue for confirmatory factor analysis. Cureton and D'Agostino (1983) stated that a sample of several hundred is preferrable for factor analytic studies.

More specifically, Gorsuch (1983) provided a rule of thumb that for every variable there be five cases. To meet this rule 375 cases would be needed for this study since there are 75 items in the COG. While the sample size falls short of this, the investigation of the COG construct validity was of sufficient importance to proceed, though it is necessary to consider the results from the confirmatory factor analysis as tentative.

The confirmatory factor analysis utilized the SIMPLIS program of Jorskog and Sorbom (1987). This statistical analysis was used to obtain empirical estimates of the congruence of the empirically derived hypothesized model with the observed data. SIMPLIS uses a two-stage least-squares algorithm, and was executed on an MS-DOS microcomputer. This procedure provides a method for estimating the degree to which a hypothesized model describing the interrelationships of the items corresponds to the observed pattern of relationships among the variables.

Summary

This chapter outlined the data collection and statistical analysis of this study. The archival data used for this study was gained from two separate samples. The first sample consisted of 73 volunteers from three churches, who were administered the SWB, ROS, SMI, and COG. The second sample was given a test packet including a demographic questionnaire, SWB, SDS and COG at two testing sessions. A total sample of 197 participated in one administration, with 120 of the same individuals participating in the second.

Table 4 presents the manner in which each sample was utilized to carry out the statistical procedures. Correlations between measures were done for both samples. In addition, correlations between subscales were computed. The data from the 120 individuals who participated in both administrations were used to compute test-retest reliability. Sample 1 and 2 were pooled to provide a data set to compute coefficient alphas for each of the COG scales and to complete a confirmatory factor analysis of the COG, in which hypothesized one-and four-factor models were used.

Table 4

Organization of Statistical Procedures to Samples

Test-Retest Reliability	Sample 2 (120 cases)
Internal Consistency	Sample 1 and Sample 2 analysed separately
Correlations with other Tests	Sample 1 and Sample 2 analysed separately
Confirmatory Factor Analysis	Sample 1 and Sample 2 pooled

CHAPTER 3

RESULTS

This chapter presents the findings for each of the four statistical procedures utilized in the study. Demographic information and descriptive statistics are provided, followed by a section for each of the four statistical procedures proposed, as well as an additional one: (a) test-retest reliability; (b) measures of internal consistency; (c) correlations with other tests; (d) confirmatory factor analysis; (e) exploratory factor analysis.

Demographic Information

Sample 1

This sample was made up of 72 persons from three churches who agreed to take part in a longitudinal study (Brinkman, 1989). There were 42 females and 30 males who participated. The majority of the participants were Caucasian, married, and of middle

class socio-economic background. More specific demographic data was not gathered by the researcher at the time of the first administration and the second administration is yet to be completed. Therefore, more specific information concerning the participants is unavailable.

Sample 2

The second sample was gained from two testing sessions and is made up of two groups; one from a community college population and the other from a Baptist church. A demographic questionnaire was administered at the second testing session.

The participants from the community college consisted of volunteers from two introductory psychology classes. Students were invited by their professors to participate and given extra credit for completing both testing sessions. At the first session 66 students participated, with 42 of these returning approximately six weeks later to complete the second session. Twenty-seven students came from one of the introductory psychology classes, 35 from another, and four students came from other classes. Only two of

these latter student's professors agreed to give extra credit. The other two professors did not and those two students did not complete the second session.

The participants from the Baptist church came from five Sunday school classes; high school (n = 35), college (n = 8), ladies (n = 9), young adults (n = 33), and middle age (n = 46). The original researcher reported that no one refused to participate in the study. The total number of participants to complete both testing sessions was 79. The numbers of particular class members to complete both sessions are as follows: high school (n = 26), college (n = 3), ladies (n = 6), young adults (n =19), middle age (n = 25).

A total of 131 people from the church completed the packet at least once. Twenty-four did so only at the first session, and 28 at the second session only. For the 24 participants who failed to complete the packet at the second session, their names were looked up in the church directory. Fourteen names and addresses were found, with packets mailed to them. Four of these were returned.

One of the questionnaire pages, which included questions concerning religious beliefs and practices, was given out only at the second session and therefore a large number of participants did not have opportunity to respond to those items. This is reflected by the missing data category.

Of the 197 participants, 116 were women (59%) and 79 were men (40%). Most were in their 20's to 30's (44%), but a large portion were under 20 (35%). One-hundred-eighty-five (94%) reported to be caucasian, with one Native American, one oriental, and three black participants. The sample was made up of 78 (40%) single individuals and 88 (45%) persons in their first marriage. Family income was diverse, with 43% ranging from 20,000 to 40,000. Eighty participants (41%) had taken at least some college, while only 23 (12%) had less than a high school education.

Denominationally, 114 (58%) reported to be Protestant, 5 Catholic, 1 Jewish, 53 (27%) Other, and 18 (9%) reported no religious identification. Of the 137 participants who responded as to whether or not they believed in God, 110 (80%) reported they had no doubts concerning the existence of God. A similar

number of 118 (86%) reported a belief in Jesus Christ as the Divine Son of God and 105 (77%) reported to follow the ethical and moral teachings of Jesus Christ. Ten persons did not consider themselves to be a Christian. One-hundred-ten participants (80%) reported the Bible to be the ultimate source of truth.

Overall, this sample can be characterized as young, white middle class Protestant persons, with strong religious beliefs. The next several pages present Table 5, which summarizes the demographic data from the 197 participants.

Table 5

Demographic Data from Sample Two

Category	Frequency	Percentage
Age		
Under 20	68	35%
20-29	29	15%
30-39	58	29%
40-49	21	11%
Over 50	8	4%
Missing	5	3%
Gender		
Female	116	59%
Male	79	40%
Missing	2	1%

(table continues)

Table 5--Continued

Category	Frequency	Percentage
Marital Status		
Single	78	40%
1st Marriage	88	45%
Sep/Divorced	9	5%
Remarried	13	7%
Live Together	5	3%
Family Income		
< $10,000	20	10%
$10-20,000	29	15%
$20-30,000	34	17%
$30-40,000	51	26%
$40-50,000	21	11%
Over $50,000	20	10%
Missing	22	11%

(table continues)

Table 5--Continued

Category	Frequency	Percentage
Education		
< High School	23	12%
High School	37	19%
Trade/Bus	10	5%
Some College	80	41%
College Grad	17	9%
Some Graduate	6	3%
Grad Degree	13	7%
Missing	11	6%
Ethnic Heritage		
Black	3	2%
Native Amer	1	1%
Oriental	1	1%
Caucasian	185	94%
Other/Missing	7	4%

(table continues)

Table 5--Continued

Category	Frequency	Percentage
Religious Identification		
Catholic	5	3%
Jewish	1	1%
Protestant	114	58%
Other	53	27%
None	18	9%
Missing	6	3%
Belief in God		
Don't Believe	3	2%
Higher Power	1	1%
Sometimes	3	2%
More/less	16	8%
No Doubts	110	56%
Missing	64	32%

(table continues)

Table 5--Continued

Category	Frequency	Percentage
Belief in Jesus		
Don't Believe	3	2%
Only a man	1	1%
Basically	11	6%
Divine Son	118	60%
Missing	64	32%
Christian Profession		
Not Christian	10	5%
Moral/Ethical	7	4%
Christ Savior	14	7%
Follow Christ	105	53%
Missing	61	31%

(table continues)

Table 5--Continued

Category	Frequency	Percentage
Years a Christian		
1-4	11	6%
5-9	23	12%
10-19	37	19%
20-30	35	18%
Over 30	12	6%
Not Christian	10	5%
Missing	69	35%
Belief in Bible		
Not Needed	5	3%
Ultimate	101	51%
Experience	6	3%
Church	3	2%
Other sayings	3	2%
Don't know	9	5%
Missing	70	36%

(table continues)

Table 5--Continued

Category	Frequency	Percentage
Religious Participation		
< 1/year	7	3%
1-2/year	8	4%
3-11/year	7	4%
1-3/month	5	3%
Weekly	24	12%
> weekly	87	44%
Missing	59	30%

Note. Some demographic questions (From "Belief in God" to "Religious Participation") were included only in the second session of testing so that a large number of participants did not have opportunity to complete them.

Descriptive Statistics

Descriptive statistics for the COG scales were computed by pooling Samples 1 and 2. For each of the scales, the higher the score the more the adjective describes a concept of God.

The means for the Traditional (279.05), Companionable (35.61), Kindliness (67.09), Omniness (21.51), Eternality (23.10), and Evaluation (27.87) scales are quite high. The scores on these scales tend to pile up on the high end of the scale. The means for the Wrathful (45.26) and Deisticness (13.04) scales are moderate.

On five of these scales, Traditional, Kindliness, Omniness, Eternality, and Evaluation, there is less than one standard deviation between the mean and the ceiling of the scale. This is true for the Irrelevancy scale as well. The Companionable and Wrathful scales show only one standard deviation between the mean and the ceiling of the scale. The Passive scale has two standard deviations, while the Benevolent scale has three. The Deisticness scale has two standard deviations from the low end.

Skewness is a statistic used to determine the degree to which a distribution of cases approximates a normal curve. When a distribution is a completely symmetrical bell-shaped curve, skewness will have a value of zero. However, when a nonsymmetrical distribution exists it can be refered to as skewed (Hays, 1981). A positive value for skewness represents a clustering of the cases on the left of the mean or the low end of the scale, with a negative value indicating clustering at the right or high end of the scale (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

The results from the skewness index showed the Traditional (-3.00), Kindliness (-3.11), Omniness (-1.60), Evaluation (-2.72), and Eternality (-4.56) scales to be negatively skewed. Thus scores on these subscales cluster near the ceiling or high end of the scales. The Irrelevancy (2.85) scale is positively skewed, with scores that cluster at the floor or low end of the scale. Only the Wrathful and Passive scales approximate a normal distribution. The means, standard deviations, minimum and maximum scores, and skewness are reported in Table 6.

Table 6

Descriptive Statistics for the COG Scales

Variable	Mean	SD	Min	Max	Skewness
TRA	279.05	35.10	51	306	-3.008
BEN	53.07	5.28	12	72	-2.647
COM	35.61	5.15	7	42	-1.780
KIN	67.09	8.89	12	72	-3.115
OMN	21.51	4.02	4	24	-1.605
EVL	27.87	3.79	5	30	-2.723
ETR	23.10	2.78	4	24	-4.565
WRA	45.26	13.49	13	78	-0.027
DEI	13.04	4.30	5	30	1.168
IRR	5.38	2.97	4	24	2.854
PAS	12.49	2.90	3	18	-0.250

Note: TRA = Traditional. BEN = Benevolent. COM = Companionable. KIN = Kindliness. OMN = Omniness. EVL = Evaluation. ETR = Eternality. WRA = Wrathful. DEI = Deisticness. IRR = Irrelevancy. PAS = Potently Passive. N = 269

In order to facilitate comparison of the scales and to show the skewing of the scales, standardized scores were computed. This was done by dividing the original values by the number of items, producing standard units. The range of standardized scores is from a minimum of one to a maximum of six. The weighted means and standard deviations are reported in Table 7.

Table 7

Standardized Means and Standard Deviations for the COG

Variable	N	Weighted Mean	Weighted SD	Min	Max
TRA	269	5.47	0.69	1	6
BEN	269	4.42	0.44	1	6
COM	269	5.08	0.74	1	6
KIN	269	5.59	0.74	1	6
OMN	269	5.37	1.00	1	6
EVL	269	5.57	0.76	1	6
ETR	269	5.77	0.70	1	6
WRA	269	3.48	1.04	1	6
DEI	269	2.60	0.86	1	6
IRR	269	1.34	0.74	1	6
PAS	269	4.16	0.96	1	6

Note: TRA = Traditional. BEN = Benevolent. COM = Companionable. KIN = Kindliness. OMN = Omniness. EVL = Evaluation. ETR = Eternality. WRA = Wrathful. DEI = Deisticness. IRR = Irrelevancy. PAS = Potently Passive.

These results show more dramatically that the scores on the Traditional (5.47), Companionable (5.08), Kindliness (5.59), Omniness (5.37), Evaluation (5.57), and Eternality (5.77) scales are very high. The score on Irrelevancy (1.34) is low, with moderate scores indicated on the Deisticness (2.60) and Wrathful (3.48) scales.

Overall, the sample can be characterized as conceptualizing God as Traditional, Companionable, Kind, Omniscient, Eternal, and Evaluating. God was seen as relevant (not Irrelevant), and only moderately Deistic and Wrathful.

The statistics for the SMI and ROS were gathered using Sample 1, while Sample 2 was used for the SWB and SDS. The mean score for the SWB scale was 99.8, while the EWB and RWB had mean scores of 49.0 and 50.8, respectively. Scores such as these were lower than those found in many highly religious samples (Bufford, Paloutzian, & Ellison, 1989), and indicate a moderate degree of the three constructs. The SDS had a mean of 53.5 and the SMI had a mean of 142.5. The ROS-E had a mean of 20.7 and the ROS-I had a mean of 13.4. High scores on the ROS-E indicate extrinsic religious

orientation, while low scores on the ROS-I show intrinsic orientation. The descriptive statistics for the SWB, SDS, SMI, and ROS are reported in Table 8.

Table 8

Descriptive Statistics for the Religious Measures

Scale	N	Mean	SD	Min	Max
SWB	107	99.8	15.1	20	120
EWB	107	49.0	7.4	10	60
RWB	107	50.8	10.1	10	60
SDS	191	53.5	15.3	22	132
SMI	71	142.5	16.4	30	180
ROS-E	72	20.7	5.1	12	60
ROS-I	72	13.4	3.3	9	45

Note: SWB = Spiritual Well-Being. EWB = Existential Well-Being. RWB = Religious Well-Being. SDS = Spiritual Distress Scale. SMI = Spiritual Maturity Index. ROS-E = Religious Orientation Scale-Extrinsic. ROS-I = Religious Orientation Scale-Intrinsic.

Test-Retest Reliability

Test-retest reliability coefficients were computed using Sample 2. One-hundred-twenty volunteers from a Baptist church in Vancouver, WA, and a community college in Gresham, OR took part in two testing sessions approximately six weeks apart. The COG, SWB, SDS, and a demographic questionnaire were administered.

Demographic information for this sample was presented earlier in this chapter. Table 9 presents the correlation coefficients for test-retest reliability for each of the COG scales. As can be seen, all the reliability coefficients were .74 or above, except for the Passive scale (r = .60).

Table 9

Test-Retest Reliability Coefficients for the COG

COG Subscale	N	Coefficient	# of Items
Traditional	105	.74***	51
Benevolent	105	.76***	12
Companionable	108	.76***	7
Kindliness	110	.80***	12
Wrathful	104	.83***	13
Deisticness	104	.76***	5
Omniness	94	.77***	4
Evaluation	106	.76***	5
Irrelevancy	107	.76***	4
Eternality	110	.75***	4
Passive	105	.60***	3

*** $p<.001$

Measures of Internal Consistency

Internal consistency alphas provide a measure of the homogeneity of a trait or construct, and are based upon the average correlation of items within a total score on a test. Internal consistency coefficient alphas were computed on both Sample 1 (N = 72) and Sample 2 (N = 197). The results of these analyses are reported in Table 10.

The coefficient alphas for the Traditional (.95 & .98) and Kindliness (.93 & .94) scales were very high. The values for the Companionable (.81 & .87), Wrathful (.84 & .83), Eternality (.89 & .91), Deisticness (.65 & .80), Omniness (.85 & .87), Irrelevancy (.82 & .76) and Evaluation (.71 & .80) scales were also relatively high. The Benevolent (.27 & .51) and Passive (-.15 & .31) scales had low coefficient alphas.

Table 10

Internal Consistency Alphas for the COG

Scale	# of Items	Sample 1[a] Alpha	Sample 2[b] Alpha
Traditional	51	.95	.98
Benevolent	12	.27	.51
Companionable	7	.81	.87
Kindliness	12	.93	.94
Wrathful	13	.84	.83
Deisticness	5	.65	.80
Omniness	4	.85	.87
Evaluation	5	.71	.80
Irrelevancy	4	.82	.76
Eternality	4	.89	.91
Passive	3	-.15	.31

[a]N = 72. [b]N = 269.

Correlations with other Tests

The COG was correlated with the Spiritual Well-Being Scale (SWB), the Spiritual Distress Scale (SDS), the Spiritual Maturity Index (SMI), and the Religious Orientations Scale (ROS). The COG was correlated with each of the SWB subscales, Existential Well-Being (EWB) and Religious Well-Being (RWB), and with the two subscales of the ROS, Extrinsic orientation (ROS-E) and Intrinsic orientation (ROS-I).

The correlations of the COG with the SMI and the ROS were computed using Sample 1 (N = 72). Because of missing data, only 68 cases were used in this statistical analysis.

The correlations of the COG with the SWB and the SDS were computed using Sample 2 (N = 197). A pair-wise deletion method was used to compensate for the fact that only half of this sample was administered the original version of the SWB. The number of cases available for correlations to be computed between the SWB and the COG scales ranged from 90 to 97. Table 9 presents the correlation coefficients.

The SWB correlated significantly (r = .40 to .63; p < .001) with all the COG scales but the Wrathful (r = -.04) and Passive (r = -.15) scales. Similarly, the RWB correlated (r = .44 to .80; p < .001) with all scales but Wrathful (r = .11) and Passive (r = -.01). The EWB correlated significantly with the Benevolent, Deisticness, Omniness, and Passive scales, with correlation coefficients ranging from r = .30 to r = .39.

The SDS correlated significantly (p < .01) with each of the COG scales. The correlation coefficients range from r = .20 to r = .51. The Wrathful, Deisticness, and Passive scales correlated positively, while the other scales did so negatively.

The SMI correlated significantly (p < .001) with the Traditional (r = .49), Benevolent (r = .56), Companionable (r = .52), and Deisticness (r = -.50) scales. The SMI did not correlate significantly with the Wrathful, Irrelevancy, Eternality, and Passive scales.

The ROS-E correlated with the COG scales in a manner similar to the SMI, except that the correlation coefficients are reversed. The Traditional

($\underline{r}$ = -.42), Benevolent ($\underline{r}$ = -.58), Companionable ($\underline{r}$ = -.52), Kindliness ($\underline{r}$ = -.55), and Deisticness ($\underline{r}$ = .50) scales all correlated with the ROS-E, while the Omniness, Irrelevancy, Eternality, and Passive scales did not.

Since low scores on the ROS-I indicate an intrinsic religious orientation, the correlation coefficients were reversed to show the appropriate relationships. The Benevolent ($\underline{r}$ = .37) and Deisticness ($\underline{r}$ = -.32) scales correlated significantly ($\underline{p}$ < .01) with ROS-I. The Traditional, Companionable, and Omniness scales had correlation coefficients of $\underline{r}$ = .25, $\underline{r}$ = .25, $\underline{r}$ = .28, respectively ($\underline{p}$ < .05). Table 11 provides the correlations between the COG and the other religious measures.

Table 11

Correlations between COG and other Religious Measures

Subscale	SWB[a]	EWB[a]	RWB[a]	SDS[b]
Traditional	.63***	.21*	.77***	-.40***
Benevolent	.41***	.35***	.71***	-.50***
Companionable	.58***	.20*	.80***	-.37***
Kindliness	.62***	.23*	.75***	-.40***
Omniness	.61***	.35***	.65***	-.45***
Evaluation	.61***	.23*	.74***	-.37***
Eternality	.47***	.11	.61***	-.26***
Wrathful	-.04	-.24*	.11	.21**
Deisticness	-.58***	-.39***	-.58***	.51***
Irrelevancy	-.40***	-.20	-.44***	.39***
Passive	-.15	-.30**	-.01	.20**

(table continues)

Table 11 -- Continued

Subscale	SMI[c]	ROS-E[c]	ROS-I[c]
Traditional	.49***	-.42***	.25*
Benevolent	.56***	-.58***	.37**
Companionable	.52***	-.52***	.25*
Kindliness	.47***	-.55***	.16
Omniness	.30*	-.12	.28*
Evaluation	.37**	-.27*	.17
Eternality	.13	-.20	.16
Wrathful	-.19	.29*	-.09
Deisticness	-.50***	.50***	-.32**
Irrelevancy	-.12	.11	-.17
Passive	-.09	.17	.06

Note. SWB = Spiritual Well-Being. EWB = Existential Well-Being. RWB = Religious Well-Being. SDS = Spiritual Distress Scale. SMI = Spiritual Maturity Index. ROS-E = Religious Orientation Scale-Extrinsic. ROS-I = Religious Orientation Scale-Intrinsic.

ROS-I correlation coefficients are reversed since low scores indicate Intrinsic Religious Orientation.
[a]N = 90-97. [b]N = 167-179. [c]N = 68
*p<.05. **p<.01. **p<.001 (two-tailed)

The Traditional scale was significantly correlated with all the other scales. It was positively correlated with the Benevolent, Companionable, Kindliness, Omniness, Eternality, Evaluation, and Passive scales, with coefficients ranging from .44 to .93 ($p < .001$). It had a correlation coefficient of $r = .26$ ($p < .01$) with the Wrathful scale. The Traditional scale correlated negatively with the Deisticness ($r = -.38$) and Irrelevancy ($r = -.59$) scales ($p < .001$).

The Benevolent scale correlated with all but the Irrelevancy scale, with coefficients ranging from .28 to .65. The Companionable scale also correlated with all the other scales, with coefficients ranging from .30 to .87. The Kindliness scale correlated highly ($p < .001$) with all but the Wrathful scale ($r = .08$).

The Wrathful scale showed fewest significant correlations with the other COG scales. It did not

correlate significantly with the Kindliness (r = .08), Irrelevancy (r = .03), or Evaluation (r = .12) scales. It had correlation coefficients ranging from .23 to .30 ($p < .001$) with the Traditional, Benevolent, Companionable, Deisticness, and Omniness scales. The Passive and Wrathful scales were correlated at r = .57 ($p < .001$).

The Evaluation scale correlated significantly (r = .37 to .87; $p < .001$) with all the scales but the Wrathful scale. Both the Deisticness and Omniness scales correlated (r = .23 to .76; $p < .01$) with all but the Passive scale.

In summary, the results from the correlations show the COG to correlate significantly with the SWB, SMI, SDS, and ROS. In addition, the COG scales significantly intercorrelate with one another. Of these scales, the Wrathful correlates with the fewest scales.

Correlation coefficients among the individual COG scales were computed and are reported in Table 12. In addition, this table reports the two-tailed level of significance for each significant correlation. The

results revealed a great deal of intercorrelation among the scales.

Table 12

Correlation Matrix for the COG Scales

	TRA	BEN	COM	KIN	OMN
TRA	-				
BEN	.61***	-			
COM	.85***	.47***	-		
KIN	.93***	.58***	.87***	-	
OMN	.76***	.37***	.57***	.61***	-
EVL	.87***	.51***	.74***	.82***	.60***
ETR	.86***	.65***	.62***	.77***	.65***
WRA	.26**	.28**	.30**	.08	.23**
DEI	-.38***	.39***	-.31***	-.41***	-.34***
IRR	-.59***	-.11	-.45***	-.53***	-.53***
PAS	.44***	.32***	.41***	.33***	.43***

(table continues)

Table 12 -- Continued

	EVL	ETR	WRA	DEI	IRR	PAS
EVL	-					
ETR	.70***	-				
WRA	.12	.16*	-			
DEI	-.37***	-.24**	.23**	-		
IRR	-.50***	-.55***	.03	.52***	-	
PAS	.32***	.34***	.57***	.01	-.19**	-

Note: TRA = Traditional. BEN = Benevolent. COM = Companionable. KIN = Kindliness. OMN = Omniness. EVL = Evaluation. ETR = Eternality. WRA = Wrathful. DEI = Deisticness. IRR = Irrelevancy. PAS = Passive.

N = 269

*p<.05. **p<.01. ***p<.001

Confirmatory Factor Analysis

Two confirmatory factor analyses were performed using a pooling of Samples 1 and 2, with a total of 269 cases. The first confirmatory factor analysis proposed a four-factor model for the COG scales. The second confirmatory factor analysis was completed using a one-factor or null model to be compared with the four factor model. In addition to the two confirmatory factor analyses, an exploratory factor analysis at the scale level was completed. Each of these analyses will be described in turn.

Confirmatory Factor Analysis: Four-Factor Model

In an effort to confirm the four-factor model, it was necessary to carry out several steps. The first step was to confirm Gorsuch's original eight primary factors (Wrathful, Kindliness, Deisticness, Irrelevancy, Omniness, Evaluation, Eternality, and Potently Passive). Once the primary factors were confirmed, subsequent steps would seek to confirm the two secondary factors (Benevolent Deity and Companionable) and then the one tertiary factor

(Traditional Christian) which encompassed five of the primary factors. However, if the primary or secondary factors were not confirmed, there would be no need to proceed further because the four-factor model based on Gorsuch's (1968) research is dependent upon the primary and secondary factors.

The confirmatory factor analysis was performed using the Simplis microprocessing program of Joreskog and Sorbom (1987). Goodness of fit is traditionally assessed through the application of a chi-square test of the degree of discrepancy between the observed intercorrelations and the interrelationships proposed by the theoretical model of the factor structure. Goodness of fit is indicated by a low degree of discrepancy reflected in nonsignificant values of the chi-square statistic. A value of 1 would indicate perfect model fit. In addition, the relation of chi-square to its degrees of freedom is used to judge goodness of fit. When this value is less than two, fit is said to be good (Alwin & Jackson, 1981).

Other criteria for assessing model fit include the Adjusted Goodness of Fit Index (AGFI) and the Root Mean Squares Residual (RMSR). The AGFI considers the number

of parameters estimated by the model, while the RMSR measures the average size of estimation error in the fitted model (Joreskog & Sorbom, 1987; Wolfe, 1981). Values in the .90 range for these measures indicate good model fit.

One other measure of goodness of fit is the Tucker-Lewis Index (TLI). This measure is valuable because it has been reported to be less dependent upon sample size (Marsh & O'Neill, 1984). For this index, values near 0.9 indicate good model fit, while values significantly lower than 0.9 suggest poor fit.

The indicators described above are presented in Table 13 for the confirmatory factor analysis of the eight primary level scales, along with the desired values for each indicator and whether fit is good or poor. The chi-square value is seen to be extremely large and highly significant, the ratio of chi-square to degrees of freedom is well above a value of two, and the AGFI, RMSR, and TLI are relatively small. These results suggest that for this sample the eight primary factors have very poor fit and the model is not confirmed.

Table 13

Goodness of Fit Results

	X^2	p	df	X^2/df	AGFI	RMSR	TLI
Observed	8595	.0001	1098	7.83	.162	.318	.249
Desired	1	-	-	< 2	>.9	>.9	>.9
Fit	Poor	-	-	Poor	Poor	Poor	Poor

Note: X^2 = chi-square. df = degrees of freedom.

AGFI = Adjusted Goodness of Fit Index.

RMSR = Root Mean Squares Residual.

TLI = Tucker-Lewis Index.

These results further indicate that the hypothesized four-factor model cannot be confirmed. The statistical analysis did not proceed any further since the basis of the four-factor model was the eight original primary factors.

Confirmatory Factor Analysis: Null Model

A one-factor model was used to complete a second confirmatory factor analysis. For this analysis, the items comprising the eight original primary factors, as derived by Gorsuch, were used. The statistical analysis revealed a positive definite correlation matrix for the null model. This meant that the hypothesized model was so different from the data that the model fit could not even be estimated (Jorskog & Sorbom, 1987). Therefore the microprocessing program could not complete the factor analysis.

Exploratory Factor Analysis

Since the four-factor model was not supported by the confirmatory factor analysis and the data also did not fit a one-factor model, an exploratory factor

analysis was completed to investigate the factor structure of the COG for the sample used in this study. An oblimin method was used for this factor analysis. The oblimin method uses an oblique rotation and assumes the variables are correlated. The analysis was completed at the scale level, utilizing the eight primary factors found in Gorsuch's original research (Wrathful, Deisticness, Omniness, Irrelevancy, Eternality, Potently Passive, Kindliness, and Evaluation).

Analysis at the scale level was utilized for two reasons. The first was the unreliabilty of items (Gorsuch, 1983). Gorsuch pointed out that spurious factors can be derived when exploratory factor analysis is completed at the item level. This is particularly true when scores tend to pile up at one end of the scale (skewness). The results reported earlier in this chapter revealed that many of the COG scales were skewed. Using a scale analysis helps avoid spurious factors.

In addition, scale level analysis was completed due to limitations of computer software and hardware available. Analysis at the item level would have

needed a computer with a great deal of memory capacity (i.e., a mainframe).

Table 14 presents the statistics for this analysis, including percentage of cumulative variance and eigenvalues. The high eigenvalues for the first two factors and the 69% of the variance that is accounted for by two factors (see Table 14) indicates a two factor structure for these eight scales.

Table 14

Factor Analysis Statistics

Scale	Communality	Eigenvalue	% of Var	Cum %
WRA	.259	3.92860	49.1	49.1
KIN	.763	1.56842	19.6	68.7
DEI	.554	.64023	8.0	76.7
OMN	.554	.60041	7.5	84.2
EVL	.649	.47163	5.9	90.1
IRR	.512	.38162	4.8	94.9
ETR	.699	.26506	3.3	98.2
PAS	.223	.14402	1.8	100.0

Note: WRA = Wrathful. KIN = Kindliness. DEI = Deisticness. OMN = Omniness. EVL = Evaluation. IRR = Irrelevancy. ETR = Eternality. PAS = Passive.

Table 15 presents the factor matrix of the eight scales, while Table 16 reports the correlation among the factors found in this investigation. Factor one (see Table 15) is comprised of the Kindliness, Evaluation, Eternality, Omniness, Deisticness, and Irrelevancy scales, with Deisticness and Irrelevancy being highly negatively correlated to the other scales. The second factor is made up of the Wrathfulness and Potently Passive scales. With both factors the loadings are quite high, suggesting relatively strong factors. In addition, Table 16 shows that the two factors do not correlate with one another. These results indicate that two relatively separate factors exist among the eight scales.

Table 15

Factor Matrix

Scale	Factor 1	Factor 2
KIN	.87388	.01944
EVL	.81403	.07115
ETR	.80626	.11859
OMN	.76123	.11469
IRR	-.68813	.20570
DEI	-.64307	.39931
WRA	.13507	.65546
PAS	.08922	.58258

Note: KIN = Kindliness. EVL = Evaluation. ETR = Eternality. OMN = Omniness. IRR = Irrelevancy. DEI = Deisticness. WRA = Wrathful. PAS = Passive.

Table 16

Factor Correlation Matrix

	Factor 1	Factor 2
Factor 1	1.00000	
Factor 2	.06037	1.00000

CHAPTER 4

DISCUSSION

The purpose of this study was to provide further information concerning the validity and reliability of the COG. Of particular interest to this study was to further the process of construct validation of this instrument. This chapter will discuss the results presented in the previous chapter in light of the purpose of the investigation. The chapter will be divided into sections addressing reliability, construct validity, contributions, usefulnes of the scale, and suggestions for future research.

Reliability

Test-retest reliability coefficients were gathered using 120 participants at a six week interval. The reliability coefficients ranged from $\underline{r}$ = .60 to $\underline{r}$ =

.83, with most being in the .70's. All the reliability coefficients were significant at the $p < .001$ level.

Anastasi (1988) stated that reliability coefficients should be in the .80's to .90's for psychological tests. Nunnally, on the other hand, believes reliability coefficients above .70 are respectable (1978). Typically, scales measuring beliefs or attitudes are not required to have as high a coefficient since these traits are less stable in comparison to skills or knowledge bases. Therefore, the test-retest reliability estimates for all the scales except Passive can be considered adequate. This means that scores from the COG scales, excluding Passive, can be considered reasonably reliable measures.

The internal consistency alphas were computed on both samples. These suggest that the Traditional (.95 & .98), Companionable (.81 &.87), Kindliness (.93 & .94), Wrathful (.84 & .83), Omniness (.85 &.87), Eternality (.89 & .91), Deisticness (.65 & .80), and Evaluation (.71 & .80) scales are measuring homogeneous constructs.

The results suggest that the Benevolent and Passive scales did not measure homogeneous constructs and are rather unstable. The Deisticness scale also appears somewhat unstable in its ability to measure the construct.

Construct Validity

Correlational Results

The results of this investigation on the construct validity of the COG are mixed. The significant correlations between the COG scales and the other religious measures provide support for the construct validity of the COG.

Spiritual Well-Being Scale

All of the COG scales, except Wrathful and Passive, correlated significantly with the Spiritual Well-Being scale (see Table 9); correlation coefficients ranged from .41 to .63 ($p < .001$). The correlations for Deisticness and Irrelevancy scales were negative, which means as the scale score decreases on the these scales the SWB score increases. Wrathful and Passive were not significantly correlated with the

SWB. In addition, the COG scales were more highly correlated to the RWB subscale than to the EWB subscale. This suggests that one's belief about God is more related to one's relationship to that God than how one is functioning in life. However, concerns about the factor structure of the SWB scale indicate a need to be cautious about this interpretation (Ledbetter, Smith, Fischer, Vosler-Hunter, & Chew, 1989).

Lewis (1986) reported similar findings for the correlation of the COG and SWB in his doctoral dissertation. For the SWB and the RWB the coefficients with the Traditional scale were .596 and .752 respectively, both significant at $p < .01$. The EWB was not significantly correlated to the COG Traditional scale ($r = .021$).

Dean (1987) also reported results of correlations between the five COG scales she used and SWB in the appendix of her dissertation. The Traditional scale was found to correlate significantly with the SWB ($r = .21$, $p < .01$). The Kindliness scale had correlation coefficients with the SWB, EWB, and RWB of .35, .24, and .31, respectively ($p < .001$). Also, the Deisticness had correlation coefficients of -.46,

-.36, -.42, for the same scales ($p < .001$). The Wrathful and Omniness scales did not correlate significantly with the SWB scales.

Spiritual Distress Scale

The COG scales also correlated significantly with the Spiritual Distress Scale. The Kindliness ($r = -.40$), Omniness ($r = -.45$), Evaluation ($r = -.37$), and Eternality ($r = -.26$) scales correlated negatively. The Deisticness ($r = .51$) and Irrelevancy ($r = .39$) scales correlated positively and significantly with the SDS. All other relationships were significant at $p < .001$. These relationships are in the expected direction since high scores on the SDS indicate distress.

Spiritual Maturity Index

Several of the COG scales correlated moderately and significantly with the SMI. The Traditional ($r = .49$), Benevolent ($r = .56$), Companionable ($r = .52$), Kindliness ($r = .47$), and Deisticness ($r = -.50$) scales all correlated highly ($p < .001$), while Evaluation had a moderate correlation coefficient ($r = .37$, $p < .01$), as did Omniness ($r = .30$, $p < .05$).

Religious Orientations Scale

The ROS-E correlated negatively and moderately with the COG scales including the Traditional (r = -.42), Benevolent (r = -.58), Companionable (r = -.52), Kindliness (r = -.55), and Deisticness (r = -.50) scales. Evaluation and Wrathful scales had correlations of r = -.27 and r = .29, respectively, with the ROS-E. The ROS-I correlated less strongly, with Benevolent (r = .37) and Deisticness (r = -.32), as well as with the Traditional (r = .25), Companionable (r = .25), and Omniness (r = .28) scales showing significant relationships.

These correlations provide support for the construct validity of the COG, and several generalizations can be drawn. First, high scores on the COG Traditional, Benevolent, Companionable, Kindliness, Omniness, Evaluation, and Eternality scales were related to high scores on the SWB and RWB, and to low scores on the Spiritual Distress Scale. Second, high scores on the Wrathful, Deisticness, Irrelevancy, and Passive scales were related to low scores on the SWB and RWB, and to high scores on the SDS.

Third, for the Spiritual Maturity Index, high scores were related to high scores on the Traditional, Benevolent, Companionable, Kindliness, and Evaluation scales. Low scores on the Deisticness scale were related to high scores on the SMI, while the other COG scales were not significantly related.

Finally, for the Extrinsic scale of the Religious Orientations Scale, low scores were related to high scores on the Traditional, Benevolent, Companionable, and Kindliness scales. High scores on the ROS-E were related to high scores on the Deisticness scale. Fifth, high scores on the Traditional, Benevolent, Omniness, and Evaluation scales were moderately related to Intrinsic religious orientation as measure by the ROS. Because low scores on the ROS-I indicate intrinsic religious orientation, these correlations are largely in the expected range.

Factor Analysis Results

While the results from the correlations of the COG with other tests support the construct validity of the COG, the results from the confirmatory factor analysis did not provide support for factorial construct

validity. Rather, these results bring into question the factor structure suggested in the review of the literature. This factor structure (four-factor model) was not confirmed in this investigation with this sample. In addition, the results from exploratory factor analysis showed that a two-factor model was best at explaining the relationship of the eight primary factors (i.e., eight subscales) reported by Gorsuch (1968). This factor structure is supported by the correlations of the scales with other measures, which consistently saw the Wrathful and Passive scales correlating nonsignificantly or at a lower level than the other six scales (all correlations $\leq .30$).

The factor structure of these scales appear to describe God in two ways. Factor 1 views God as positively and actively involved with man. This factor conveys the idea that God has a positive orientation towards man and is involved in the affairs of man. In addition, this factor contains a high view of God (omniness & eternality). Factor 2, on the other hand, sees God as having a hostile and passive orientation towards man. God is viewed as being both angry and uninvolved with man. In summary, the results of the

exploratory factor analysis suggests two broad views of God: (a) positive and active, and (b) hostile and passive.

Similar results have been reported by Hammersla, Andrews-Qualls, and Frease (1986). Based on the high intercorrelations of the subscales they reported that four dimensions appeared to be present. One of these dimensions incorporated six scales which measured positive aspects concerning God, while the other three viewed God as Irrelevant, Vindictive, or Distant. This information was presented in Chapter 1 as part of the rationale for the four-factor model. Somewhat inconsistently, Hammersla et al. went on to say that the four dimensions of God concept could be described basically as either "favorable" or "unfavorable" views of God.

In addition, looking once again at the research of Poling, Kenney, and Jilnicki-Lipman (1988), a similar finding is seen. The factor analysis they completed found five factors (Benevolent, Wrathful, Omniness, Significant, and Remote). However, the Benevolent factor correlated positively and significantly ($p < .001$) with the Significant ($r = .48$) and Omniness

(r = .51) factors. The Wrathful and Remote factors were correlated at r = .25 ($p < .05$). These results also suggest the possibility of a broader description of God as either positive or negative.

The results of the investigation indicate that the COG is not able to discriminate variations of God concept at a specific or subtle level for the present sample. However, it does appear able to identify a global concept of God as positive or negative. The results from Hammersla et al. (1986) and Poling et al. (1988) are at at least partially consistent with this conclusion.

It is also important to note that the two factors found in the exploratory factor analysis completed in this study are not related to one another. This means that an individual could score high or low for both factors; positive and active, and hostile and passive. The results suggest the two factors do not lie at opposite ends of the same continuum. Rather, each of the factors is on its own continuum, independent of the other.

Another important piece of information to consider while looking at the construct validity of the COG is

the skewness of the COG scales. Tables 6 and 7 in Chapter 3 reported the descriptive statistics for the COG. When examining the means and standard deviations of the scales, for seven of the scales (Traditional, Kindliness, Omniness, Evaluation, Eternality, Deisticness, and Irrelevancy) there was less than one standard deviation from the mean to the ceiling or floor of the scale and for two others (Companionable, and Passive) there was less than two standard deviations. These results show nine of the COG scales to be negatively or positively skewed. This means that there is a piling up of scores at the high end of the scale (negative skewness), except for Deisticness and Irrelevancy for which the piling occurs at the low end (positive skewness).

This is a significant limitation of the scale. Such ceiling or floor effects restrict the range of scores, preventing them from being as high or low as they might have been. The skewness of the scale also restricts the usefulness of the instrument in measuring high scores on the Traditional, Kindliness, Eternality, Companionable, and Passive scale, and low scores on the Deisticness and Irrelevancy scales. With such large

skewness of a scale it is difficult to differentiate between moderate and high scores for the negatively skewed scales and between moderate and low scores on the positively skewed scales.

Another implication of skewness of the scales is that correlations between the scale and other variables are lowered or suppressed (Brewer & Hill, 1969). This means that the validity coefficients discussed above may be low estimates. However, it is difficult to determine to what degree the correlation coefficients are reduced. Also, since factor analysis is based upon correlations among items, the observed skewness probably affected the factor structure of the COG found in this investigation.

Dean (1987) experienced similar skewing for the five COG scales she used in her research with college age women. The Traditional, Kindliness, and Omniness scales were very negatively skewed, with less than one standard deviation between the mean and the ceiling of the scale. The Deisticness scale allowed three standard deviations and the Wrathful scale did not suffer from skewness.

Lewis (1986) also experienced some skewing of the COG scales in the two religious (Unitarian & Baptist) samples he used. With the Unitarian sample the Irrelevancy scale was limited to less than one standard deviation between the mean and the ceiling, while the Traditional, Companionable, Kindliness, Wrathful, Omniness, Evaluative, Eternality, and Passive scales were limited to less than two standard deviations. The Baptist sample revealed less skewing, with only the Irrelevancy scale limited to less than one standard deviation and the Omniness, Evaluative, Eternality, and Passive scales limited to two.

It is not known whether the scales have had such ceiling effects in other studies using the COG since the researchers (Hammersla et al., 1986; Poling et al., 1988) did not report descriptive statistics.

Skewness of scales has been reported to be common when instruments are administered to homogeneous samples (Ledbetter, Smith, Vosler-Hunter, & Fischer, 1989). However, Samples 1 and 2 were pooled to gain these results and were a rather heterogeneous sample (community college and church populations). This suggests that it is the scale itself which produces the

skewing of scores. In addition, it is possible that skewness is a major factor in the discrepancies among different samples in the factor analytic results for the COG.

Suggestions for Future Research

It would be beneficial if future research proceeded on two levels with the COG. The individual scales need to be evaluated at the item level. The results of this investigation suggest several of the scales need revision or even deletion because they are not measuring homogeneous constructs. Also of great importance at the item level is possible revisions of the measure to reduce the skewing of the scales. Deletion of present items and/or addition of new items may be necessary.

Coinciding with the above research, the factor structure of the COG needs to be investigated further. This study suggests a two-factor model for the COG scales. However, these results were derived at the scale level. It would be helpful to complete a factor

analysis at the item level with a large heterogeneous sample (N > 400).

Contributions

The Concept of God scale has been used sporadically since its development in 1968. Within the last three years five studies have used some variation of its items as a research instrument to determine the relationship of the COG with other variables. The present study sought to step back from the use of the COG as a research instrument and to examine its validity and reliability.

This study contributed to the reliability of the COG. Prior to this investigation little was known concerning the reliability of the instrument. The results of the present study provide encouraging test-retest reliability coefficients (for all but the PAS) and internal consistency alphas (for all but the BEN and PAS).

This study also contributed to the validity of the instrument by showing expected correlations between it and other religious measures. However, the factorial

construct validity of the COG was not supported by this investigation. Rather, questions have arisen concerning the factor structure of the COG. Specifically, can COG measure a multifaceted concept of God or is it limited to broad dimensions such as positive and negative?

Other questions that have arisen from this investigation in the area of validity concern the impact of the skewness of the COG's scales. The ability of the scale to discriminate between scores at the extreme end of the scale is limited, thus the validity coefficients and the factor structure may each be effected.

Usefulness of the COG

In its present form the COG should be used only as a research instrument. The questions raised concerning its construct validity in this investigation must be resolved before it can be used for decision making purposes. In addition, because of skewness, the Traditional, Kindliness, Omniness, Evaluation, Eternality, and Passive scales are useful only for

interpreting low scores, while Deisticness and Irrelevancy scales are limited to high scores.

Even with these present limitations, it is believed that the development of this instrument is worthwhile. Numerous researchers and clinicians alike have stated the importance of an instrument to measure God concept (Elkind, 1970; Gorsuch, 1968; Hammersla et al., 1986; Vredevelt & Rodriguez, 1987).

An instrument which can consistently and accurately measure God concept could have usefulness to a variety of professionals. First, it would be valuable to researchers to investigate further the nature of God concept, its relationship to other variables, and possible causal links. Second, it would be beneficial to clinicians working with religiously oriented clients. It has been suggested that an individual's concept of God is developed out of relationships with either father, mother, or both (Benson & Spilka, 1973). Disturbance or trauma in these relationships (e.g., abuse or neglect) may produce distortions in the concept of God an individual develops. Using an instrument such as the COG would help the clinician better understand these disturbances

and aid in the treatment process. Thirdly, along these same lines, such an instrument could be helpful to pastors as they are working with individuals or groups. However, since the instrument has been shown to have low validity and is factorially ambiguous it is not useful for these purposes. In light of this, this researcher strongly urges that research and development continue on the COG to produce a valid instrument, so that it will be useful for the above purposes.

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Appendix A

Concept of God Scale

COG

For each of the following terms, *circle* the choice that best describes how you understand God:

1 = Strongly unlike God
2 = Moderately unlike God
3 = Slightly unlike God
4 = Slightly like God
5 = Moderately like God
6 = Strongly like God

Absolute	1 2 3 4 5 6	All-Wise	1 2 3 4 5 6	Avenging	1 2 3 4 5 6
Blessed	1 2 3 4 5 6	Blunt	1 2 3 4 5 6	Charitable	1 2 3 4 5 6
Comforting	1 2 3 4 5 6	Considerate	1 2 3 4 5 6	Controlling	1 2 3 4 5 6
Creative	1 2 3 4 5 6	Critical	1 2 3 4 5 6	Cruel	1 2 3 4 5 6
Damning	1 2 3 4 5 6	Distant	1 2 3 4 5 6	Divine	1 2 3 4 5 6
Eternal	1 2 3 4 5 6	Everlasting	1 2 3 4 5 6	Fair	1 2 3 4 5 6
Faithful	1 2 3 4 5 6	False	1 2 3 4 5 6	Fatherly	1 2 3 4 5 6
Feeble	1 2 3 4 5 6	Firm	1 2 3 4 5 6	Forgiving	1 2 3 4 5 6
Gentle	1 2 3 4 5 6	Glorious	1 2 3 4 5 6	Gracious	1 2 3 4 5 6
Guiding	1 2 3 4 5 6	Hard	1 2 3 4 5 6	Helpful	1 2 3 4 5 6
Holy	1 2 3 4 5 6	Impersonal	1 2 3 4 5 6	Important	1 2 3 4 5 6
Inaccessible	1 2 3 4 5 6	Infinite	1 2 3 4 5 6	Jealous	1 2 3 4 5 6
Just	1 2 3 4 5 6	Kind	1 2 3 4 5 6	Kingly	1 2 3 4 5 6
Loving	1 2 3 4 5 6	Majestic	1 2 3 4 5 6	Matchless	1 2 3 4 5 6
Meaningful	1 2 3 4 5 6	Merciful	1 2 3 4 5 6	Moving	1 2 3 4 5 6
Mythical	1 2 3 4 5 6	Omnipotent	1 2 3 4 5 6	Omnipresent	1 2 3 4 5 6
Omniscient	1 2 3 4 5 6	Passive	1 2 3 4 5 6	Patient	1 2 3 4 5 6
Powerful	1 2 3 4 5 6	Protective	1 2 3 4 5 6	Punishing	1 2 3 4 5 6
Real	1 2 3 4 5 6	Redeeming	1 2 3 4 5 6	Righteous	1 2 3 4 5 6
Severe	1 2 3 4 5 6	Sharp	1 2 3 4 5 6	Slow	1 2 3 4 5 6
Sovereign	1 2 3 4 5 6	Steadfast	1 2 3 4 5 6	Stern	1 2 3 4 5 6
Still	1 2 3 4 5 6	Strong	1 2 3 4 5 6	Supporting	1 2 3 4 5 6
Timely	1 2 3 4 5 6	Tough	1 2 3 4 5 6	True	1 2 3 4 5 6
Valuable	1 2 3 4 5 6	Vigorous	1 2 3 4 5 6	Warm	1 2 3 4 5 6
Weak	1 2 3 4 5 6	Worthless	1 2 3 4 5 6	Wrathful	1 2 3 4 5 6

COG Scale Scoring Instructions

1. For each of the items the circled number is the value of the response, except where noted. There are eleven factors in this scale.

2. For Factor 1, Traditional Christian (TRC), add together the scores from the following adjectives: Absolute, All-wise, Blessed, Charitable, Comforting, Considerate, Controlling, Creative, Divine, Eternal, Everlasting, Fair, Faithful, Fatherly, Firm, Forgiving, Gentle, Glorious, Gracious, Guiding, Helpful, Holy, Important, Infinite, Just, Kind, Kingly, Loving, Majestic, Matchless, Meaningful, Merciful, Moving, Omnipotent, Omnipresent, Omniscient, Patient, Powerful, Protective, Real, Redeeming, Righteous, Sovereign, Steadfast, Stern, Strong, Supporting, True, Valuable, Vigorous, Warm. Range: 51 to 306.

3. For Factor 2, Benevolent Deity (BEN), reverse the score on the following adjectives: Distant, Impersonal, Inaccessible, and Passive:

   1 = 6; 2 = 5; 3 = 4; 4 = 3; 5 = 2; 6 = 1.

   Add the assigned values of these adjectives to the values of: All-Wise, Comforting, Divine, Forgiving, Loving, Merciful, Protective, and Redeeming. Range: 12 to 72.

4. For Factor 3, Companionable (COM), add the scores for the following adjectives: Considerate, Fair, Faithful, Helpful, Kind, Moving, and Warm. Range: 7 to 42.

5. For Factor 4, Kindliness (KND), add the scores for the following adjectives: Charitable, Comforting, Considerate, Fair, Forgiving, Gentle, Gracious, Just, Kind, Loving, Merciful, and Patient. Range: 12 to 72.

COG Scoring Instructions (continued)

6. For Factor 5, Wrathfulness (WRA), sum the scores for the following adjectives: Avenging, Blunt, Critical, Cruel, Damning, Hard, Jealous, Punishing, Severe, Sharp, Stern, Tough, and Wrathful. Range: 13 to 78.

7. For Factor 6, Deisticness (DEI), add together the scores for the following adjectives: Distant, Impersonal, Inaccessible, Mythical, and Passive. Range: 5 to 30.

8. For Factor 7, Omni-ness (OMN), add the scores for the following adjectives: Infinite, Omnipotent, Omnipresent, and Omniscient. Range: 4 to 24.

9. For Factor 8, Evaluation (EVL), add the scores for the following adjectives: Important, Meaningful, Timely, Valuable, and Vigorous. Range: 5 to 30.

10. For Factor 9, Irrelevancy (IRR), sum the scores for the following adjectives: False, Feeble, Weak, and Worthless. Range: 4 to 24.

11. For Factor 10, Eternality (ETR), add together the scores for the following adjectives: Divine, Eternal, Everlasting, and Holy. Range: 4 to 24.

12. For Factor 11, Potently Passive (PAS), add the scores for the following adjectives: Slow, Still, and Tough. Range: 3 to 18.

13. Missing data can be dealt with in a number of ways. This study assigned it a neutral value of 3.5.

14. Interpretation key: Higher scores on factors indicate respondent is endorsing more items representative of the factor than those with lower scores. The higher the score the more the person sees God in that way.

Appendix B

Spiritual Well-Being Scale

SWB

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA = Strongly Agree A = Agree MD = Moderately Disagree
MA = Moderately Agree D = Disagree SD = Strongly Disagree

1.	I don't find much satisfaction in private prayer with God.	SA MA A D MD SD
2.	I don't know who I am, where I came from, or where I'm going.	SA MA A D MD SD
3.	I believe that God loves me and cares about me.	SA MA A D MD SD
4.	I feel that life is a positive experience.	SA MA A D MD SD
5.	I believe that God is impersonal and not interested in my daily situations.	SA MA A D MD SD
6.	I feel unsettled about my future.	SA MA A D MD SD
7.	I have a personally meaningful relationship with God.	SA MA A D MD SD
8.	I feel very fulfilled and satisfied with life.	SA MA A D MD SD
9.	I don't get much personal strength and support from my God.	SA MA A D MD SD
10.	I feel a sense of well-being about the direction my life is headed in.	SA MA A D MD SD
11.	I believe that God is concerned about my problems.	SA MA A D MD SD
12.	I don't enjoy much about life.	SA MA A D MD SD
13.	I don't have a personally satisfying relationship with God.	SA MA A D MD SD
14.	I feel good about my future.	SA MA A D MD SD
15.	My relationship with God helps me not to feel lonely.	SA MA A D MD SD
16.	I feel that life is full of conflict and unhappiness.	SA MA A D MD SD
17.	I feel most fulfilled when I'm in close communion with God.	SA MA A D MD SD
18.	Life doesn't have much meaning.	SA MA A D MD SD
19.	My relation with God contributes to my sense of well-being.	SA MA A D MD SD
20.	I believe there is some real purpose for my life.	SA MA A D MD SD

SWB Scale Scoring Instructions

1. For items 1, 2, 5, 6, 9, 12, 13, 16, and 18 the following values are assigned:

   SA = 1; MA = 2; A = 3; D = 4; MD = 5; SD = 6.

2. For items 3, 4, 7, 8, 10, 11, 14, 15, 17, 19, and 20 assign these values:

   SA = 6; MA = 5; A = 4; D = 3; MD = 2; SD = 1.

3. Missing data can be dealt with in a number of ways. This study assigned it a neutral value of 3.5. Five or more missing invalidated the scale.

4. The Religious Well-Being subscale consists of all the odd numbered items. Sum the assigned values to arrive at the RWB score.

5. The Existential Well-Being subscale consists of all the even numbered items. Add the assigned values together to arrive at the EWB score.

6. The SWB full scale score is the sum of the EWB and RWB scores.

7. The possible range of scores for the EWB and RWB subscales is from 10 to 60. The range for the full scale SWB score is from 20 to 120.

8. Interpretation key: Higher scores on subscales and full scale indicate respondent is reporting greater well-being than those with lower scores.

Appendix C

Spiritual Maturity Index

SMI

For each of the following statements circle the choice that best indicates the extent of your agreement or disagreement as it describes your personal experience:

SA = Strongly Agree A = Slightly Agree MD = Moderately Disagree
MA = Moderately Agree D = Slightly Disagree SD = Strongly Disagree

1.	My faith doesn't primarily depend on the formal church for its vitality.	SA MA A D MD SD
2.	The way I do things from day to day is often affected by my relationship with God.	SA MA A D MD SD
3.	I seldom find myself thinking about God and spiritual matters during each day.	SA MA A D MD SD
4.	Even if the people around me opposed my Christian convictions, I would still hold fast to them.	SA MA A D MD SD
5.	The encouragement and example of other Christians is essential for me to keep on living for Jesus.	SA MA A D MD SD
6.	I feel like I need to be open to consider new insights and truths about my faith.	SA MA A D MD SD
7.	I am convinced that the way I believe spiritually is the right way.	SA MA A D MD SD
8.	People that don't believe the way that I do about spiritual truths are hard-hearted.	SA MA A D MD SD
9.	I feel that a Christian needs to take care of his (her) <u>own</u> needs first in order to help others.	SA MA A D MD SD
10.	My faith doesn't seem to give me a definite purpose in my daily life.	SA MA A D MD SD
11.	I find that following Christ's example of sacrificial love is one of my most important goals.	SA MA A D MD SD
12.	My identity (who I am) is determined more by my personal or professional situation than by my relationship with God.	SA MA A D MD SD
13.	Walking closely with God is the greatest joy in my life.	SA MA A D MD SD
14.	I feel that identifying and using my spiritual gifts is not really important.	SA MA A D MD SD
15.	I don't seem to be able to live in such a way that my life is characterized by the fruits of the Spirit.	SA MA A D MD SD
16.	When my life is done I feel like only those things that I've done as part of following Christ will matter.	SA MA A D MD SD
17.	I believe that God has used the most "negative" of difficult times in my life to draw me closer to Him.	SA MA A D MD SD

18.	I feel like God has let me down in some of the things that have happened to me.	SA MA A D MD SD
19.	I have chosen to forego various gains when they have detracted from my spiritual witness or violated spiritual principles.	SA MA A D MD SD
20.	Giving myself to God regardless of what happens to me is my highest calling in life.	SA MA A D MD SD
21.	I don't regularly study the Bible in depth on my own.	SA MA A D MD SD
22.	I actively look for opportunities to share my faith with non-Christians.	SA MA A D MD SD
23.	My relationships with others are guided by my desire to express the love of Christ.	SA MA A D MD SD
24.	I don't regularly have times of deep communion with God in personal (private) prayer.	SA MA A D MD SD
25.	More than anything else in life I want to know God intimately and to serve Him.	SA MA A D MD SD
26.	Worship and fellowship with other believers is a significant part of my Christian life.	SA MA A D MD SD
27.	It seems like I am experiencing more of God's presence in my daily life than I have previously.	SA MA A D MD SD
28.	I feel like I am becoming more Christ-like.	SA MA A D MD SD
29.	I seem to have less consistent victories over temptation than I used to.	SA MA A D MD SD
30.	On the whole, my relationship with God is alive and growing.	SA MA A D MD SD

SMI Scoring Instructions

1. For items 3, 5, 8, 9, 10, 12, 14, 15, 18, 21, 24, and 29 the following values are assigned:

   SA = 1; MA = 2; A = 3; D = 4; MD = 5; SD = 6.

2. For items 1, 2, 4, 6, 7, 11, 13, 16, 17, 19, 20, 22, 23, 25, 26, 27, 28, and 30 assign these values:

   SA = 6; MA = 5; A = 4; D = 3; MD = 2; SD = 1.

3. Missing data can be dealt with in a number of ways. This study assigned a value of 3.5. Five or more items omitted invalidated the scale.

4. The SMI full scale score is the sum of all the items. There are no subscales for this measure.

5. The possible range of scores for the SMI is from 30 to 180.

6. Interpretation key: Higher scores on the SMI indicate respondent is reporting greater spiritual maturity than those who receive lower scores.

Appendix D

Religious Orientations Scale

ROS

For each of the following statements circle the number of the choice which best describes your personal experience.

Q1. What religion offers most is comfort when sorrow and misfortune strike.

1 I definitely disagree
2 I tend to disagree
3 I tend to agree
4 I definitely agree

Q2. I try hard to carry my religion over into all my other dealings in life.

1 I definitely disagree
2 I tend to disagree
3 I tend to agree
4 I definitely agree

Q3. Religion helps to keep my life balanced and steady in exactly the same way as my citizenship, friendships, and other memberships do.

1 I definitely agree
2 I tend to agree
3 I tend to disagree
4 I definitely disagree

Q4. One reason for my being a church member is that such membership helps to establish a person in the community.

1 Definitely not true
2 Tends not to be true
3 Tends to be true
4 Definitely true

Q5. The purpose of prayer is to secure a happy and peaceful life.

1 I definitely disagree
2 I tend to disagree
3 I tend to agree
4 I definitely agree

Q6. It doesn't matter so much what I believe as long as I lead a moral life.

1 I definitely disagree
2 I tend to disagree
3 I tend to agree
4 I definitely agree

Q7. Quite often I have been aware of the presence of God or of the Divine Being.

1 Definitely not true
2 Tends not to be true
3 Tends to be true
4 Definitely true

Q8. My religious beliefs are what really lie behind my whole approach to life.

1 This is definitely not so
2 Probably not so
3 Probably so
4 Definitely so

Q9. The prayers I say when I am alone carry as much meaning and personal emotion as those said by me during services.

1 Almost never
2 Sometimes
3 Usually
4 Almost always

Q10. Although I am a religious person, I refuse to let religious considerations influence my everyday affairs.

1 Definitely not true for me
2 Tends not to be true
3 Tends to be true
4 Clearly true in my case

Q11. The church is most important as a place to formulate good social relationships.

1 I definitely disagree
2 I tend to disagree
3 I tend to agree
4 I definitely agree

Q12. Although I believe in my religion, I feel there are many more important things in life.

1 I definitely disagree
2 I tend to disagree
3 I tend to agree
4 I definitely agree

Q13. If not prevented by unavoidable circumstances, I attend church:

1 More than once a week
2 About once a week
3 Two or three times a month
4 Less than once a month

Q14. If I were to join a church group, I would prefer to join (1) a Bible study group, or (2) a social fellowship.

1 I would prefer to join (1)
2 I probably would prefer (1)
3 I probably would prefer (2)
4 I would prefer to join (2)

Q15. I pray chiefly because I have been taught to pray.

1 Definitely true of me
2 Tends to be true of me
3 Tends not to be true
4 Definitely not true of me

Q16. Religion is especially important to me because it answers my questions about the meaning of life.

1 Definitely disagree
2 Tend to disagree
3 Tend to agree
4 Definitely agree

Q17. A primary reason for my interest in religion is that my church is a congenial social activity.

1 Definitely not true of me
2 Tends not to be true
3 Tends to be true
4 Definitely true of me

Q18. I read literature about my faith (or church):

1 Frequently
2 Occasionally
3 Rarely
4 Never

Q19. Occasionally I find it necessary to compromise my religious beliefs in order to protect my social and economic well being.

1 Definitely disagree
2 Tend to disagree
3 Tend to agree
4 Definitely agree

Q20. It is important to me to spend periods of time in private religious thought and meditation.

1 Frequently true
2 Occasionally true
3 Rarely true
4 Never true

Q21. The primary purpose of prayer is to gain relief and protection.

1 I definitely agree
2 I tend to agree
3 I tend to disagree
4 I definitely disagree

ROS Scoring Instructions

1. For items 1, 4, 5, 6, 10, 11, 12, 13, 14, 17, 18, 19 and 20 the following values are assigned:

   1 = 1; 2 = 2; 3 = 4; 4 = 5

2. For items 2, 3, 7, 8, 9, 15, 16, and 21 assign these values:

   1 = 5; 2 = 4; 3 = 2; 4 = 1.

3. Missing data is always assigned the value 3.

4. The Extrinsic subscale consists of the following items: 1, 3, 4, 5, 6, 10, 11, 12, 15, 17, 19, and 21. Add the assigned values together to arrive at the ROS-E score.

5. The Intrinsic subscale is composed of these items: 2, 7, 8, 9, 13, 14, 16, 18, and 20. Add together the assigned values to achieve the ROS-I score.

6. The possible range of scores for the ROS-I subscale is from 9 to 45. The range for scores on the ROS-E subscale is from 12 to 60.

7. Interpretation key: In both subscales the items are scored in such a way that scores of 4 and 5 indicate an extrinsic orientation, while scores of 1 and 2 indicate an intrinsic orientation. Low scores on the ROS-I are considered to be representative of intrinsic types while high scores on the ROS-E are representative of extrinsic types. A person is considered "Indiscriminately Proreligious" if he or she has a ROS-I score that is at least 12 points less than the ROS-E score.

Appendix E

Spiritual Distress Scale

SDS

Circle the choice that best describes your feelings about each of the following items:

SA	= Strongly Agree	D	= Slightly Disagree
MA	= Moderately Agree	MD	= Moderately Disagree
A	= Slightly Agree	SD	= Strongly Disagree

1.	I feel God punishes me.	SA MA A D MD SD
2.	I feel God cares about me.	SA MA A D MD SD
3.	I often feel like giving up.	SA MA A D MD SD
4.	I feel comfortable about the changes life brings.	SA MA A D MD SD
5.	I feel empty inside.	SA MA A D MD SD
6.	I feel forgiven by God.	SA MA A D MD SD
7.	I feel as though no one much cares about what happens to me.	SA MA A D MD SD
8.	I feel there is much to hope for in my life.	SA MA A D MD SD
9.	I believe God helps us only if we do his will.	SA MA A D MD SD
10.	My life is meaningful and full.	SA MA A D MD SD
11.	I find it difficult to forgive myself for what I've done.	SA MA A D MD SD
12.	I feel others love and care for me.	SA MA A D MD SD
13.	There are times I wish I hadn't been born.	SA MA A D MD SD
14.	Prayer helps me find peace.	SA MA A D MD SD
15.	I don't know what I want out of life.	SA MA A D MD SD
16.	I am content with who I am.	SA MA A D MD SD
17.	I believe God does not allow those he loves to suffer.	SA MA A D MD SD
18.	I am not concerned about what the future holds for me.	SA MA A D MD SD
19.	I often feel as though God doesn't care about me.	SA MA A D MD SD
20.	I feel at peace about my problems.	SA MA A D MD SD
21.	I am good, because I am God's.	SA MA A D MD SD
22.	I feel God doesn't listen to my prayers.	SA MA A D MD SD

SDS Scoring Instructions

1. For items 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, and 21 the following values are assigned:

   SA = 1; MA = 2; A = 3; D = 4; MD = 5; SD = 6.

2. For items 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, and 22 assign these values:

   SA = 6; MA = 5; A = 4; D = 3; MD = 2; SD = 1.

3. Missing data can be dealt with in a number of ways. This study assigned missing values as 3.5. Five or more items omitted invalidated the scale.

4. The SDS full scale score is the sum of all of the item values. There are no subscales on the SDS.

5. The possible range of scores for the SDS is from 22 to 132.

6. Interpretation key: Higher scores on the SDS indicate respondent is reporting greater spiritual distress than those who receive lower scores.

Appendix F

Demographic Questionnaire (Sample 2)

Q1 What is your present age? _____ YEARS Today's date: _____

Q2 Your gender: (circle number of your answer)

1 FEMALE
2 MALE

Q3 Your present marital status: (circle number)

1 SINGLE (NEVER MARRIED)
2 FIRST MARRIAGE
3 SEPARATED OR DIVORCED
4 REMARRIED
5 LIVING TOGETHER
6 OTHER (PLEASE SPECIFY) _____

Q4 What was your approximate total family income from all sources, before taxes, in 1987? (circle number)

1 LESS THAN $10,000
2 $10,001 TO $20,000
3 $20,001 TO $30,000
4 $30,001 TO $40,000
5 $40,001 TO $50,000
6 OVER $50,000

Q5 What is the highest level of education that you have completed? (circle number)

1 DID NOT FINISH HIGH SCHOOL
2 COMPLETED HIGH SCHOOL (OR G.E.D.)
3 ATTENDED OR COMPLETED TRADE OR BUSINESS SCHOOL
4 SOME COLLEGE
5 COMPLETED COLLEGE
6 SOME GRADUATE WORK
7 A GRADUATE DEGREE

Q6 Which of the following best describes your racial or ethnic identification? (circle number)

1 BLACK (NEGRO)
2 CHICANO (MEXICAN AMERICAN)
3 NATIVE AMERICAN (AMERICAN INDIAN)
4 ORIENTAL
5 WHITE (CAUCASIAN)
6 OTHER (PLEASE SPECIFY) _____

Q7 Which religion, or faith, do you most closely identify with? (circle number)

1 CATHOLIC
2 JEWISH
3 PROTESTANT (PLEASE SPECIFY) _____
4 OTHER (PLEASE SPECIFY) _____
5 I DON'T IDENTIFY WITH ANY ORGANIZED RELIGION

Q8 How would you evaluate your own spiritual maturity? (circle number)

VERY IMMATURE 1 2 3 4 5 6 7 VERY MATURE

Q9 How would you evaluate your own spiritual well-being? (circle number)

VERY LOW 1 2 3 4 5 6 7 VERY HIGH

Today's date:_____

Q1 Which of the following statements comes closest to expressing what you believe about God? (circle the number of the response which best describes your beliefs)

1 I don't believe in God.
2 I don't know whether there is a God and I don't believe there is any way to find out.
3 I don't believe in a personal God, but I do believe in a higher power of some kind.
4 I find myself believing in God some of the time, but not at other times.
5 While I have doubts, I feel that I do believe in God.
6 I know God really exists and I have no doubts about it.
7 None of the above represents what I believe. What I believe about God is _____

_____

Q2 Which of the following statements comes closest to expressing what you believe about Jesus? (circle one number)

1 Frankly, I'm not entirely sure there ever was such a person as Jesus.
2 I think that Jesus was only a man although an extraordinary one.
3 I believe that Jesus was a great man and very holy, but I don't see Him as the Son of God any more than all of us are children of God.
4 While I have some doubts, I basically believe that Jesus is divine.
5 Jesus is the Divine Son of God and I have no doubts about it.
6 None of the above represents what I believe. What I believe about Jesus is _____

_____

Q3 Do you claim to be a Christian? (circle one number)

1 NO
2 YES, I respect and attempt to follow the moral and ethical teachings of Christ.
3 YES, I have received Jesus Christ into my life as my personal savior and Lord.
4 YES, I have received Jesus Christ as my personal Savior and Lord and I seek to follow the moral and ethical teachings of Christ.

Q4 If you answered YES to the above question (Q3), how many years have you been a Christian?

_____ YEARS

Q5 Which of the following statements comes closest to expressing what you believe about the Bible as the basis for your religious faith and belief? (circle one number)

1 Every person has the ability to determine what is true and I don't need the Bible for this.
2 The Bible is God's word and is the ultimate source of truth for me.
3 In addition to the Bible, religious experiences (e.g., speaking in tongues) are just as important.
4 In addition to the Bible, decisions by the church hierarchy (such as the Pope) are another source.
5 In addition to the Bible, writings or sayings by others are equally valid.
6 I'm not sure how to answer this.
7 None of the above state what I believe. What I believe about the Bible is _____

_____

Q6 How often do you participate in a religious activity of any type? (circle one number)

1 LESS THAN ONCE A YEAR
2 ONCE OR TWICE A YEAR
3 3 TO 11 TIMES A YEAR
4 1 TO 3 TIMES A MONTH
5 WEEKLY
6 MORE THAN ONCE A WEEK

Appendix G

Raw Data

Explanation of Raw Data

LINE ONE

Column 1 and 2: Sample Number

(Remaining columns contain raw scores for each of the 75 items)

Column 4: Absolute

Column 6: All-Wise

Column 8: Avenging

Column 10: Blessed

Column 12: Blunt

Column 14: Charitable

Column 16: Comforting

Column 18: Considerate

Column 20: Controlling

Column 22: Creative

Column 24: Critical

Column 26: Cruel

Column 28: Damning

Column 30: Distant

Column 32: Divine

Column 34: Eternal

Column 36: Everlasting

Column 38: Fair

Column 40: Faithful

Column 42: False

Column 44: Fatherly

Column 46: Feeble

Column 48: Firm

Column 50: Forgiving

Column 52: Gentle

Column 54: Glorious

LINE TWO

Column 4: Gracious

Column 6: Guiding

Column 8: Hard

Column 10: Helpful

Column 12: Holy

Column 14: Impersonal

Column 16: Important

Column 18: Inaccessible

Column 20: Infinite

Column 22: Jealous

Column 24: Just

Column 26: Kind

Column 28: Kingly

Column 30: Loving

Column 32: Majestic

Column 34: Matchless

Column 36: Meaningful

Column 38: Merciful

Column 40: Moving

Column 42: Mythical

Column 44: Omnipotent

Column 46: Omnipresent

Column 48: Omniscient

Column 50: Passive

Column 52: Patient

Column 54: Powerful

LINE THREE

Column 4: Protective

Column 6: Punishing

Column 8: Real

Column 10: Redeeming

Column 12: Righteous

Column 14: Severe

Column 16: Sharp

Column 18: Slow

Column 20: Sovereign

Column 22: Steadfast

Column 24: Stern

Column 26: Still

Column 28: Strong

Column 30: Supporting

Column 32: Timely

Column 34: Tough

Column 36: True

Column 38: Valuable

Column 40: Vigorous

Column 42: Warm

Column 44: Weak

Column 46: Worthless

Column 48: Wrathful

RAW DATA

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   6 4 4 6 6 1 6 1 6 6 6 6 4 6 6 6 6 6 6 6 6 6 6 1 6 6
   3 5 6 6 6 4 3 4 6 6 4 6 6 6 6 4 6 6 4 6 1 1 4
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Appendix H

Vita

JAMES DARRELL FISCHER

PERSONAL DATA

Address: 416 Cardinal Road
Lititz, PA 17542
Telephone: (717) 627-3633
Birth Date: October 6, 1960

Marital Status: Married
Height: 5'11"
Weight: 155
Health: Excellent

EDUCATION

Western Seminary, Portland, Oregon
Candidate for Psy.D., Clinical Psychology - Aug. 1990

Western Seminary, Portland, Oregon
M.A. in Clinical Psychology - May 1987

Cedarville College, Cedarville, Ohio
B.S. in Psychology - June 1983
B.S. in Behavioral Science - June 1983

Roger Bacon High School, Cincinnati, Ohio - June 1979

PUBLICATIONS

Dissertation: Reliability and Construct Validity of an Adjective Rating Scale of Concepts of God, 1990.

Construct Validity of the Spiritual Well-Being Scale: A Confirmatory Factor Analytis Approach. Ledbetter, M., Smith, L., Fischer, J., Vosler-Hunter, W., & Chew, G. 1989 (In Press)

PROFESSIONAL EXPERIENCE

Philhaven Hospital, Lebanon, Pennsylvania
APA Acredited Pre-doctoral Psychology Internship
August, 1989 to present

Provide individual therapy to inpatient and outpatient clients. Administer, score, and interpret psychological testing. Participate on a multidisciplinary inpatient treatment team. Co-lead inpatient group therapy. Act as auxiliary and leader of Psychodrama. Participate in weekly intern seminars and both group and individaul supervision.

Clackamas County Mental Health Center, Milwaukie, Oregon
Substance Abuse Therapist - April, 1987 to July, 1989
Lead both substance abuse education and therapy groups, working primarily with a court refered population. Complete initial evaluations on clients.

Hamilton County Department of Human Services, Cincinnati, Ohio
Social Worker - May, 1984 to July, 1985
Provide supervision and education to private childcare providers within a county program. Complete evaluations for possible new providers.

Social Service Aide - March, 1983 to May, 1984
Provide supervision, support, and counseling services at a residential facility for homeless men.

WESTERN SEMINARY
PRACTICUM EXPERIENCE

Substance Abuse Treatment
Clackamas County Mental Health Center
- September, 1986 to April, 1987
Co-lead group therapy and provide individual therapy.

Outpatient Mental Health
Elahan Center - June, 1987 to February, 1988
Provide individual therapy. Administer, score, and interpret psychological testing.

PROFESSIONAL AFFILIATIONS

American Psychological Association