RELIGIOUS PARTICIPATION AND BELIEF AS A FUNCTION OF
GENERALIZED EXPECTANCIES FOR INTERNAL VERSUS
EXTERNAL CONTROL OF REINFORCEMENT

by

Margaret Ellen Fowler

A Thesis Submitted to the Faculty of the
DEPARTMENT OF PSYCHOLOGY
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF ARTS
In the Graduate College
THE UNIVERSITY OF ARIZONA

1966
STATEMENT BY AUTHOR

This thesis has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Margaret Ellen Fowler

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

William L. Simmons

WILLIAM L. SIMMONS
Associate Professor of Psychology

3/17/66
ACKNOWLEDGMENTS

The author wishes to express her deepest appreciation to Dr. William Simmons for his invaluable assistance in the direction of this study and for his kind help and encouragement as the chairman of my graduate study program. Gratitude is also given to Drs. Vincent Tempone and William MacKinnon for their suggestions and assistance in the development and writing of this study.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF ILLUSTRATIONS</td>
<td>vi</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>vii</td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Instruments</td>
</tr>
<tr>
<td></td>
<td>Subjects</td>
</tr>
<tr>
<td></td>
<td>Procedure</td>
</tr>
<tr>
<td>RESULTS</td>
<td>23</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>29</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>39</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>82</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table                                                                                          Page
1. Means and standard deviation of scores for each of the scales . . . . . . . . . . . . . . . . . . 23
2. Pearson product-moment correlations among all six variables . . . . . . . . . . . . . . . . . . . 24
3. F test of linearity of regression of participation, orthodoxy, and dogmatism on I-E . . . . . 25
4. Chi square test for two correlated proportions for participation and orthodoxy among lower and upper quartiles of internals and externals . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 27
LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Religious participation as a function of I-E</td>
<td>26</td>
</tr>
</tbody>
</table>
ABSTRACT

One hundred and fifty undergraduate students, the majority being freshmen and sophomores, enrolled in introductory psychology classes at the University of Arizona completed anonymous questionnaire booklets containing tests which measured the following variables: belief in internal versus external control of reinforcement, participation in religious activities, attitude toward God, attitude toward church, and dogmatism.

Statistical analysis of the relationships among all six variables demonstrated the following findings: (1) There is a significant nonlinear relationship between belief in internal control of reinforcement and a high degree of religious participation. (2) There is a significant relationship between internal control and an appreciate attitude toward the church. (3) No relationships exist between the internal-external control variable and orthodox religious beliefs and attitudes toward God. (4) Dogmatism is significantly related to orthodox religious beliefs but not significantly related to the internal-external measure. (5) All measures of religiosity were interrelated.

The results of the study replicated previous empirical findings that belief in internal versus external
control is predictive of behavior in various life situations and demonstrated that I-E is predictive of the behavioral indices of religiosity but not of the more abstract, theological tenants of religious belief systems.
INTRODUCTION

The understanding and prediction of human behavior occupies a primary position in the aims and objectives of modern-day psychology. In his efforts to achieve this objective, the psychologist has investigated a myriad of variables. One variable which has received considerable attention as an influential determinant of behavior is that of reinforcement.

Obviously, reinforcement has been viewed from many different perspectives. One such perspective which has received considerable attention of late is that of the perceived causal relationship between behavior and the resulting reinforcement. On the one hand, a person may perceive that the reinforcements he receives are contingent upon his own behavior, skills, or attributes; conversely, he may believe that he has no control over his reinforcements, that these reinforcements are not contingent upon his behavior but rather are controlled by forces outside himself, e.g., luck, fate, powerful others, and so on.

These contrasting beliefs concerning the locus of control of reinforcement may be labeled internal or external control. An individual who perceives a causal relationship between his own behavior and the resulting reinforcements has a belief in internal control, whereas a person who
interprets reinforcements as being controlled by external forces holds a belief in external control (Rotter, in press). It is the examination of this belief system as a persisting, measurable personality variable and its relationships to behavior and other belief systems that forms the basis of the present study.

The conception of internal and external locus of reinforcement control is theoretically based on Rotter's social learning theory (1954, 1955, 1960). A comprehensive account of the theoretical foundations and relevant research pertaining to internal and external control as both personality and situational variables is given by Rotter (in press). Briefly, Rotter's social learning theory is focused upon four main variables (Rotter, 1954, 1955; Simmons, 1960):

Behavior Potential (BP): The potentiality of any behavior occurring in a given situation or situations as calculated in relation to any single reinforcement or set of reinforcements.

Expectancy (E): The probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations.

Reinforcement Value (RV): The degree of preference for any reinforcement to occur if the possibilities of their occurring were all equal.

Psychological Situation (S): The individual's meaningful environment at any given point in time.

The relationship between these variables is illustrated by the formula, $BP = f(E + RV)_S$, which can be read as follows:
The probability of the occurrence of any behavior is a function of the expectancy that a specific reinforcement will follow that behavior and the value of that reinforcement in a given situation.

The relationship between social learning theory and the internal-external (I-E) concept as a personality variable is best demonstrated through the relationship between I-E and expectancy (E). Once established, expectancy for a particular behavior-reinforcement sequence is either strengthened or weakened depending upon the occurrence or nonoccurrence of reinforcement following the specific behavior in question. However, an individual's perception of the locus of control of reinforcement modifies this expectancy, and the change in expectancy, in turn, alters the behavior potential.

A series of empirical findings (Phares, 1957; James, 1957; James and Rotter, 1958; Rotter, Liverant, and Crowne, 1961; Bennion, 1961; Holden and Rotter, 1962; Blackman, 1962) demonstrated the relationships between I-E, expectancy, and behavior potential. Rotter (in press) summarized these findings:

If subjects perceive a situation as one in which luck or chance or experimenter control determines the reinforcements, then they are less likely to raise expectancies for future reinforcement as high following success, than if they perceived the reinforcement to be dependent upon skill or their own efforts. Similarly, they are less likely to lower expectancies as much after failure. They are less likely to generalize
experiences of success and failure or expectancies of future reinforcement as much from one task to another similar task. The pattern of extinction is markedly different involving a reversal of the typical 100% versus 50% partial reinforcement findings. When perceived as skill determined, 100% reinforcement takes longer to extinguish than does 50% reinforcement. Finally, under conditions where they perceive the task as luck, chance or experimenter controlled they are more likely to raise expectancies after a failure or to lower them after a success. In general, under skill conditions behavior of a subject follows what might be considered a more logical or common sense model.

Individual differences in I-E develop as a result of two factors. First, expectancies can be generalized to a series of situations which are perceived as similar (consequently called generalized expectancies). Secondly, an individual's history of reinforcements contributes to and is affected by perceived locus of control of reinforcement. Attempts to measure individual differences in generalized expectancies for internal versus external control, i.e., I-E as a personality characteristic, led to the development of various scales. Phares (1957) laid the groundwork in this area; James (1957) soon revised Phares' scale, and the resulting test was referred to as the James-Phares scale. Liverant, in conjunction with Rotter, Seeman, and Crowne (Rotter, in press) extended the James-Phares scale by developing subscales measuring different areas and further validated the test. This revised version of the test is currently employed. The present study is consequently a test of the construct validity of the
internal-external control variable as measured by the I-E scale.

In Rotter's discussion of the theoretical background of the I-E concept, he laid the foundation of the present study's first hypothesis concerning I-E when he stated (Rotter, in press):

A generalized attitude, belief, or expectancy regarding the nature of the causal relationship between one's own behavior and its consequences might affect a variety of behavioral choices in a broad band of life situations. Such generalized expectancies in combination with specific expectancies act to determine choice behavior along with the value of potential reinforcements. These generalized expectancies will result in characteristic differences in behavior.

It has been previously hypothesized that internals are characterized by a greater involvement in a situation than externals. An internal who feels that he can control the outcome of events through his own behavior will be more involved in a situation than an external who perceives his behavior as independent of and/or ineffective in controlling his environment and its events. Thus, it logically follows that active participation in a situation will reflect the degree of involvement of the individual.

Empirical evidence tends to support this hypothesis that there is more involvement and/or participation in a situation on the part of internals as compared to externals. In a study by Seeman and Evans (1962), which attempted to show differences between internals and externals in trying
to control or better their life conditions, a significant
difference was found in patients in a tuberculosis hospital.
Internals had greater knowledge of their own conditions,
questioned the doctors and nurses more often, and showed
greater dissatisfaction about the amount of information
they were getting about their conditions. Seeman (1963)
found a similar difference in involvement in a situation as
reflected in the amount of information retained. He found
that internals, after being incidently exposed to informa­
tion concerning the administration of the reformatory,
parole, and so on, showed significantly greater retention
of this information than did externals. Significantly
greater participation by internals was again found in a
study by Gore and Rotter (1963) who compared the willing­
ness of internal and external students at a southern Negro
college to participate in civil rights movement activities,
such as taking part in a march on the state capitol or
joining a freedom rider's group. Similarly, Strickland
(1963) compared activists in Negro civil rights movement to
Negroes not involved in such issues and found a signifi­
cantly greater number of internals actively involved in the
civil rights movement. In a study by Phares (1965),
internals were found to be significantly better than
externals in changing attitudes of others. Seeman's study
(1964) of workers in Sweden again demonstrated greater
participation by internals. He found internals were more
likely to be union members, to be more active within a union, and to have a greater knowledge of political affairs. Rotter (in press) failed to find a difference between internal and external students in regard to signing or not signing petitions. However, he felt that the effect of classroom conditions influenced these results.

In light of the above evidence that involvement in a situation and/or active participation is affected by the generalized expectancies for internal versus external control of reinforcement, the present study hypothesized that there is a significant relationship between I-E and participation in religious activities. The selection of religion as the particular life situation reflecting the effects of individual differences in I-E as a personality variable was based on several considerations. The most prominent consideration was the possible etiological role of religion in the formation of internal-external attitudes. According to Rotter (in press): "Interviews with individual subjects in a college population at least suggest that religion may well have a role in the development of internal or external attitudes."

However, studies which have tried to find significant relationships between religious variables and I-E have failed to do so. Holden (1958) attempted to correlate the James-Phares scale measuring I-E and the McLean Inventory of Religious Concepts, which measures the
orthodoxy of religious beliefs, but found an insignificant relationship. Simmons (1959) found no significant differences in I-E among individuals of various religious denominations. However, the results from both studies may have been affected by an inadequate measure of the entire I-E dimension. The current, refined I-E measure should overcome this difficulty.

In addition, the failure of these two studies to find significant results may have been a function of the ways in which religiosity was measured. In both studies, the form of religiosity measured was concerned more with belief and attitude organizations than with behavioral indices of religiosity. Because I-E has been previously shown to affect behavior in many life situations, it should therefore also influence participation in religious activities. In spite of the insignificant results of the previous studies, the use of the improved I-E scale and of a behavioral measure of religiosity warranted the present study's attempt to demonstrate a significant relationship between I-E and religious participation.

It is assumed that internals will be characterized by greater participation in religious activities than externals. One of the postulates underlying this assumption is that, according to Rokeach (1965), most people have an extrinsic orientation toward religion; in other words, the orientation is utilitarian, self-centered, opportunistic,
and other-directed (Allport, 1959). Regardless of the individual's conceptualization of potential reinforcements from within the religious realm, whether they include a life after death, improvement of the present life situation, approval from significant others, etc., the individual may or may not believe that his personally valued religious reinforcements are contingent upon his religious activities. If a person has a generalized belief in internal control of reinforcements, he is much more likely to seek and expect his reinforcements by means of active religious participation; conversely, a belief in an external control of rewards will lead to less participation, for reinforcement is not seen as contingent upon behavior. In addition, because the church is a man made institution subject to change, internals, by participating more in church activities, are likely to feel that they may gain some control over their religious environment and that they may help govern and alter the dictates and functions of their churches. The opposite should be true of externals. Thus, the first hypothesis tested under the present study was stated as follows:

Hypothesis I: There is a significant relationship between internal control and a high degree of participation in religious activities.

In conjunction with the first hypothesis, it follows that internals rather than externals should have a
higher regard for the church as a religious institution. First, it provides a vehicle for religious activities; in other words, it is a means toward an end, the "end" being valued religious reinforcements. Secondly, Rotter (in press) stated in summary: "A series of studies provides strong support for the hypothesis that the individual who has a strong belief that he can control his own destiny is likely to be more alert to those aspects of the environment which provide useful information for his future behavior." The church as an institution attempts to provide religious enlightenment to the individual and/or advice about religious living. Thirdly, internals who feel they may control or change their religious environment are likely to have a more appreciative attitude toward the church than externals who feel that the governing and controlling aspects of the church are far removed from themselves. Thus, the second hypothesis to be tested was:

Hypothesis II: There is a significant relationship between internal control and a high regard for the church.

An examination of the relationship between I-E and religion may also be made through a comparison of both variables as belief systems. Various religious tenants combine to form a definable, measurable belief system. Burtt (1939, p. 11) described the systematization of religious beliefs when he stated, "There . . . are systems of religious belief sufficiently close knit internally so
that any belief which is a member of such a system tends to be allied, if not definitely to imply, certain beliefs about other matters of religious concern." That I-E is a belief system, rather than a mere preference for internal or external control or an actual control from within or without as conceptualized by Reisman (1954), was demonstrated by Rotter (in press). He defined I-E as a generalized belief or expectancy for internal or external control of reinforcement, based on the perception of causal relationships between behavior and reward.

The interrelatedness of belief and ideological systems, all interwoven into the intricate, unified fabric of personality has been discussed by Rokeach (1960). He concluded (Rokeach, 1960, p. 7) that personality can be viewed as "an organization of beliefs or expectancies having a definable and measurable structure" and that ideology may be conceived of, "insofar as it is represented within the psychological structure of the person, in exactly the same way, namely as an organization of beliefs and expectancies." Rokeach also maintained that each of the various systems of personality are combined by a unifying thread and consequently are related to and affect one another. Thus, it logically follows that religion and belief in internal or external locus of control or reinforcement are related, via their functions as belief and expectancy organizations.
In the present study's attempt to relate religion and I-E, the common denominators of both were examined. Both religion and I-E are concerned with the perception of causality. Rotter (in press) proposed: "It would seem that some relationship would exist between how the individual views the world from the point of view of internal versus external control of reinforcement and his other modes of perception of causal relationships." Both concepts may be related in an attitude or belief in fate or destiny. Pratt (1959, p. 31) defined religion as "an attitude toward the Determiner of Destiny." The external end of the I-E continuum denotes a belief in luck, which in turn is related to or similar to a general belief in fate (Veblen, 1899; Rotter, in press). Simmons (1959) found that external females are characterized by a fatalistic attitude toward a situation.

The origin, development, and continuance of religious belief may be based upon several factors. However, Pratt's review (1959) of authoritative religious belief lends greatest insight into common variables in I-E and religion. Fromm (1950, pp. 34-35) defined religion as the "recognition on the part of man of some higher unseen power as having control of his destiny, and as being entitled to obedience, reverence, and worship; the essential element is the surrender to a power transcending man."

Similarly, Jung (1955, p. 17) defined religious experience
as "the submission to powers higher than ourselves."

Correspondingly, belief in external control may develop from a perception of reinforcement under the control of powerful others, including theological forces.

From a belief in an external power having control over one's fate, feelings of helplessness, powerlessness, dependency, and passivity may ensue. In addition, these feelings of helplessness and powerlessness are found in orientations toward authoritative religions with the more orthodox teachings. Freud (1958) explained the development of religious belief as a defense against feelings of helplessness and as a desire for dependency. Scheiemacher (1928) defined religious belief as a feeling of absolute dependency. Seeman (1959) has linked feelings of powerlessness to the external end of the internal-external control dimension. Passivity can be related to both I-E and religious belief. A relationship between passivity and a belief in chance or luck has been proposed (Veblen, 1899; Merton, 1946; Rotter, in press). Fisher's discussion (1964) of his finding that the more religious an individual is the greater the probability that he will be acquiescent further proposed the relationship between I-E and religiosity. He stated (Fisher, 1964, p. 784):

There is evidence that the greater an individual's degree of acquiescence, the more likely he is to be conforming and to seek the approval of figures of authority. It is one of the goals of most religions to instill in the individual a sense of
respect for, and devotion to, a power greater than himself. Religious doctrine instructs the individual that he owes obedience to God. Such an attitude is analogous to the obedient orientation found in the acquiescent person.

The relationship between I-E and religious beliefs was further suggested in possible antecedent variables of I-E. Rotter (in press) proposed the function of external fatalistic determination by parents as an etiological factor of I-E. Nunn's finding (1964) that "coalitions with God" are efforts on the part of powerless parents to gain indirect control over their children in Rotter's suggestion (in press) that "religion may well have a role in the development of internal or external attitude" again indicate the plausibility of a relationship between I-E and religion.

In light of these proposed relationships between I-E and religion and the fact that both are measurable belief systems, the present study attempted to demonstrate this relationship by correlating internal and external attitudes, as measured by the present I-E scale, with orthodoxy of religious beliefs, measured by the McLean Inventory of Religious concepts, and with attitude toward God, using Thurstone's scale. Because traditional orthodox religious teachings emphasize externally-controlled events and fatalistic determination, subjects rating high on the external end of the I-E continuum should also rate high in religious orthodoxy. Those holding a belief in internal
control, feeling more or less responsible for their own actions, should score on the lower end of the religious orthodoxy dimension, having humanistic, agnostic, or atheistic beliefs. Thus, the following hypothesis was tested:

Hypothesis III: There is a significant relationship between external control and a high degree of religious orthodoxy.

Very similar to the above relationship is the hypothesis concerning attitude toward God. Since attitudes toward God comprise a part of the total religious belief organization and especially because God is traditionally conceptualized as the supreme controller of events, it seemed that a corresponding relationship between I-E and attitude toward God exists; in other words, externals should have a greater regard toward the concept of God than internals. Thus, the following hypothesis was made:

Hypothesis IV: There is a significant relationship between external control and a positive attitude toward God.

Since religiosity may be measured in several different ways and these measures are manifestations or patterns of the same general belief organization, it followed that the various aspects of religiosity should be interrelated. Photiadis and Johnson (1963) found a significant relationship between orthodox religious beliefs and religious
participation. Consequently, the following hypothesis was stated:

Hypothesis V: There are significant inter-relationships between religious participation, religious orthodoxy, attitude toward God, and attitude toward church.

An attempt was also made in the present study to examine the relationships between belief in internal or external control, religiosity, and Rokeach's concept (1960) of dogmatism (open versus closed mindedness). Dogmatism may be conceptualized as a unifying structural component common to all belief systems. According to Rokeach (1960, p. 398), "it is possible to investigate many spheres of activity--ideological, conceptual, perceptual, and esthetic--via the common structural bond that ties them all together in the person's belief system." Open and closed mindedness, or dogmatism, is a resistance to change of a total system of beliefs. One of the assumptions of dogmatism is that the closed mind is a passive mind and relies on external authority (Rokeach, 1960, pp. 22-23).

In addition to measuring the degree of open-closed mindedness, the present Dogmatism Scale provides a general measure of authoritarianism. Studies of the authoritarian personality (Adorno, Frenkel-Brunswik, Lewinson, and Sanford, 1950) have shown that rigidity in problem solving, greater tendency to premature closure in perceptual processes, and a greater tendency to be intolerant of
ambiguity all are characteristic of authoritarian individuals. Rokeach (1960) empirically found an effect of dogmatism on perceptual abilities, mainly synthesis. If open or closed mindedness does in fact affect perceptual processes, it should follow that an individual's perception of a causal relationship in the behavior-reinforcement sequence should be concomitantly influenced. Related to this proposition is the finding by Holden (1958); a significant positive relationship was demonstrated between the James-Phares scale and the F scale. Holden attributed the relationship to the common measurement of superstition and its resulting tendency to shift responsibility from within the individual onto outside forces beyond one's control. Therefore, the following hypothesis was tested:

Hypothesis VI: There is a significant relationship between external control and a high degree of dogmatism.

Past empirical evidence illustrates a positive relationship between orthodox religious beliefs and authoritarianism (Frenkel-Brunswik, 1950; Holden, 1958; Photiadis and Johnson, 1963). Dogmatism, in addition to measuring authoritarianism, also measures the rejection of disbelief systems and the rejection of people who disagree with "absolute" authority. Consistent with Rokeach's conception of open and closed mindedness as applicable to beliefs spread throughout the "left-right" continuum, Cline
and Richards (1965, p. 574), whose factor-analytic study found religious factors of Dogmatic Authoritarianism, proposed that "an unbeliever is just as likely to be authoritarian about his unbelief as a believer is to be authoritarian about the dogmas of his faith." Nevertheless, Rokeach (1960) concluded that there is a greater tendency for persons to the right of center, e.g., Catholics, to be more authoritarian than persons to the left of center, e.g., atheists. Rokeach (1965) hypothesized that the functional roles of particular religious institutions may well account for this discrepancy. They must not only spread a particular religious ideology but must also perpetuate themselves and defend against outside attack; in addition, persons are taught to make definite distinctions between believers and nonbelievers, members and nonmembers. To discover if the extended concept of authoritarianism, subsumed under the area of dogmatism, would continue to correlate with religious orthodoxy, the following hypothesis was proposed:

Hypothesis VII: There is a significant relationship between dogmatism and a high degree of religious orthodoxy.
METHODOLOGY

Instruments

The I-E scale developed by Liverant and described in the previous chapter was used to measure the locus of control variable. This scale is composed of twenty-nine forced-choice item-pairs, including six filler items (see Appendix A). Each item-pair contains a statement expressing belief in external control and a statement expressing belief in internal control; the item-pairs are equated for social desirability. The external items were scored. Thus, a low score indicates internal control, whereas a high score indicates external control.

The degree of religious participation was measured by a rating scale (see Appendix B) specifically designed for this study. It includes items scored 0 or 1, pertaining to church membership, financial and other forms of contribution to the church, and prayer. In addition, there were items which related to church service attendance, intra-church activities, and religious activities which were scored on a five-point scale, ranging in frequency-rating of "never" (0 points) to "always" (4 points).

McLean's Inventory of Religious Concepts (1952) was used as a measurement of religious orthodoxy (see Appendix C). The twenty-five question version of his scale was
employed and yielded scores (0-100) of religious belief, ranging from naturalistic humanism to orthodox Christianity. McLean's interpretation (1952) of obtained scores will be found in Appendix D.

Thurstone's scales (1931), Attitude toward God (Appendix E) and Attitude toward the Church (Appendix F), were used as indices of the subjects' regard toward each area. The Attitude Toward God scale, composed of twenty items, measures attitudes ranging from a strong atheistic attitude (scaled scores from 0-2.9) to a strong religious attitude toward God (scaled scores from 8.0 to 11.0). The Attitude toward Church scale has forty-three items and measures attitudes from a strong appreciation of the church (scaled scores from 0-2.9) to a strong depreciation of the church (values from 8.0 to 11.0). In both scales, scores from 5.0 to 5.9 indicate a neutral attitude.

As the sixth and final questionnaire, Rokeach's Dogmatism Scale (Rokeach, 1960) was administered to measure open or closed mindedness and also general authoritarianism. The scale is comprised of forty items; a total of 240 points is possible, the higher the score, the greater the closed mindedness and general authoritarianism (see Appendix G).
Subjects

The sample was composed of one hundred and fifty undergraduate volunteers enrolled in introductory psychology classes at the University of Arizona. There was a fairly equal representation of the two sexes in the sample, with 69 males and 81 females. The average age of the subjects was 19.9 years. The majority of the subjects were from the freshman and sophomore classes. The sample included 90 freshmen, 41 sophomores, 16 juniors, and 3 seniors. Empirical evidence (Havens, 1964; McLean, 1952) demonstrates that juniors and seniors experience religious conflict at deeper levels than do freshmen and sophomores, but continue to highly evaluate religion and religious symbols even as they move away from theological orthodoxy. Their requirement for congruent ratings of religious orthodoxy and regard for church and God was met by using a majority of college freshmen and sophomores in the sample.

A variety of religious faiths was represented in the sample. These faiths, ranging from atheists to Roman Catholics, adequately corresponded to McLean's classification (1952) of religious groups according to religious beliefs. The subjects' membership in or preferences for the various faiths are as follows: 20.6%—Roman Catholics; 12.6%—Jews (mainly reformed); 10%—Episcopalian; 9.3%—Lutherans; 8.6%—nonmembers with no preferences, agnostics, and atheists; 6%—Baptists, including Southern Baptists;
4%--Congregationalists; 1.3%--Mormons. The remaining five percent included Seventh Day adventists, Christian Scientists, and community churches.

Procedure

Questionnaire booklets, comprised of all six questionnaires, were distributed by the experimenter to the subjects during their normally assigned introductory psychology discussion sections. Each class contained an average of 15 to 25 students. Similar classroom conditions existed in the seven classes used in the study. The subjects were identified by the number on their questionnaire booklet and were requested not to sign their names.

Before the subjects began filling out the questionnaires, the experimenter explained that the study was an inventory of religious and social beliefs and attitudes; instructions concerning the proper procedure in filling out each questionnaire was given. Any questions arising during the 50 minute class period were answered by the experimenter. All questionnaires were administered within a week of each other. Scores of all subjects on all questionnaires will be found in Appendix H.
RESULTS

The sample's average scores on the various scales were similar to those previously obtained from other population samples in normative studies. Table 1 lists the means and standard deviations of scores for each of the scales.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF SCORES FOR EACH OF THE SCALES

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-E Scale</td>
<td>9.41</td>
<td>3.98</td>
</tr>
<tr>
<td>Religious Participation Scale</td>
<td>10.61</td>
<td>7.91</td>
</tr>
<tr>
<td>Inventory of Religious Concepts</td>
<td>59.28</td>
<td>23.30</td>
</tr>
<tr>
<td>Attitude toward God Scale</td>
<td>7.31</td>
<td>1.69</td>
</tr>
<tr>
<td>Attitude toward Church Scale</td>
<td>3.35</td>
<td>1.89</td>
</tr>
<tr>
<td>Dogmatism Scale</td>
<td>157.75</td>
<td>23.07</td>
</tr>
</tbody>
</table>

The mean score of 9.41 on the I-E scale may be compared with the means of samples of several populations, as summarized by Rotter (in press). These means range from 5.48 to 10.0.

Table 2 gives the Pearson product-moment correlations between the given variables. In the examination of
the positive and negative correlations, it is necessary to remember the dimensions within each scale, as previously mentioned.

**TABLE 2**

**PEARSON PRODUCT-MOMENT CORRELATIONS AMONG ALL SIX VARIABLES**

<table>
<thead>
<tr>
<th>Variable</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 (I-E)</td>
<td></td>
<td>-.109</td>
<td>-.048</td>
<td>-.048</td>
<td>.310***</td>
<td>.138</td>
</tr>
<tr>
<td>X2 (Participation)</td>
<td>-.109</td>
<td></td>
<td>.541**</td>
<td>.374**</td>
<td>-.450**</td>
<td>.120</td>
</tr>
<tr>
<td>X3 (Orthodoxy)</td>
<td>-.048</td>
<td>.541**</td>
<td></td>
<td>.633**</td>
<td>-.525**</td>
<td>.213**</td>
</tr>
<tr>
<td>X4 (God)</td>
<td>-.048</td>
<td>.374**</td>
<td>.633**</td>
<td></td>
<td>-.442**</td>
<td>.042</td>
</tr>
<tr>
<td>X5 (Church)</td>
<td>.310**</td>
<td>-.450**</td>
<td>-.525**</td>
<td>-.442**</td>
<td></td>
<td>-.032</td>
</tr>
<tr>
<td>X6 (Dogmatism)</td>
<td>.138</td>
<td>.120</td>
<td>.213**</td>
<td>-.032</td>
<td>.032</td>
<td></td>
</tr>
</tbody>
</table>

**p < .01

The t-test was employed to test the significance of each of the relationships in Table 2. It will be noted that the Pearson r between I-E and participation was insignificant. A F test of linearity of regression was calculated on the computed eta correlation of -.65 between I-E and participation (see Table 3) and demonstrated that the relationship is significantly nonlinear (F = 10.989; df = 139 and 9; p < .01). The genuineness and significance
of the relationship between I-E and participation was illustrated by an additional F test \( (F = 10.43; \text{df} = 1.39 \text{ and } 10; p < .01) \). Although the relationship between I-E and participation is significantly nonlinear, a true relationship between the two variables was demonstrated. Thus, Hypothesis I was accepted.

**TABLE 3**

F TEST OF LINEARITY OF REGRESSION OF PARTICIPATION, ORTHODOXY, AND DOGMATISM ON I-E

<table>
<thead>
<tr>
<th>Variables</th>
<th>Eta</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-E and participation</td>
<td>-.65</td>
<td>10.989**</td>
</tr>
<tr>
<td>I-E and orthodoxy</td>
<td>-.27</td>
<td>1.176</td>
</tr>
<tr>
<td>I-E and dogmatism</td>
<td>.23</td>
<td>.537</td>
</tr>
</tbody>
</table>

**p < .01**

The graphical plotting of the mean participation scores on each of the I-E scores (1-23) shows higher participation on the internal end of the I-E continuum and lower participation on the external end of the I-E dimension (see Figure 1). There is wide fluctuation of participation scores from the 1 to 12 range of I-E scores, taking the form of a gradual decrease which tapers off until a pronounced rise of scores in the I-E scoring category of 12. This sudden increase resulted from the highest
Figure 1

Religious participation as a function of I-E
participation scores of the entire sample falling into this category. From this point on, the graphical trend of the relationship takes the form of a sharply decreasing slope. It must be noted that no subject scored into the 20 or 22 category of the I-E dimension.

In venturing to understand the factors underlying the nonlinear relationship between I-E and participation, chi square was calculated on participation and I-E, using the upper and lower quartiles of the I-E range. An insignificant relationship was found. Next, chi square for two correlated proportions was calculated, comparing participation and orthodoxy with externals and with internals, again using quartiles of the I-E dimension. Here a significant chi square was found for externals but not for internals (Table 4).

**TABLE 4**

CHI SQUARE TEST FOR TWO CORRELATED PROPORTIONS FOR PARTICIPATION AND ORTHODOXY AMONG LOWER AND UPPER QUARTILES OF INTERNALS AND EXTERNALS

<table>
<thead>
<tr>
<th>I-E</th>
<th>High Orthodoxy and Low Participation</th>
<th>Low Participation and High Orthodoxy</th>
<th>Chi Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internals</td>
<td>9</td>
<td>3</td>
<td>3.00</td>
</tr>
<tr>
<td>Externals</td>
<td>14</td>
<td>2</td>
<td>9.00**</td>
</tr>
</tbody>
</table>

**p < .01**
Attitude toward the church and I-E is significantly correlated (Table 2), $r = .31$, $p < .01$. Since low scores indicate both a belief in internal control and a high regard for the church, the predicted direction of the relationship was demonstrated. Consequently, Hypothesis II was accepted.

The product-moment correlation of $-.048$ between I-E and orthodoxy (see Table 2) was insignificant. Table 3 illustrates that the computed eta correlation of $-.27$ between I-E and orthodoxy was again insignificant. Hypothesis III was thus rejected. In light of the insignificant correlation of $-.048$ between I-E and attitude toward God (Table 2), Hypothesis IV was also rejected. Significant interrelationships between all measures of religiosity were found. Consequently, Hypothesis V was accepted.

The product-moment correlation of $.138$ between I-E and dogmatism, as shown in Table 2, reached significance at the $.1$ level, indicating a trend in the predicted direction. Table 3 summarizes the attempts to find a nonlinear relationship between I-E and dogmatism; the computed eta of $.23$ was insignificant. Hypothesis VI was rejected. The relationship between orthodoxy and dogmatism was found to be significant, $p < .01$. Hypothesis VII was consequently accepted.
DISCUSSION

The results indicate that individuals having a generalized belief in internal control of reinforcements participate in religious activities to a significantly greater degree than do those believing in an external locus of control of reinforcement. These findings correspond with the results of other studies, cited in a previous chapter, which found that internals are more active participants in a variety of life situations. The results of the present study suggest that internals feel that their personally valued religious reinforcements are contingent upon and achieved through their active participation in religious activities; consequently, they seek these reinforcements through religious participation. On the other hand, externals tend to believe either that the allocation of rewards is entirely determined by forces outside themselves or that inherent religious reinforcements are not contingent upon their own behavior. Because they do not expect to receive religious rewards through their religious behavior, externals are characterized by low participation in religious activities. The results also suggest that internals feel that, through their participation in religious activities, they may gain some personal control over their religious environment and
within their churches. Conversely, externals feel that their participation will be ineffective in changing their churches and its functions. Thus, the acceptance of Hypothesis I implicates the applicability of I-E as a personality variable predictive of behavior within the religious realm. In addition, credence is lent to the concept of I-E as a valid theoretical derivative of social learning theory.

However, attempts must be made to explain the significantly nonlinear relationship between I-E and participation. Theoretically, a linear relationship should exist. Also, the significant linear relationship found between I-E and regard for the church and between regard for the church and participation suggest that participation should be a linear function of I-E. One possible explanation of the nonlinear relationship is illustrated by the chi square test between participation and orthodoxy for both internals and externals, using the lower and upper quartiles of the I-E dimension (see Table 4). The test was significant for externals, whereas it was insignificant for internals. For externals, there was significantly greater high orthodoxy and low participation as compared to low orthodoxy and high participation. This difference was not significant for internals. Since orthodoxy was found to be unrelated to I-E, the positive influence of orthodoxy on participation should have been
equalized throughout the entire I-E dimension. However, this does not appear to be the case; participation by externals is influenced less by orthodox beliefs than that of internals. Regardless of orthodox beliefs, subjects ranking in the external quartile of the I-E continuum are persistently and significantly characterized by lower participation.

A possible explanation for this finding is that denominations which stress highly orthodox beliefs yield less responsibility to its members in determining the churches' policies, functions and powers. Consequently, externals would be less inclined to participate in religious activities, since their expectancies for gaining some control over their religious environments are minimized. On the other hand, internals are likely to seek personal control, regardless of the seemingly impenetrable "powers" exerted by orthodox denominations.

Figure 1 illustrates the nonlinear relationship between I-E and participation and denotes the wide variance of mean participation scores within the middle 50% of the I-E distribution. Perhaps the deviation from a linear regression of participation scores in the middle 50% of the I-E distribution is a function of an altered influence of orthodox beliefs within this range. Highly orthodox beliefs could tend to stabilize participation of persons with average I-E scores until a sufficiently strong belief
in external control was able to exert its negative influence on participation.

One variable which might lend insight into the relationship between I-E and participation is the intrinsic-extrinsic belief continuum proposed by Allport (1959). The basic difference between an intrinsic believer and an extrinsic believer is illustrated in the functional relationship between the individual and religion. The intrinsic believer serves his religion, whereas religion serves the extrinsic believer. The present study accepted Rokeach's conclusion that the majority of individuals have an extrinsic orientation toward religion. Photiadis and Biggar (1962) found a significant, positive relationship between participation and extrinsic belief. A relationship may well exist between belief in internal or external control of reinforcement and intrinsic or extrinsic orientations toward religious belief, most probably in the direction of internals having more extrinsic orientations. Research into the interrelated effects of I-E, participation, and intrinsic-extrinsic religious orientations could help untangle the constituent factors of the nonlinear relationship between I-E and religious participation, especially within the 50% distribution of the I-E dimension.

A significant relationship was found between I-E and attitude toward the church. Persons who believe they have some personal control over the reinforcements they
receive have a more appreciative attitude toward the church than do persons believing in an external locus of control of reinforcement. These findings coincide with the significant relationship found between I-E and participation in religious activities. The church as an institution provides a means by which internals may seek religious rewards via their active participation in religious activities. The significant relationship found between I-E and attitude toward the church also supports previous findings that internals are much more perceptive to environmental cues and situations which enlighten the individual as to profitable future behavior. This increased awareness of the informative and instructive functions of the church as an institution is reflected in a greater appreciation for the church by internals. Another factor accounting for internals' high regard for the church rests upon the fact that the church is a man made institution which can be altered. Internals who feel that they are able to change the church through their own actions and participation are much more likely than externals to have a higher regard for the church.

The insignificant relationship between scores on the I-E Scale and McLean's Inventory of Religious Concepts correspond with the results of the study by Holden (1958). Although both I-E and religion may be conceptualized as belief organizations with equivalent or similar tenants,
such as fate, external powers, and causality, no relationship exists between the two belief systems. Not even the similar feelings, e.g., passivity, submission, powerlessness, and acquiescence, common to these beliefs were reflected in the insignificant relationship between I-E and religious beliefs. In light of the fact that behavioral indices of religiosity, i.e., participation in religious activities and regard for the church, were significantly correlated with belief in internal and external locus of control, it appears that I-E is primarily predictive of behavioral components of religion and is not related to the more abstract belief dimensions of religiosity.

Similarly, an insignificant relationship was found between I-E and attitude toward God. The prediction of the relationship between these two variables was based on corresponding factors comprising the predictions of Hypothesis III. It seemed that a belief in God as the supreme controller of events and the "determiner of destiny" would correspond with a belief in external control of reinforcement. Again it was found that I-E shows no relationship with the more abstract theological beliefs.

Significant, positive relationships were found among all the religious variables. The significant relationship between orthodox religious beliefs and religious participation replicated the findings of Photiades and
Johnson (1963). The basis of the interrelationships of the religious variables is logical and apparent.

The correlation between scores on the I-E scale and Dogmatism scale was not statistically significant; however, a trend in the predicted direction was observed. These findings were inconsistent with the significant, positive relationship Holden (1958) found between the James-Phares scale and the F scale. The Dogmatism scale proports to measure open and closed mindedness, a resistance to change of a total system of beliefs, and authoritarianism. Subsumed under the measurement of closed mindedness and authoritarianism are such variables as passivity, reliance on external authority, superstition, rigidity in problem solving, and premature perceptual closure. These factors are assumed to be characteristic of persons believing in external locus of control of reinforcement. However, the present study's failure to demonstrate a significant relationship between I-E and dogmatism could have resulted from the fact that the present study used scales different from those used in Holden's study. Consequently, different dimensions or subdivisions of the variables could have been measured. The present I-E scale was used rather than the James-Phares scale, and the Dogmatism scale replaced the F scale.

The statistical insignificance of this relationship found in the present study may possibly have resulted from
two additional factors. The first factor is related to the homogeneity of the sample. The second factor is concerned with the individual's history of past reinforcements. Past empirical evidence, as cited in an earlier chapter, has shown that resistance to extinction differs as a function both of belief in internal or external locus of control and of different reinforcement schedules, mainly 50% and 100%. Dogmatism, as a resistance to change, and resistance to extinction may be considered as related variables. Consequently, the failure to find a significant relationship between I-E and dogmatism could well have been affected by the complex interrelationships between belief in locus of control, open and closed mindedness, and past reinforcement schedules.

A significant, positive relationship was found between dogmatism and religious orthodoxy. These findings indicate that those who believe in the more orthodox religious tenants tend to be more authoritarian and more rejecting of other persons and ideas, whereas the converse is characteristic of those with fewer orthodox religious beliefs. The extended concept of authoritarianism continued to correlate with orthodox beliefs, as previously found by Frenkel-Brunswik (1950), Holden (1958), and Photiadis and Johnson (1963).

In summary, then, it appears that the major findings of the study are as follows: First, persons
believing in an internal locus of control of reinforcement are likely to be active participants in religious activities, for they feel (a) that their personally valued religious rewards are contingent upon their own behavior and (b) that they may gain some control over their religious environment through their religious participation. Individuals believing in an external control of reinforcements are likely to have little participation in religious activities since they believe (a) that their religious rewards are not contingent upon their own behavior and (b) that their religious participation is ineffective in governing or altering the policies and functions of the church. Secondly, internals are more appreciative than externals of the church because (a) it provides a vehicle through which religious rewards may be achieved (b) its function as an informative and instructive institution yields beneficial cues as to rewarding religious behaviors, and (c) it is a man made institution, subject to change via the active efforts of church members and representatives. The converse is true for externals. Thirdly, in conjunction with previous empirical findings that I-E is predictive of behavior in a variety of life situations and not of the more abstract, ideological organizations, the present study found that I-E is predictive of the behavioral indices of religiosity, i.e., participation in religious activities and attitude toward the church, and is not related to the
more remote, theological components of religious belief systems.
APPENDIX A

I-E SCALE
This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. Remove THIS ANSWER SHEET NOW. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and black-in the space under the number 1 or 2 which you choose as the statement most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to
each item independently when making your choice; do not be influenced by your previous choices.

REMEMBER

Select that alternative which you personally believe to be more true.

I more strongly believe that:

1. a. Children get into trouble because their parents punish them too much.
   b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.
   b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
   b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.
   b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
   b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.
   b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.
   b. People who can't get others to like them, don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.
   b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.
   b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b. Many times exam questions tend to be so unrelated to course work, that studying is really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
   b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decision.
   b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.
   b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.
   b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.
   b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
   b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
b. By taking an active part in political and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
   b. There really is no such thing as "luck."

19. a. One should always be willing to admit his mistakes.
   b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.
   b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.
   b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.
   b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.
   b. There is a direct connection between how hard I study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.

b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.

b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.

b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.

b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.

b. In the long run the people are responsible for bad government on a national as well as on a local level.
APPENDIX B

RELIGIOUS PARTICIPATION INVENTORY
We are conducting a study concerning religious preferences and attitudes. Please answer all questions as accurately and objectively as possible. You are not required to attach your name to the questionnaires, but be sure that all numbers of each questionnaire correspond with each other.

1. Sex: Male_________ Female_________

2. Age_________

3. Year in school_________

4. What is your father's occupation?_______________

5. What is your father's annual income?_______________

* 6. Are you a member of any religious denomination or sect?
   a. Yes (specify exactly, i.e., if Protestant, give specific denomination)_____________________
   b. No_________

7. If you are a member of a religious denomination or sect, how long have you been a member?_____________

* 8. If you do not belong to a religious denomination or sect, what is your religious preference?
   a. Name of preferred religious denomination or sect_____________________
   b. No preference_________

9. Which denomination does (did) your father belong to?

*Items scored
a. Name of denomination__________________________

b. Does not belong to, but prefers__________________________

c. None___________

10. Which denomination does (did) your mother belong to?
   a. Name of denomination__________________________

b. Does not belong to, but prefers__________________________

c. None___________

11. Have you ever belonged to a different denomination or sect?
   a. Yes (specify exactly)__________________________
      Year changed___________

b. No___________

12. If married, does your wife or husband belong to any religious denomination or sect?
   a. Yes (specify exactly)__________________________

b. No, but prefers__________________________

c. No preference___________

13. Is there a church or group of your denomination here in Tucson?
   a. Yes___________

b. No___________

14. If #13 is yes, which of the following religious services are offered in your church or organization?
   a. Sunday school___________

b. Morning services___________

c. Evening services___________
d. Weekly meetings________
e. Others (specify)________________________

*15. Of the services offered, which do you attend and how often?

a. Sunday school_______ c. Evening services____
   (1) Always_________ (1) Always_________
   (2) Frequently_______ (2) Frequently_______
   (3) Sometimes_______ (3) Sometimes_______
   (4) Infrequently______ (4) Infrequently______
   (5) Never___________ (5) Never___________

b. Morning services______ d. Weekly meetings____
   (1) Always_________ (1) Always_________
   (2) Frequently_______ (2) Frequently_______
   (3) Sometimes_______ (3) Sometimes_______
   (4) Infrequently______ (4) Infrequently______
   (5) Never___________ (5) Never___________

e. Other________________
   (1) Always_________ (1) Always_________
   (2) Frequently_______ (2) Frequently_______
   (3) Sometimes_______ (3) Sometimes_______
   (4) Infrequently______ (4) Infrequently______
   (5) Never___________ (5) Never___________

*16. If your church or group has activities or organizations other than religious services per se, what are they and how often do you attend?
<table>
<thead>
<tr>
<th></th>
<th>a. Youth or young adult group</th>
<th>b. Choir</th>
<th>c. Evangelistic group</th>
<th>d. District organization</th>
<th>e. Other (specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Always</td>
<td></td>
<td></td>
<td>(1) Always</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Frequently</td>
<td></td>
<td></td>
<td>(2) Frequently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Sometimes</td>
<td></td>
<td></td>
<td>(3) Sometimes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Infrequently</td>
<td></td>
<td></td>
<td>(4) Infrequently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Never</td>
<td></td>
<td></td>
<td>(5) Never</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*17. Is there any other way you participate in church or religious activities? Specify______________________________
*18. On the average, what percentage of your earnings do you give to the support of your church or organization each year?
   a. 20% or more
   b. 10 - 19%
   c. 5 - 9%
   d. 1 - 4%
   e. 0%

*19. Do you contribute to the support of the church in any way besides giving money, that is, labor, goods, etc.?
   a. Yes (specify how)
   b. No

20. Does your church or organization disapprove of:
   a. Wearing lipstick (?) Yes No
   b. Going to shows (?) Yes No
   c. Playing cards (?) Yes No
   d. Dancing (?) Yes No
   e. Other (specify) Yes No

21. If you have answered yes to any of the above, do you engage in any of these activities? Specify

*22. How often do you say grace at meals?
   a. Always
   b. Frequently
   c. Sometimes
23. When you were a child, how often did your parents say either morning or bedtime prayers?
   a. Always__________
   b. Frequently_______
   c. Sometimes________
   d. Infrequently______
   e. Never___________

24. Is prayer a significant part of your life now?
   Yes__________  No__________

25. Do you attend church or group services more often or less often now than you did before you entered college?
   a. More__________
   b. Same__________
   c. Less__________

26. Do you feel that religion is important in your life or not?
   a. Very important________
   b. Of some importance____
   c. Of no importance______

27. Is religion more important or less important to you now than it used to be?
   a. More important______
b. About the same____
c. Less important____

28. Do you think that religion is more important or less important in your life as compared to your father?
a. More important to you____
b. About the same________
c. Less important to you____

29. Do you think that religion is more important or less important in your life as compared to your mother?
a. More important to you____
b. About the same________
c. Less important to you____

30. Would you object if one of your children wished to marry a member of a different religious faith?
a. Would object strongly________
b. Would object some__________
c. Would not object___________
d. Depends on the other faith____

31. Of your closest friends, where do you see them?
a. Church or church organization______
b. Neighborhood or living quarters____
c. School__________________________
d. Nonreligious organizations________
e. Other (specify)____________________
APPENDIX C

INVENTORY OF RELIGIOUS CONCEPTS
If you agree with a statement, place a small "x" in Column A. If you disagree with a statement, place a small "x" in Column D. If for any reason you cannot agree or disagree with a statement, place a small "x" in Column UN (uncertain or no opinion expressed). For each statement, place your answers in either columns A, D, or UN on the lines in the columns which correspond with the statement.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. The work of the church could be just as effectively done by the schools and social agencies.................
2. I believe in God the Father Almighty, maker of heaven and earth.................
3. I believe that men working and thinking together can build a just society without supernatural help....
4. The writings of Plato, Aristotle, Dante, and Shakespeare are as much inspired as are the writings of Moses & Paul.........................
5. All miracles in the Bible are true...
6. In general, I consider church (or synagogue) attendance a waste of time.........................
7. Belief that in the end God's purposes will be achieved tends to destroy man's sense of social responsibility.
8. God is the greatest companion who shares with us the travail and tragedy of the world.
9. Jesus was born of the Virgin in a manner different from human beings.
10. The revelation of God's word in the Holy Scriptures is man's ultimate authority.
11. The attempt to believe in a supernatural being is a sign of a person's failure to accept responsibility for his own life.
13. The chief end of man is to glorify God and enjoy him forever.
14. I believe Hell is a form of existence in a future life.
15. The four gospels, Matthew, Mark, Luke and John, contain some legendary materials.
16. We live in a universe indifferent to human values

17. We were made for fellowship with God and our hearts are restless until they rest in him

18. Man is saved by the free gift of God's grace

19. The biblical writers were endowed with a divine wisdom which enabled them to foretell specific events in the distant future

20. The fall of man in the story of the Garden of Eden is a myth symbolizing the problem of good and evil in the world

21. Man is ultimately responsible to God

22. God is only a symbol of man's ideals

23. Jesus walked on water and raised the dead

24. The biblical story of creation is probably based on one of the early Babylonian myths

25. If I believed that any part of the Bible were unreliable I would no
longer have confidence in its moral and spiritual teachings..............
APPENDIX D

INTERPRETATION OF INVENTORY OF RELIGIOUS CONCEPTS
I. Christian Orthodoxy (65-100)

Persons in Group I accept and are at home in the traditional thought patterns of Christianity.

1. Those who have scores from 85-100 believe in miracles and prophecy. To them, the Bible is literally God's word.

2. Those having scores from 75-85 accept the historic Christian creeds and sacraments.

3. Those having scores from 65-75 interpret the Bible historically and the creeds in terms of symbols. They reject what they call 'naive liberalism'.

II. Religious Liberalism (35-65)

Persons in Group II believe in God and organized religion. They are, however, critical of many of the terms and methods used by traditional religious groups. Most persons stress social action. They accept science as a method.

4. Those having scores from 55-65 understand and appreciate the values of both liberal and conservative Christianity. They reject biblical literalism and question, varying degrees, the wisdom of using the older religious language.

5. Those having scores ranging from 45-55 consider themselves liberal Protestants.
6. Those having scores ranging from 35-45 define religion in broad generic terms. They object to the idea of special revelation and in particular to the belief that Christianity is a distinctive and final religion. Great religious teachers are to be found in all the historic religions. The basic issue is the concept of God.

III. Naturalistic Humanism (0-35)

Persons in Group III question or reject the concept of a personal God. They accept as dependable only that knowledge which can be substantiated by the scientific method. They are critical of and/or reject the traditional teachings and role of organized religion. They generally stress man and human values.

7. Those having scores between 25 and 35 desire to effect a synthesis between liberal religion and a naturalistic world view.

8. Those having scores between 15 and 25 stress scientific humanism. To them, the language, symbolism, and the approach of traditional religion, in particular all dependency upon the supernatural, are obstacles to man's quest for the good life.

9. Those having scores ranging from 0-15 hold a secular view of life, i.e., 'a position which maintains that the duties and problems of this
present life should be the sole object of man's concern.
APPENDIX E

ATTITUDE TOWARD GOD SCALE
Put a check if you agree with a statement.
Put a double check if you strongly agree with a statement.
+ Put a cross if you disagree with the statement.
? If you cannot decide about a statement, you may mark it with a question mark. Do not alter any statement.

( ) 1. There is a far better way of explaining the working of the world than to assume any God.

( ) 2. The ideas of God are so confusing that I do not know what to believe.

( ) 3. The idea of God means much to me.

( ) 4. I don't believe in God, but the idea has value to many people.

( ) 5. The idea of God is useless.

( ) 6. I wish I could believe in God but I don't.

( ) 7. I try to rule out all ideas of God, irrespective of tradition and sentiment.

( ) 8. Though at times I am perplexed, I still trust in the underlying reality of God.

( ) 9. Anyone who questions the reality and goodness of God cannot be honest in anything.

( ) 10. The idea of God gives me a sense of security.

( ) 11. I would openly reject the idea of God except for the feelings of parents and friends.

( ) 12. I fluctuate between believing and denying the reality of God.
( ) 13. The idea of God is the best explanation for our wonderful world.

( ) 14. I still hold on to my belief in God without any clear reason.

( ) 15. It is simple minded to picture any God in control of the universe.

( ) 16. I still believe in God because it is hard to give up an old habit.

( ) 17. I would rather die than give up my faith in God.

( ) 18. I have no patience with those who still cling to the stupid idea that there is a God.

( ) 19. The idea and belief in God is fundamental to my life.

( ) 20. The idea of God is mere superstition.
APPENDIX F

ATTITUDE TOWARD THE CHURCH SCALE
Check every statement with which you fully agree.

( ) 1. I think the church is a divine institution, and it commands my highest respect and loyalty.

( ) 2. I am neither for nor against the church, but I do not believe that church-going will do anyone any harm.

( ) 3. I feel the good done by the church is not worth the money and energy spent on it.

( ) 4. I regard the church as a monument to human ignorance.

( ) 5. I believe that the church is losing ground as education advances.

( ) 6. I feel that church is trying to adjust itself to a scientific world and deserves support.

( ) 7. The teaching of the church is altogether too superficial to be of interest to me.

( ) 8. I feel the church is the greatest agency of uplift in the world.

( ) 9. I think the church has a most important influence in the development of moral habits and attitudes.

( ) 10. I believe that the church is necessary, but like all other human institutions it has its faults.

( ) 11. I regard the church as a harmful institution, breeding narrowmindedness, fanaticism, and intolerance.
12. The church is too conservative for me, and so I stay away.

13. I believe in the ideals of my church, but I am tired of its denominationalism.

14. I believe that the church furnishes the stimulus for the best leadership of our country.

15. I'm not much against the church, but when I cannot agree with its leaders, I stay away.

16. I regard the church as hopelessly allied with reactionary forces.

17. I believe that the church practices the Golden Rule fairly well and has a consequent good influence.

18. I am interested only to the extent of attending church occasionally.

19. I feel the church is ridiculous, for it cannot give examples of what it preaches.

20. Sometimes I feel the church is worthwhile, and sometimes I doubt it.

21. My church is the primary guiding influence in my life.

22. I like the spiritual uplift I get from the church, but I do not agree with its theology.

23. My attitude toward the church is one of neglect due to lack of interest.
( ) 24. I believe the church is bound hand and foot with monied interests and does not practice its ideals.

( ) 25. I am sympathetic toward the church, but I am not active in its work.

( ) 26. I regard the church as a parasite on society.

( ) 27. I know too little about the church to express an opinion.

( ) 28. I regard the church as a parasite on society.

( ) 29. I am slightly prejudiced against the church and attend only on special occasions.

( ) 30. I do not think a man can be honest in his thinking and indorse what the church teaches.

( ) 31. There is much wrong in my church, but I feel it is so important that it is my duty to help improve it.

( ) 32. I feel that the church promotes a fine brotherly relationship between people and nations.

( ) 33. I feel that church is unreservedly stupid and futile.

( ) 34. I feel that church attendance is a good index of the nation's morality.

( ) 35. I feel that the church is petty, easily disturbed by matters of little importance.

( ) 36. In the church I find my best companions and express my best self.
( ) 37. I believe the church is non-scientific, depending for its influence upon fear of God and hell.

( ) 38. I am loyal to the church, but I believe its influence is on the decline.

( ) 39. It seems absurd to me for a thinking man to be interested in the church.

( ) 40. My attitude toward the church is best described as indifference.

( ) 41. I believe that anyone who will work in a modern church will appreciate its indispensable value.

( ) 42. The church deals in platitudes and is afraid to follow the logic of truth.

( ) 43. My attitude toward the church is passive, with a slight tendency to favor it.

( ) 44. I have a casual interest in the church.

( ) 45. I have nothing but contempt for the church.
APPENDIX G

DOGMATISM SCALE
The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many other people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark everyone. Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

+1: I AGREE A LITTLE
+2: I AGREE ON THE WHOLE
+3: I AGREE VERY MUCH

-1: I DISAGREE A LITTLE
-2: I DISAGREE ON THE WHOLE
-3: I DISAGREE VERY MUCH

1. A person who thinks primarily of his own happiness is beneath contempt.

2. The main thing in life is for a person to want to do something important.

3. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

4. Most people just don't know what's good for them.
5. In times like these, a person must be pretty selfish if he considers his own happiness primarily.

6. A man who does not believe in some great cause has not really lived.

7. I'd like it if I should find someone who would tell me how to solve my personal problems.

8. Of all the different philosophies which have existed in this world there is probably one which is correct.

9. It is when a person devotes himself to an ideal or cause that his life becomes meaningful.

10. In this complicated world of ours the only way we can know what is going on is to rely upon leaders or experts who can be trusted.

11. There are a number of persons I have come to hate because of the things they stand for.

12. There is so much to be done and so little time to do it in.

13. It is better to be a dead hero than a live coward.

14. A group which tolerates too much difference of opinion among its own members cannot exist for long.
15. It is only natural that a person should have a much better acquaintance with ideas he believes in than with ideas he opposes.

16. While I don't like to admit this even to myself, I sometimes have the ambition to become a great man, like Einstein, or Beethoven, or Shakespeare.

17. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary at times to restrict the freedom of certain groups.

18. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."

19. Most people just don't give a "damn" about others.

20. A person who gets enthusiastic about a number of causes is likely to be a pretty "wishy-washy" sort of person.

21. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

22. If given the chance I would like to do something that would be of great benefit to the world.

23. In times like these it is often necessary to be more on guard against ideas put out by certain
people or groups in one's own camp than by those in the opposing camp.

24. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.

25. Once I get wound up in a heated discussion I just can't stop.

26. There are two kinds of people in this world: those who are on the side of truth and those who are against it.

27. Man on his own is a helpless and miserable creature.

28. The United States and Russia have just about nothing in common.

29. In the history of mankind there have probably been just a handful of really great thinkers.

30. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.

31. The present is all too often full of unhappiness. It is the future that counts.

32. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what is going on.

33. Fundamentally, the world we live in is a pretty lonely place.
34. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

35. The worst crime a person can commit is to attack publicly the people who believe in the same thing he does.

36. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

37. Most of the ideas which get published nowadays aren't worth the paper they are printed on.

38. It is only natural for a person to be rather fearful of the future.

39. My blood boils whenever a person stubbornly refuses to admit he's wrong.

40. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.

+1: I AGREE A LITTLE
+2: I AGREE ON THE WHOLE
+3: I AGREE VERY MUCH

-1: I DISAGREE A LITTLE
-2: I DISAGREE ON THE WHOLE
-3: I DISAGREE VERY MUCH
APPENDIX H

DISTRIBUTION OF SCORES ON SIX SCALES FOR 150 UNIVERSITY OF ARIZONA ELEMENTARY PSYCHOLOGY STUDENTS
<table>
<thead>
<tr>
<th>I-E</th>
<th>Participation</th>
<th>Orthodoxy</th>
<th>Attitude toward God</th>
<th>Attitude toward church</th>
<th>Dogmatism</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>66</td>
<td>7.7</td>
<td>3.1</td>
<td>127</td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>76</td>
<td>8.3</td>
<td>1.3</td>
<td>146</td>
</tr>
<tr>
<td>2</td>
<td>22</td>
<td>66</td>
<td>5.5</td>
<td>2.0</td>
<td>177</td>
</tr>
<tr>
<td>3</td>
<td>24</td>
<td>56</td>
<td>7.6</td>
<td>2.9</td>
<td>147</td>
</tr>
<tr>
<td>3</td>
<td>27</td>
<td>78</td>
<td>8.3</td>
<td>3.1</td>
<td>137</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>48</td>
<td>5.5</td>
<td>5.2</td>
<td>169</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>20</td>
<td>4.5</td>
<td>4.3</td>
<td>176</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>28</td>
<td>3.6</td>
<td>3.4</td>
<td>187</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>66</td>
<td>8.6</td>
<td>2.7</td>
<td>185</td>
</tr>
<tr>
<td>4</td>
<td>19</td>
<td>60</td>
<td>7.6</td>
<td>1.8</td>
<td>139</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>34</td>
<td>5.5</td>
<td>5.1</td>
<td>152</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>28</td>
<td>5.5</td>
<td>3.4</td>
<td>156</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
<td>30</td>
<td>8.3</td>
<td>1.6</td>
<td>148</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>56</td>
<td>8.3</td>
<td>2.5</td>
<td>140</td>
</tr>
<tr>
<td>4</td>
<td>20</td>
<td>66</td>
<td>3.5</td>
<td>2.0</td>
<td>155</td>
</tr>
<tr>
<td>4</td>
<td>13</td>
<td>74</td>
<td>8.3</td>
<td>1.3</td>
<td>183</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>34</td>
<td>7.9</td>
<td>1.3</td>
<td>109</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>88</td>
<td>8.3</td>
<td>1.8</td>
<td>155</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>56</td>
<td>7.1</td>
<td>1.4</td>
<td>169</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>74</td>
<td>9.5</td>
<td>1.0</td>
<td>136</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>60</td>
<td>8.6</td>
<td>4.5</td>
<td>135</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>20</td>
<td>4.5</td>
<td>4.5</td>
<td>108</td>
</tr>
<tr>
<td>5</td>
<td>17</td>
<td>84</td>
<td>2.3</td>
<td>1.3</td>
<td>168</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>46</td>
<td>8.3</td>
<td>3.2</td>
<td>137</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>32</td>
<td>7.4</td>
<td>4.6</td>
<td>124</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>74</td>
<td>8.3</td>
<td>1.4</td>
<td>171</td>
</tr>
<tr>
<td>6</td>
<td>9</td>
<td>76</td>
<td>7.8</td>
<td>2.1</td>
<td>147</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>24</td>
<td>4.4</td>
<td>5.4</td>
<td>169</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>96</td>
<td>8.8</td>
<td>1.3</td>
<td>176</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>64</td>
<td>10.5</td>
<td>2.4</td>
<td>151</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>84</td>
<td>8.3</td>
<td>3.4</td>
<td>158</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>84</td>
<td>8.3</td>
<td>4.5</td>
<td>146</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>88</td>
<td>8.6</td>
<td>1.4</td>
<td>141</td>
</tr>
<tr>
<td>7</td>
<td>14</td>
<td>74</td>
<td>7.2</td>
<td>1.7</td>
<td>142</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>14</td>
<td>4.5</td>
<td>9.5</td>
<td>125</td>
</tr>
<tr>
<td>7</td>
<td>13</td>
<td>42</td>
<td>7.6</td>
<td>1.7</td>
<td>166</td>
</tr>
<tr>
<td>7</td>
<td>23</td>
<td>98</td>
<td>9.5</td>
<td>1.4</td>
<td>179</td>
</tr>
<tr>
<td>7</td>
<td>14</td>
<td>90</td>
<td>9.7</td>
<td>1.4</td>
<td>173</td>
</tr>
<tr>
<td>7</td>
<td>12</td>
<td>74</td>
<td>7.6</td>
<td>1.4</td>
<td>156</td>
</tr>
<tr>
<td>7</td>
<td>15</td>
<td>76</td>
<td>8.6</td>
<td>1.0</td>
<td>181</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>12</td>
<td>2.9</td>
<td>1.3</td>
<td>164</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>88</td>
<td>8.0</td>
<td>1.5</td>
<td>183</td>
</tr>
<tr>
<td>7</td>
<td>14</td>
<td>74</td>
<td>7.6</td>
<td>2.6</td>
<td>162</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>48</td>
<td>8.3</td>
<td>7.4</td>
<td>175</td>
</tr>
<tr>
<td>7</td>
<td>36</td>
<td>76</td>
<td>8.3</td>
<td>1.4</td>
<td>163</td>
</tr>
<tr>
<td>7</td>
<td>21</td>
<td>78</td>
<td>8.3</td>
<td>4.1</td>
<td>168</td>
</tr>
<tr>
<td>I-E</td>
<td>Participation</td>
<td>Orthodoxy</td>
<td>Attitude toward God</td>
<td>Attitude toward church</td>
<td>Dogmatism</td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>36</td>
<td>9.2</td>
<td>7.0</td>
<td>170</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>34</td>
<td>5.2</td>
<td>5.4</td>
<td>140</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>78</td>
<td>8.3</td>
<td>2.0</td>
<td>187</td>
</tr>
<tr>
<td>8</td>
<td>19</td>
<td>90</td>
<td>8.3</td>
<td>1.8</td>
<td>139</td>
</tr>
<tr>
<td>8</td>
<td>13</td>
<td>28</td>
<td>3.6</td>
<td>5.1</td>
<td>141</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>26</td>
<td>5.5</td>
<td>6.0</td>
<td>133</td>
</tr>
<tr>
<td>8</td>
<td>29</td>
<td>90</td>
<td>8.3</td>
<td>1.6</td>
<td>211</td>
</tr>
<tr>
<td>8</td>
<td>11</td>
<td>66</td>
<td>9.5</td>
<td>7.0</td>
<td>133</td>
</tr>
<tr>
<td>8</td>
<td>28</td>
<td>72</td>
<td>8.6</td>
<td>1.8</td>
<td>148</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>70</td>
<td>8.3</td>
<td>1.4</td>
<td>148</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
<td>70</td>
<td>8.3</td>
<td>2.7</td>
<td>130</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>40</td>
<td>6.9</td>
<td>2.4</td>
<td>161</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>34</td>
<td>5.5</td>
<td>2.0</td>
<td>148</td>
</tr>
<tr>
<td>8</td>
<td>12</td>
<td>78</td>
<td>8.6</td>
<td>2.0</td>
<td>145</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>76</td>
<td>8.0</td>
<td>1.8</td>
<td>135</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>78</td>
<td>8.3</td>
<td>4.2</td>
<td>191</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>82</td>
<td>8.3</td>
<td>1.7</td>
<td>174</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>42</td>
<td>7.8</td>
<td>3.1</td>
<td>202</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>78</td>
<td>9.2</td>
<td>2.2</td>
<td>168</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>76</td>
<td>9.7</td>
<td>1.8</td>
<td>167</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>74</td>
<td>8.6</td>
<td>1.6</td>
<td>185</td>
</tr>
<tr>
<td>9</td>
<td>12</td>
<td>78</td>
<td>8.3</td>
<td>1.6</td>
<td>150</td>
</tr>
<tr>
<td>9</td>
<td>11</td>
<td>80</td>
<td>7.8</td>
<td>2.7</td>
<td>165</td>
</tr>
<tr>
<td>9</td>
<td>14</td>
<td>58</td>
<td>6.4</td>
<td>2.5</td>
<td>147</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>22</td>
<td>6.4</td>
<td>6.8</td>
<td>107</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>54</td>
<td>7.2</td>
<td>4.2</td>
<td>121</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>46</td>
<td>8.3</td>
<td>5.5</td>
<td>177</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>20</td>
<td>5.5</td>
<td>8.3</td>
<td>184</td>
</tr>
<tr>
<td>9</td>
<td>18</td>
<td>80</td>
<td>8.3</td>
<td>1.4</td>
<td>186</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>82</td>
<td>8.6</td>
<td>2.0</td>
<td>166</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>52</td>
<td>7.2</td>
<td>5.9</td>
<td>126</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>52</td>
<td>5.5</td>
<td>4.8</td>
<td>172</td>
</tr>
<tr>
<td>9</td>
<td>6</td>
<td>70</td>
<td>2.3</td>
<td>4.6</td>
<td>162</td>
</tr>
<tr>
<td>9</td>
<td>19</td>
<td>98</td>
<td>9.5</td>
<td>1.6</td>
<td>102</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>28</td>
<td>8.3</td>
<td>5.2</td>
<td>144</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>54</td>
<td>7.2</td>
<td>4.2</td>
<td>141</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>92</td>
<td>10.5</td>
<td>2.0</td>
<td>172</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>14</td>
<td>3.2</td>
<td>8.5</td>
<td>148</td>
</tr>
<tr>
<td>10</td>
<td>16</td>
<td>72</td>
<td>8.3</td>
<td>4.0</td>
<td>189</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>24</td>
<td>5.5</td>
<td>5.7</td>
<td>163</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>34</td>
<td>6.4</td>
<td>5.8</td>
<td>154</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>20</td>
<td>4.5</td>
<td>5.2</td>
<td>143</td>
</tr>
<tr>
<td>10</td>
<td>16</td>
<td>82</td>
<td>8.6</td>
<td>2.6</td>
<td>196</td>
</tr>
<tr>
<td>10</td>
<td>14</td>
<td>56</td>
<td>7.8</td>
<td>3.3</td>
<td>163</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>54</td>
<td>8.3</td>
<td>4.3</td>
<td>154</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>72</td>
<td>8.3</td>
<td>2.0</td>
<td>176</td>
</tr>
<tr>
<td>I-E</td>
<td>Participation</td>
<td>Orthodoxy</td>
<td>Attitude toward God</td>
<td>Attitude toward church</td>
<td>Dogmatism</td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>34</td>
<td>7.4</td>
<td>2.1</td>
<td>177</td>
</tr>
<tr>
<td>10</td>
<td>24</td>
<td>94</td>
<td>9.4</td>
<td>1.3</td>
<td>136</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>14</td>
<td>7.1</td>
<td>1.2</td>
<td>181</td>
</tr>
<tr>
<td>10</td>
<td>9</td>
<td>72</td>
<td>7.4</td>
<td>2.7</td>
<td>178</td>
</tr>
<tr>
<td>10</td>
<td>14</td>
<td>70</td>
<td>8.6</td>
<td>3.1</td>
<td>163</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>20</td>
<td>5.5</td>
<td>4.5</td>
<td>150</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>14</td>
<td>8.3</td>
<td>5.4</td>
<td>134</td>
</tr>
<tr>
<td>11</td>
<td>16</td>
<td>80</td>
<td>9.4</td>
<td>2.0</td>
<td>143</td>
</tr>
<tr>
<td>11</td>
<td>7</td>
<td>66</td>
<td>8.3</td>
<td>3.5</td>
<td>158</td>
</tr>
<tr>
<td>11</td>
<td>6</td>
<td>64</td>
<td>8.3</td>
<td>4.2</td>
<td>172</td>
</tr>
<tr>
<td>11</td>
<td>6</td>
<td>72</td>
<td>8.4</td>
<td>1.9</td>
<td>162</td>
</tr>
<tr>
<td>11</td>
<td>24</td>
<td>56</td>
<td>7.2</td>
<td>4.9</td>
<td>147</td>
</tr>
<tr>
<td>11</td>
<td>14</td>
<td>40</td>
<td>6.9</td>
<td>5.5</td>
<td>148</td>
</tr>
<tr>
<td>11</td>
<td>13</td>
<td>60</td>
<td>8.3</td>
<td>2.0</td>
<td>135</td>
</tr>
<tr>
<td>11</td>
<td>9</td>
<td>76</td>
<td>6.4</td>
<td>3.8</td>
<td>119</td>
</tr>
<tr>
<td>11</td>
<td>9</td>
<td>32</td>
<td>7.1</td>
<td>2.4</td>
<td>126</td>
</tr>
<tr>
<td>11</td>
<td>21</td>
<td>80</td>
<td>9.1</td>
<td>2.7</td>
<td>166</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
<td>50</td>
<td>7.8</td>
<td>2.7</td>
<td>139</td>
</tr>
<tr>
<td>12</td>
<td>45</td>
<td>84</td>
<td>8.8</td>
<td>1.7</td>
<td>146</td>
</tr>
<tr>
<td>12</td>
<td>14</td>
<td>76</td>
<td>7.8</td>
<td>2.2</td>
<td>210</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
<td>68</td>
<td>7.1</td>
<td>5.4</td>
<td>172</td>
</tr>
<tr>
<td>12</td>
<td>13</td>
<td>72</td>
<td>8.8</td>
<td>1.4</td>
<td>166</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>58</td>
<td>7.1</td>
<td>5.5</td>
<td>139</td>
</tr>
<tr>
<td>12</td>
<td>25</td>
<td>80</td>
<td>8.3</td>
<td>1.9</td>
<td>214</td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>26</td>
<td>2.6</td>
<td>1.4</td>
<td>116</td>
</tr>
<tr>
<td>12</td>
<td>31</td>
<td>96</td>
<td>9.5</td>
<td>4.9</td>
<td>159</td>
</tr>
<tr>
<td>13</td>
<td>3</td>
<td>56</td>
<td>6.2</td>
<td>4.2</td>
<td>146</td>
</tr>
<tr>
<td>13</td>
<td>19</td>
<td>80</td>
<td>8.3</td>
<td>1.6</td>
<td>161</td>
</tr>
<tr>
<td>13</td>
<td>6</td>
<td>68</td>
<td>8.0</td>
<td>4.2</td>
<td>174</td>
</tr>
<tr>
<td>13</td>
<td>4</td>
<td>62</td>
<td>6.4</td>
<td>5.8</td>
<td>165</td>
</tr>
<tr>
<td>13</td>
<td>16</td>
<td>90</td>
<td>8.3</td>
<td>2.0</td>
<td>175</td>
</tr>
<tr>
<td>13</td>
<td>25</td>
<td>68</td>
<td>8.3</td>
<td>1.6</td>
<td>141</td>
</tr>
<tr>
<td>13</td>
<td>11</td>
<td>60</td>
<td>7.6</td>
<td>3.8</td>
<td>173</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>50</td>
<td>5.5</td>
<td>5.8</td>
<td>183</td>
</tr>
<tr>
<td>13</td>
<td>11</td>
<td>58</td>
<td>7.6</td>
<td>4.1</td>
<td>109</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>14</td>
<td>2.9</td>
<td>7.7</td>
<td>189</td>
</tr>
<tr>
<td>14</td>
<td>15</td>
<td>40</td>
<td>7.2</td>
<td>4.9</td>
<td>161</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>78</td>
<td>7.6</td>
<td>2.0</td>
<td>168</td>
</tr>
<tr>
<td>16</td>
<td>11</td>
<td>46</td>
<td>5.5</td>
<td>5.7</td>
<td>150</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>18</td>
<td>5.5</td>
<td>7.2</td>
<td>128</td>
</tr>
<tr>
<td>16</td>
<td>10</td>
<td>76</td>
<td>7.2</td>
<td>1.7</td>
<td>152</td>
</tr>
<tr>
<td>16</td>
<td>11</td>
<td>88</td>
<td>8.3</td>
<td>4.9</td>
<td>196</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>66</td>
<td>7.2</td>
<td>3.4</td>
<td>162</td>
</tr>
<tr>
<td>16</td>
<td>10</td>
<td>62</td>
<td>8.3</td>
<td>1.4</td>
<td>122</td>
</tr>
<tr>
<td>17</td>
<td>10</td>
<td>68</td>
<td>6.0</td>
<td>2.3</td>
<td>164</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>68</td>
<td>7.4</td>
<td>6.0</td>
<td>192</td>
</tr>
<tr>
<td>I-E</td>
<td>Participation</td>
<td>Orthodoxy</td>
<td>Attitude toward God</td>
<td>Attitude toward church</td>
<td>Dogmatism</td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>18</td>
<td>8</td>
<td>66</td>
<td>6.5</td>
<td>5.5</td>
<td>176</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>36</td>
<td>7.2</td>
<td>3.1</td>
<td>150</td>
</tr>
<tr>
<td>19</td>
<td>4</td>
<td>26</td>
<td>6.6</td>
<td>6.6</td>
<td>162</td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>28</td>
<td>5.5</td>
<td>6.3</td>
<td>218</td>
</tr>
<tr>
<td>23</td>
<td>6</td>
<td>40</td>
<td>6.5</td>
<td>6.2</td>
<td>158</td>
</tr>
</tbody>
</table>
REFERENCES


Rotter, J. B. Some implications of a social learning theory for the prediction of goal directed behavior from testing procedures. *Psychological Review*, 1960, 67, 301-316.


