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CORRELATION OF CERTAIN ATTITUDES WITH PERSONALITY TRAITS

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Kansas State Teachers College

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CORRELATION OF CERTAIN ATTITUDES WITH
PERSONALITY TRAITS

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A Thesis Submitted to the Graduate Division in
Partial Fulfillment of the Requirements for the Degree
of Master of Science

By
Roy U. Lane

KANSAS STATE TEACHERS COLLEGE

Pittsburg, Kansas

August, 1939

ACKNOWLEDGEMENTS

To those whose interest and efforts have shaped and inspired this study no small amount of gratitude is due: to Dr. J. A. Glaze under whose able and understanding direction this study was conducted; to Dr. C. W. Street and Dr. Ernest M. Anderson who gave valuable suggestions on the statistical and technical points of the study; to Dr. C. B. Pyle whose interest made possible the available tests given students in his, the Department of Psychology; and to my wife and others whose cooperation made this study possible.

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ABSTRACT

Purpose.--The purpose of this study is to determine how much, if any, relationship exists between certain attitudes in individuals and their composite percentile scores in intelligence tests, and certain traits in personality in a group of ninety-eight college freshmen at the Kansas State Teachers College of Pittsburg, Kansas.

Procedure.--The Pearson formula for determining the coefficient of correlation was used and correlations made on all the data obtained from testing forty-three freshmen men and fifty-five freshmen women. That is, attitudes toward the church, toward communism, and toward birth control were correlated with each of the personality traits of neuroticism, introversion-extroversion, self-sufficiency, and dominance-submission, and also with the intelligence test results.

Findings.--The main findings of this study were: (1) There was not a single high correlation, as correlations go, and none that meets the statistical demands for significance, (2) The results seem to agree with similar studies that have been made.

INTRODUCTION

The problem of determining how much, if any, relationship exists between certain attitudes in individuals and their composite percentile scores in intelligence tests and certain traits in personality has long been of vital interest to many in the field of learning. It is of particular interest to the student of character education and to those engaged in guidance, and more especially in teaching. Attitudes and personality traits play such an all-important part in our scheme of education today that it behooves us to know as much as we can, not only about what they are and how they affect one's total personality, but also how much, if any, each trait and each attitude affects each other.

This study was started about a year ago after several talks with Professors Dr. J. A. Glaze, and Dr. Paul Murphy of the Department of Psychology of the Kansas State Teachers College of Pittsburg, both of whom thought the problem presented a very worth-while and much needed study.

The Department of Psychology of The Kansas State Teachers College of Pittsburg administered to each of the beginning psychology students, in the autumn of 1939, a battery of tests. These consisted of: Bernreuter's Personality Test, L. L. Thurstone and E. J. Clave's Attitude toward the Church, L. L. Thurstone's Attitude toward Communism, and toward Birth Control. Scores in intelligence were secured from records

of freshman intelligence tests, administered upon entry to the College. So far as the writer was able to discover from experimental reports, no one has before carried on a like study.

These tests were scored by the writer. The Bernreuter tests proved to be the most difficult and tedious to score but after more than 300 hours the first four tests were scored for all of the freshmen. When the other tests on attitudes and intelligence were all scored it was found that there were ninety-eight freshmen for whom the writer had all of the test results. This thesis is based upon a treatment of these results.

CHAPTER I

THE PROBLEM

This problem is to find how much, if any, relationship exists between the attitudes toward church, toward birth control, and toward communism, and the personality traits of neuroticism, self-sufficiency, introversion-extroversion, and dominance-submission and the intelligence percentile scores in a group of ninety-eight college freshmen at the Kansas State Teachers College of Pittsburg.

Source of Material

All the material for this thesis was secured from the scores on tests administered by the Department of Psychology at the Kansas State Teachers College of Pittsburg, to its beginning psychology students.

Only the scores for those students that had been given all the tests are being used for this thesis. Many other freshman students had been given part of the tests, and these were all scored, but for reasons stated below, they are not included in this study.

A large number of upper classmen were also tested and the tests scored, and most of the correlations run, but the results, after adding the upper classmen, seemed not to differ materially from the results obtained from the freshmen only; so this study will be confined to scores of the

ninety-eight freshmen, but the results obtained from testing the larger group will be referred to occasionally.

Historical Background

The R. G. Bernreuter Personality Inventory was chosen by the Psychology Department because it was felt that this was the best battery of personality tests available, and for the same reason the three types of attitude tests were selected.

For a long time intelligence test results have been subject to statistical analysis, but not until comparatively recent times have personality qualities been objectively treated.¹

Sir Francis Galton, in 1883, should be credited with the earlier beginnings of testing in the field of biometry; but actually there was slow development in the personality phase of biometrical measurement until the World War, at which time Woodworth devised a test for "spotting" those emotionally unfit for warfare. Then in rather rapid succession there appeared many other tests, the best being those prepared by Cody, Matthews, Laird, Thurstone and Thurstone, and Bernreuter.² These earlier tests measured some particular phase of "neurotic tendencies".

¹Ross Stagner, Psychology of Personality, (New York: McGraw-Hill Book Company, 1937) p. 16.

²Robert G. Bernreuter, "The Imbrication of Tests of Introversion-Extroversion and Neurotic Tendency," The Journal of Social Psychology, V (May, 1934), 184.

Since the World War many tests have been devised to test personality and attitudes, and attempts have been made to statistically treat these as separate entities. We know that the total personality is an integration of many factors. But only by assuming them to be particular component parts of an integrated whole can we statistically handle the results. Upon this hypothesis this thesis is based.

Studies have been made in recent years that are somewhat similar (in many respects) to the one the writer has undertaken, but after careful perusal of the literature, no material was found along exactly the same lines as this study. Surely no study of a like nature has been reported where lower classmen have been employed as subjects, in a similar-sized institution.

G. W. Telford³ has presented evidence that leads us to believe that larger population centers harbor those of more antagonistic attitude toward the church than those from other areas. He compared results from a study of students at the University of North Dakota with results in somewhat similar circumstances from the University of Chicago. This is one of the findings of a study conducted at the University of North Dakota with 327 students of that institution.

Hilding B. Carlson, using 215 seniors at the University of Chicago, found a higher correlation coefficient for his

³"An Experimental Study of Some Factors in Influencing the Social Attitudes of College Students," The Journal of Social Psychology, V (August, 1934), 421.

group, of both sexes, for communism and birth control with intelligence than does this study. He also found that men believed less in the reality of God than did women, and that Catholics were more favorable toward the church, and Jews were more antagonistic toward the church than any other group.⁴

George W. Hartman conducted a study in which he ranked the attitudes for men and women in various divisions, namely: political, theoretical, economic, religious, aesthetic and social. He found from his study that sex determined largely the ranking in these attitudes. His findings showed that men ranked first politically and last in aesthetic appreciation while women ranked first in religion and last in theoretical analysis. In his article "Sex Difference in Valuational Attitudes",⁵ he concludes that:

What does seem to be a reasonable conclusion is that various goods of life are fused into different intensity patterns depending upon the nature of the organism in which they reside. And one very important item affecting the nature of the resulting value organization is the biological cleavage represented by the fact of sex.

Winfred B. Johnson⁶ made a study to determine the influence of mood on the same four measures of the Bernreuter

⁴Discussed more in detail on page 14.

⁵The Journal of Social Psychology, V (February, 1934), 106-112.

⁶"Influence of Mood on Personality Traits as Measured by Bernreuter," The Journal of Social Psychology, V (November, 1934), 515.

Personality test that are used in this study. He found that mood did not seem to alter the results, but concludes that the study was not at all conclusive because of the highly subjective phenomenon of mood, and the small number tested. He used fifteen graduate and undergraduate women at Stanford University. The plan was to have each subject take the Bernreuter test twice, each when in a depressed mood, and each when in a mood decidedly above normal.

Harold S. Carlson,⁷ in his thesis, "Information as a Factor Producing Certainty of Opinion," found that a feeling of certainty does not tend to vary uniformly with information, and beyond a certain point fails to increase with further increase in information. This work was done with selected students at the State University of Iowa. He also found that party bias, sex, intelligence and academic advancement seem to affect the relationship between a feeling of certainty and actual information, at least to some extent.

C. C. Miles⁸ ("Age and Certain Personality Traits of Adults") found that age is independent of certain personality traits. To quote:

Speed of performance which has a high positive correlation with intelligence in scores of children and young

⁷Unpublished Master's Thesis, State University of Iowa, June, 1929.

⁸Psychological Bulletin, IV (October, 1933), 570.

adults shows a definite decline with age in maturity. Persistence, however, correlates positively with age in adulthood. The four traits measured by the Bernreuter test: Neurotic, and introvert tendencies, self-sufficiency, and dominance are independent of age in adults. The results are based on a population of about 550 men and women of average or superior ability.

CHAPTER II

THE FINDINGS OF THIS STUDY

The attitude scores were obtained for the individual subjects by merely adding the scores of all the statements that had been indorsed. The summation of the weighted items divided by the number of statements indorsed is the average score. According to the instructions for using the attitude scale by L. L. Thurstone and E. J. Clave of the University of Chicago, these values range from zero to approximately eleven.⁹ Low scores in the test on attitude toward the church are interpreted as more favorable to the church, and the higher scores as a less favorable attitude.

The instruction sheets for scoring the attitude scale toward communism, and toward birth control show the reverse to be true.¹⁰ The lower scores indicate greater opposition to both communism and birth control.

The intelligence test scores were based on percentile ranking according to the standardized distribution of such percentiles accompanying the L. L. Thurstone Psychological Examination.

The R. G. Bernreuter Personality Inventory was used to secure the four factors of neuroticism, introversion-extroversion, self-sufficiency, and dominance-submission.

⁹APPENDIX.

¹⁰Ibid.

All the personality inventory scores are raw scores, and, although Bernreuter has compiled percentile scores for each of the traits, only the raw scores were used in these correlations. Percentile scores for psychological examination results were used because the writer felt that such scores would be more accurate. The total number of items in this particular intelligence test may change from year to year, and this is actually what happened in the 1938 edition.

Samples of all the tests, as well as sample correlations, and instructions for scoring, will be found in the appendix.

Correlations of Tests

Correlations were made for the men and women separately. The writer felt that the study would be of more value made in this way, because, for one thing, this had not been done previously, and, for another, sex differences in emotional traits might be highly significant. The Pearson formula for determining the coefficient of correlation was used and correlations made on all data obtained from testing forty-three freshman men and fifty-five freshman women. That is, attitudes toward the church, toward communism, and toward birth control were correlated with each of the personality traits of neuroticism, introversion-extroversion, self-sufficiency, and dominance-submission, and also with the intelligence test results.

The results of the correlations between the three

attitudes and the personality traits and intelligence are found in Table I. There was not a single high correlation, and none, I believe, meets the statistical demands for significance, except perhaps in the case of the correlation between communism and dominance-submission with women. This correlation was minus .217 with a P.E. of .048. There were other correlations which ran as high or higher than this particular one, but the probable error was too great for statistical significance.

The table of thirty correlations speaks rather emphatically for itself and since none indicate marked significance there is little room for comment. The results of these correlations seem to agree with other similar studies that have been made.

Hilding B. Carlson¹¹ used two attitude opinionaires, namely: communism and birth control, with 215 seniors at the University of Chicago. He found the correlation coefficient for intelligence with communism to be plus .330 with a P.E. of .060, and intelligence with birth control plus .211 with a P.E. of .064. One of these correlations is considerably more significant than was found in this study. I found intelligence and communism for men correlated minus .002, with a P.E. of .103 and for women minus .098, with a P.E. of .092 and for birth control with intelligence for men plus .292,

¹¹"Attitudes of Undergraduate Students," Journal of Social Psychology, V (May, 1934), 202.

TABLE I
CORRELATIONS OF ATTITUDES WITH PERSONALITY
TRAITS AND INTELLIGENCE

	Men		Women	
	r	P. E.	r	P. E.
CHURCH				
Intelligence	.207	.101	.096	.092
Neurotic	.216	.098	-.069	.090
Self-Sufficiency	.037	.104	.031	.082
Introversion-Extroversion	.280	.136	.275	.084
Dominance-Submission	.034	.104	.013	.063
BIRTH CONTROL				
Intelligence	.292	.099	.166	.091
Neurotic	.002	.103	-.067	.090
Self-Sufficiency	.065	.103	-.276	.073
Introversion-Extroversion	.066	.103	.131	.090
Dominance-Submission	-.132	.101	-.024	.086
COMMUNISM				
Intelligence	-.002	.103	-.098	.092
Neurotic	.190	.099	.128	.090
Self-Sufficiency	-.189	.147	-.073	.091
Introversion-Extroversion	.233	.097	.286	.084
Dominance-Submission	-.287	.095	-.217	.048

TABLE II
 MEAN SCORES
 TEURSTON ATTITUDE AND INTELLIGENCE
 98 COLLEGE STUDENTS

Test	Women			Men		
	Cases	Raw Score	Per cent rank	Cases	Raw Score	Per cent rank
Church	55	2.38		43	2.88	
Birth Control	55	7.20		43	6.40	
Communism	55	4.74		43	4.31	
Intelligence	53		.5374	41		.4983

MEAN SCORES
 BERNREUTER PERSONALITY TRAITS
 98 COLLEGE STUDENTS

Test	Women			Men		
	Cases	Raw Score	Per cent rank	Cases	Raw Score	Per cent rank
Neuroticism	55	-19.56	.62	43	-36.48	.64
Self-Sufficiency	55	-17.45	.34	43	- 6.09	.27
Introversion-Extroversion	55	- 9.13	.54	43	-41.2	.42
Dominance-Submission	55	+10.6	.39	43	+19.37	.35

with a P.E. of .099, and for women, plus .166 with a P.E. of .091. Carlson does not tell us from what year he secured his intelligence test results. The fact that he used seniors, and did not treat the results for men and women separately, might be part of the reason for the considerable differences in our results. There are, very likely, other factors not covered in this brief study that might also explain the discrepancies.

Other Factors Arising

The mean scores are given in Table II and afford a very interesting study. There are decided sex differences in all the mean scores, including intelligence, attitudes and personality traits. These sex differences are not great, for the most part, but are consistent, and seem to agree with the findings of Hilding B. Carlson and others.

In the attitude scores the women were found to be slightly more favorable to communism, more strongly in favor of birth control, and slightly more favorable toward the church than men.¹² This also agrees with the findings of George W. Hartman.¹³ The women were also found (perhaps due to mere chance) to be almost four percentile points higher in intelligence rating than were the men.

¹²L. L. Thurstone and E. J. Clave, Instructions for Using the Attitude Scales, (Chicago: The University of Chicago Press, 1931).

¹³"Sex Difference in Valuational Attitudes," Journal of Social Psychology, V (February, 1934), 106.

The mean scores for the personality traits showed that the men had a higher score than the women for neuroticism. This is interpreted by the R. G. Bernreuter¹⁴ scale to mean that the men are perhaps not so well balanced emotionally. The men's score for self-sufficiency showed they had more dislike for solitude than the women, and for introversion-extroversion the men were shown to be much higher on the extroversion end of the score. For dominance-submission, men scored higher on the dominance end of the scale than women.

The mean score for attitude toward communism for this group of freshmen was 2.38 for women, and 2.88 for men as compared to a mean score of 5.55 found by Hilding B. Carlson in his study at the University of Chicago with 215 seniors, both sexes.¹⁵

Carlson also found in his study that men believe less in the reality of God than women, and this has been substantiated by Leuba,¹⁶ Lunberg,¹⁷ and Jones.¹⁸ Our test results on

¹⁴Manual for the Personality Inventory, (Stanford University, Calif: Stanford University Press, 1935).

¹⁵Hilding B. Carlson, "Attitudes of Undergraduate Students," Journal of Social Psychology, V (May, 1934), 202.

¹⁶J. H. Leuba, "The Belief in God Immortality," (Boston: Sherman, French & Co., 1916), pp. xvii, 340. Cited in Journal of Social Psychology, V (May, 1934), 205.

¹⁷G. A. Lunberg, "Sex Difference on Social Questions," School and Society, XXIII (May 8, 1926), 595.

¹⁸E. S. Jones, "Opinions of College Students," Journal of Applied Psychology, X (1926), 427.

attitude toward the church, though not strictly comparable to a test on belief in Deity, seem to agree fairly well with Carlson's. According to our mean scores, both men and women fell within the group interpreted as "Favorable to the Church." The men came close to the border line of the next step, which was: "Favorable with some Reservations."¹⁹

Murphy, Murphy and Newcomb,²⁰ in their chapter, "Social Attitudes and Their Measurement," show that the women of the above-mentioned group would come under the group heading "regular church attenders," and the men, "frequent church attenders."

There were fifteen Catholics and three Jews in this group of ninety-eight tested. The Catholics show the strongest belief in the church, and have the least sympathy for birth control and communism, while the Jews seem to have less belief in the church and a greater belief in birth control and communism. This group represents a very small number, but my findings agree quite closely with those of Hilding B. Carlson.²¹ He found almost the same conditions using 51 Jewish, 114 Protestant, and 27 Catholic undergraduates at the University of Chicago.

¹⁹L. L. Thurstone and E. J. Clave, Instructions for Using Attitude Sheets, APPENDIX.

²⁰Experimental Social Psychology, Revised edition, (New York: Harper and Brothers, 1937), p. 911.

²¹"Attitudes of Undergraduate Students," Journal of Social Psychology, V (May, 1934), p. 202.

My group would probably be about three years younger than the 215 seniors used by Carlson, and, if it be true that learning affects one's attitude, then it might also be a factor worthy of consideration in comparing the results of both studies.

In order to increase the numbers, hoping for greater constancy, I added scores of all sophomores tested in the before-mentioned classes to the freshmen results. This made a grand total of 107 men and 95 women. The results were so highly similar to the results herein reported that we saw no particular significance in their inclusion. Also, the fifty-three students scoring higher in the intelligence test were studied separately. Correlations were made between intelligence test scores and personality factors, but again I found no significant differences.

Interpretations of Findings

All of the relationships discovered herein have such small coefficients that they would seem to justify the following interpretation: there is little discoverable relationship with our technique between these particular attitudes and traits, and between attitudes and intelligence, at least in this particular group. There are, no doubt, other factors, hidden to the writer, but more evident to mature experimenters, that confuse the situation. With multiple correlations we might get different and more significant results. There

are probably other techniques more revealing yet than multiple correlations. (These results might be statistically treated with the curvi-linear correlation technique, with which I am not thoroughly familiar).

There were a number of other problems arising as a result of this thesis. A few of these that seem to be most significant are as follows:

1. This problem could be extended by making multiple correlations. This would tend to disclose whether or not there are multiple factors involved in our study, which seems evident to us. Such a study would indicate the weight of these factors.

2. The same results could be treated with the curvi-linear correlation formula. This would reveal whether or not our results are of the linear regression type.

3. This study could be followed up in the senior years of these subjects, to show to what extent educational age (and, of course, the coordinate chronological age) affect the results.

4. A comparison could be made between the upper and lower quartiles with intelligence, any one trait of personality, or any result on attitude, and with school marks.

5. One could make case studies of home, health, educational advantages and other environmental factors that might influence the scores of the upper and lower quartiles. This might also include a follow-up study beyond the subjects' school years.

CHAPTER III

SUMMARY AND CONCLUSION

The technique used in this study is subject to numerous limitations which are familiar to most students of education. Our results in the main show a low or no degree of statistical reliability. The principal result consisted in finding very low correlations between certain attitudes on the one hand and certain personality traits and intelligence on the other.

The higher correlations were found in attitude toward the church and intelligence in men, church with neuroticism and church with introversion-extroversion in men; and church with introversion-extroversion in women. The highest of these was that for men, where attitude toward the church with introversion-extroversion showed a correlation of plus .280 with a P.E. of .136. The probable error was high in each case.

The highest correlations for birth control were as follows: (Men) in intelligence plus .292, with a P.E. of .099. (Women) in self-sufficiency, minus .276 with a P.E. of .073.

The attitude towards communism showed four correlations of over .200. (Men) for introversion-extroversion was plus .233 with a P.E. of .097. (Women) for the same trait was plus .286 with a P.E. of .084. (Men) for dominance-submission was minus .287 with a P.E. of .095. (Women) for the same trait was minus .217 with a P.E. of .048.

The coefficient of correlation between the three attitudes

and the four personality traits and intelligence are all low, and, allowing for possible error, we would seem justified in concluding (from this study) that there is no appreciable correlation between attitudes and personality traits.

It is not impossible that the small correlations found are of considerable importance to the whole of one's personality, but as correlations go they are small.

The most significant results found in the study can, perhaps, be more clearly shown by the following brief summary:

1. The attitude toward church and intelligence with men correlated more highly than with women.
2. The same can be said of neurotic tendency and attitude toward the church.
2. Attitude toward the church and introversion-extroversion are correlated fairly highly, and about equal in both sexes.
4. Intelligence and birth control for men correlated more highly than with women.
5. Birth control and self-sufficiency with women shows a fairly high negative correlation while the men show almost none.
6. The attitude toward communism and neuroticism showed a higher correlation with men than women.
7. The attitude toward communism and self-sufficiency with men showed a higher negative correlation than with women.
8. The attitude toward communism and introversion-extroversion showed a fairly high correlation, and about

equal for both sexes.

9. The attitude toward communism and dominance-submission showed a fairly high negative correlation for both sexes, the men slightly higher than the women.

The amount of generalization possible on the basis of a study of this sort depends, in part, upon its theoretical validity as typical of all situations in which attitudes and personality traits have previously been correlated. On the whole it seems safe to say that the findings of this study are in agreement with other studies of similar nature. It is apparent from this and other studies that one's personality is made up, and perhaps determined, by so many and varied factors that high correlations between small, and perhaps somewhat changeable, attitudes are not found as a general thing.

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APPENDIX

The Tests

Copies of R. G. Bernreuter's Personality Inventory,
L. L. Thurstone's Attitude toward church, toward birth
control, toward communism and intelligence tests and E. W.
Baxter's correlation chart.

THE PERSONALITY INVENTORY

By ROBERT G. BERNREUTER

PUBLISHED BY
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STANFORD UNIVERSITY, CALIFORNIA

Date.....

NAME..... Age..... Sex.....

Address.....

Name of school or business firm..... School grade or occupation.....

	B1-N	B2-S	B3-I	B4-D	F1-C	F2-S
Plus						
Minus						
Difference						
Percentile	%	%	%	%	%	%

H.S.—COLL.—ADULT

Based on norms

MALE—FEMALE

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The questions on this blank are intended to indicate your interests and attitudes. It is not a intelligence test, nor are there any right or wrong answers.

In front of each question you will find: "Yes No ?"

If your answer is "Yes," draw a circle around the "Yes." If your answer is "No," draw a circle around the "No." If you are entirely unable to answer either "Yes" or "No" to the question draw a circle around the question mark.

-
1. Yes No ? Does it make you uncomfortable to be "different" or unconventional?
 2. Yes No ? Do you day-dream frequently?
 3. Yes No ? Do you usually work things out for yourself rather than get someone to show you?
 4. Yes No ? Have you ever crossed the street to avoid meeting some person?
 5. Yes No ? Can you stand criticism without feeling hurt?
 6. Yes No ? Do you ever give money to beggars?
 7. Yes No ? Do you prefer to associate with people who are younger than yourself?
 8. Yes No ? Do you often feel just miserable?
 9. Yes No ? Do you dislike finding your way about in strange places?
 10. Yes No ? Are you easily discouraged when the opinions of others differ from your own?
 11. Yes No ? Do you try to get your own way even if you have to fight for it?
 12. Yes No ? Do you blush very often?
 13. Yes No ? Do athletics interest you more than intellectual affairs?
 14. Yes No ? Do you consider yourself a rather nervous person?
 15. Yes No ? Do you usually object when a person steps in front of you in a line of people?
 16. Yes No ? Have you ever tried to argue or bluff your way past a guard or doorman?
 17. Yes No ? Are you much affected by the praise or blame of many people?
 18. Yes No ? Are you touchy on various subjects?
 19. Yes No ? Do you frequently argue over prices with tradesmen or junkmen?
 20. Yes No ? Do you feel self-conscious in the presence of superiors in the academic or business world?
 21. Yes No ? Do ideas often run through your head so that you cannot sleep?
 22. Yes No ? Are you slow in making decisions?
 23. Yes No ? Do you think you could become so absorbed in creative work that you would not have a lack of intimate friends?
 24. Yes No ? Are you troubled with shyness?
 25. Yes No ? Are you inclined to study the motives of other people carefully?
 26. Yes No ? Do you frequently feel grouchy?
 27. Yes No ? Do your interests change rapidly?
 28. Yes No ? Are you very talkative at social gatherings?
 29. Yes No ? Do you ever heckle or question a public speaker?
 30. Yes No ? Do you very much mind taking back articles you have purchased at stores?
 31. Yes No ? Do you see more fun or humor in things when you are in a group than when alone?
 32. Yes No ? Do you prefer travelling with someone who will make all the necessary arrangements to an adventure of travelling alone?
 33. Yes No ? Would you rather work for yourself than carry out the program of a superior who respects you?
 34. Yes No ? Can you usually express yourself better in speech than in writing?
 35. Yes No ? Would you dislike any work which might take you into isolation for a few years, such as forest ranging, etc.?
 36. Yes No ? Have you ever solicited funds for a cause in which you were interested?
 37. Yes No ? Do you usually try to avoid dictatorial or "bossy" people?
 38. Yes No ? Do you find conversation more helpful in formulating your ideas than reading?

1. Yes No ? Do you worry too long over humiliating experiences?
2. Yes No ? Have you ever organized any clubs, teams, or other groups on your own initiative?
3. Yes No ? If you see an accident do you quickly take an active part in giving aid?
4. Yes No ? Do you get stage fright?
5. Yes No ? Do you like to bear responsibilities alone?
6. Yes No ? Have books been more entertaining to you than companions?
7. Yes No ? Have you ever had spells of dizziness?
8. Yes No ? Do jeers humiliate you even when you know you are right?
9. Yes No ? Do you want someone to be with you when you receive bad news?
10. Yes No ? Does it bother you to have people watch you at work even when you do it well?
11. Yes No ? Do you often experience periods of loneliness?
12. Yes No ? Do you usually try to avoid arguments?
13. Yes No ? Are your feelings easily hurt?
14. Yes No ? Do you usually prefer to do your own planning alone rather than with others?
15. Yes No ? Do you find that telling others of your own personal good news is the greatest part of the enjoyment of it?
16. Yes No ? Do you often feel lonesome when you are with other people?
17. Yes No ? Are you thrifty and careful about making loans?
18. Yes No ? Are you careful not to say things to hurt other people's feelings?
19. Yes No ? Are you easily moved to tears?
20. Yes No ? Do you ever complain to the waiter when you are served inferior or poorly prepared food?
21. Yes No ? Do you find it difficult to speak in public?
22. Yes No ? Do you ever rewrite your letters before mailing them?
23. Yes No ? Do you usually enjoy spending an evening alone?
24. Yes No ? Do you make new friends easily?
25. Yes No ? If you are dining out do you prefer to have someone else order dinner for you?
26. Yes No ? Do you usually feel a great deal of hesitancy over borrowing an article from an acquaintance?
27. Yes No ? Are you greatly embarrassed if you have greeted a stranger whom you have mistaken for an acquaintance?
28. Yes No ? Do you find it difficult to get rid of a salesman?
29. Yes No ? Do people ever come to you for advice?
30. Yes No ? Do you usually ignore the feelings of others when accomplishing some end which is important to you?
31. Yes No ? Do you often find that you cannot make up your mind until the time for action has passed?
32. Yes No ? Do you especially like to have attention from acquaintances when you are ill?
33. Yes No ? Do you experience many pleasant or unpleasant moods?
34. Yes No ? Are you troubled with feelings of inferiority?
35. Yes No ? Does some particularly useless thought keep coming into your mind to bother you?
36. Yes No ? Do you ever upbraid a workman who fails to have your work done on time?
37. Yes No ? Are you able to play your best in a game or contest against an opponent who is greatly superior to you?
38. Yes No ? Have you frequently appeared as a lecturer or entertainer before groups of people?
39. Yes No ? Are people sometimes successful in taking advantage of you?
40. Yes No ? When you are in low spirits do you try to find someone to cheer you up?
41. Yes No ? Can you usually understand a problem better by studying it out alone than by discussing it with others?
42. Yes No ? Do you lack self-confidence?
43. Yes No ? Does admiration gratify you more than achievement?
44. Yes No ? Are you willing to take a chance alone in a situation of doubtful outcome?
45. Yes No ? Does your ambition need occasional stimulation through contact with successful people?

84. Yes No ? Do you usually avoid asking advice?
85. Yes No ? Do you consider the observance of social customs and manners an essential aspect of life?
86. Yes No ? If you are spending an evening in the company of other people do you usually let someone else decide upon the entertainment?
87. Yes No ? Do you take the responsibility for introducing people at a party?
88. Yes No ? If you came late to a meeting would you rather stand than take a front seat?
89. Yes No ? Do you like to get many views from others before making an important decision?
90. Yes No ? Do you try to treat a domineering person the same as he treats you?
91. Yes No ? Does your mind often wander so badly that you lose track of what you are doing?
92. Yes No ? Do you ever argue a point with an older person whom you respect?
93. Yes No ? Do you have difficulty in making up your mind for yourself?
94. Yes No ? Do you ever take the lead to enliven a dull party?
95. Yes No ? Would you "have it out" with a person who spread untrue rumors about you?
96. Yes No ? At a reception or tea do you feel reluctant to meet the most important person present?
97. Yes No ? Do you find that people are more stimulating to you than anything else?
98. Yes No ? Do you prefer a play to a dance?
99. Yes No ? Do you tend to be radical in your political, religious, or social beliefs?
100. Yes No ? Do you prefer to be alone at times of emotional stress?
101. Yes No ? Do you usually prefer to work with others?
102. Yes No ? Do you usually work better when you are praised?
103. Yes No ? Do you have difficulty in starting a conversation with a stranger?
104. Yes No ? Do your feelings alternate between happiness and sadness without apparent reason?
105. Yes No ? Are you systematic in caring for your personal property?
106. Yes No ? Do you worry over possible misfortunes?
107. Yes No ? Do you usually prefer to keep your feelings to yourself?
108. Yes No ? Can you stick to a tiresome task for a long time without someone prodding or encouraging you?
109. Yes No ? Do you get as many ideas at the time of reading a book as you do from a discussion afterward?
110. Yes No ? Do you usually face your troubles alone without seeking help?
111. Yes No ? Have you been the recognized leader (president, captain, chairman) of a group within the last five years?
112. Yes No ? Do you prefer making hurried decisions alone?
113. Yes No ? If you were hiking with a group of people, where none of you knew the way, would you usually let someone else take the full responsibility for guiding the party?
114. Yes No ? Are you troubled with the idea that people on the street are watching you?
115. Yes No ? Are you often in a state of excitement?
116. Yes No ? Are you considered to be critical of other people?
117. Yes No ? Do you usually try to take added responsibilities on yourself?
118. Yes No ? Do you keep in the background at social functions?
119. Yes No ? Do you greatly dislike being told how you should do things?
120. Yes No ? Do you feel that marriage is essential to your present or future happiness?
121. Yes No ? Do you like to be with people a great deal?
122. Yes No ? Can you be optimistic when others about you are greatly depressed?
123. Yes No ? Does discipline make you discontented?
124. Yes No ? Are you usually considered to be indifferent to the opposite sex?
125. Yes No ? Would you feel very self-conscious if you had to volunteer an idea to start a club among a group of people?

Psychological Examination

For High School Graduates and College Freshmen

Prepared by L. L. Thurstone and Thelma Gwinn Thurstone
The University of Chicago

	Score	Percentile
Arithmetic.....		
Opposites.....		
Completion.....		
Artificial Language.....		
Analogies.....		
Gross Score.....		

Name.....
(Last name) (Given name or initials)

.....

.....

.....

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Arithmetic

DIRECTIONS: Write the answers to as many of these problems as you can in the time allowed.

You may use this space for figuring.

1. A hotel serves a mixture of 2 parts cream and 3 parts milk. How many pints of cream will it take to make 15 pints of the mixture?

Answer:pints

2. A man wishes to reach a station in $2\frac{1}{2}$ hours. If the station is 75 miles distant, how fast will he have to travel to reach it within the time required?

Answer:miles per hour

3. Henry can ride his bicycle 10 miles in the same time that he can walk $2\frac{1}{2}$ miles. At this rate, how far can he ride in the time that he could walk 6 miles?

Answer:miles

4. A tramping party is walking at the average rate of $3\frac{1}{2}$ miles per hour. They leave a certain town at 8 A.M. Taking one hour for lunch and rest they reach another town at 5 P.M. How many miles apart are the towns?

Answer:miles

5. If $\frac{3}{8}$ of a yard of silk cost \$3, how many yards can be bought for \$22.50?

Answer:yards

6. A man earns \$700 on a job requiring 28 weeks. If he works five days per week, what are his earnings per day?

Answer: \$.....per day

7. A and B divide \$432 in such a way that A has \$16 more than B. How much has B?

Answer: \$.....

8. A gentleman's estate is so divided that $\frac{3}{4}$ of it is woodland, $\frac{1}{8}$ of it is water, and the remaining 200 acres are under cultivation. How many acres are there in the estate?

Answer:acres

9. What is the cost of making a cement sidewalk 25 yards by 2 yards at $10\frac{1}{2}$ cents per square foot?

Answer: \$.....

10. Sugar costing $4\frac{7}{8}$ cents per pound is sold for $6\frac{1}{2}$ cents per pound. What is the profit on 800 pounds?

Answer: \$.....

Go to the next page. Do not wait for any signal.

You may use this space for figuring.

11. John studies his history lesson 40 minutes every day of his school year of 180 days. How many working days of 8 hours would this equal?

Answer:days

12. Mary crossed a lake in 2 hours, swimming half the time and rowing half the time. If she can row twice as fast as she can swim, how long would it have taken her to row the entire distance?

Answer:hrs.mins.

13. If 7 turns of a screw advance it $2\frac{4}{5}$ inches, how far will $8\frac{1}{2}$ turns advance it?

Answer:inches

14. How many parts of water must be added to 100 parts of a solution that contains 70% carbolic acid to make a 10% solution?

Answer:parts

15. The cost of furnishing two rooms is \$480. The cost of the smaller room is $\frac{7}{8}$ as much as the cost of the other. What is the cost of furnishing the larger room?

Answer: \$.....

16. Two men contract to paint a house for \$150. They agree to divide all money not needed for materials in proportion to the time each works. A furnishes \$57 worth of materials and works twice as many hours as B who furnishes no materials. How much of the \$150 does A receive?

Answer: \$.....

17. A man's income is \$2,000 per year. If he pays $\frac{1}{4}$ of his money for board, 15% for clothing, and $\frac{5}{12}$ of the rest for incidentals, how much does he save?

Answer: \$.....

18. What must be the marked price per shirt of shirts that cost \$18 a dozen so that the dealer may make a profit of $33\frac{1}{3}\%$ of cost and still allow a discount of 20% of the marked price?

Answer: \$.....

19. If 15% is lost by selling a bicycle for \$23.80, for how much should it have been sold to gain 15%?

Answer: \$.....

20. Helen can copy 9 pages in 2 hours, Sarah can copy $11\frac{1}{4}$ pages in 3 hours. How long will it take both together to copy $41\frac{1}{4}$ pages?

Answer:hours

Stop here. Wait for further instructions.

Opposites

DIRECTIONS: Each group of four words below contains *two words* which are the *same* or *opposite* in meaning. Look at the first two groups of words.

(a) many, ill, few, down. *Many* and *few* are *opposite*. Notice that 1 & 3 are written in *Opposite* column at the right.

(b) gay and happy are the *same*. 1 & 4 are written in the *Same* column.

You are to go through each group of words and find the *two words* which are the *same* or *opposite*, and write the corresponding numbers in the columns *Same* or *Opposite* at the right.

				Same	Opposite
(a) 1 many	2 ill	3 few	4 down	&	1 & 3
(b) 1 gay	2 last	3 long	4 happy	1 & 4	&
<hr/>					
1 febrile	2 grim	3 fertile	4 sterile	&	&
1 catlike	2 grave	3 dogged	4 solemn	&	&
1 fiendish	2 combustible	3 provable	4 fireproof	&	&
1 erroneous	2 ironic	3 correct	4 tragic	&	&
1 renowned	2 faithful	3 renewed	4 famous	&	&
1 expressed	2 elevated	3 precise	4 depressed	&	&
1 plethoric	2 irksome	3 thoracic	4 wearisome	&	&
1 discernible	2 dramatic	3 sundry	4 various	&	&
1 ferocious	2 mild	3 felicitous	4 petulant	&	&
1 groundless	2 baseless	3 earthly	4 basted	&	&
1 pugnacious	2 dogmatic	3 mercenary	4 peaceful	&	&
1 demented	2 mad	3 grievous	4 delinquent	&	&
1 conscientious	2 aware	3 sham	4 unconscious	&	&
1 hypocritical	2 consummate	3 penurious	4 sincere	&	&
1 wayward	2 elfin	3 baffling	4 elusive	&	&
1 superficial	2 current	3 wary	4 profound	&	&
1 ludicrous	2 farcical	3 pellucid	4 factional	&	&
1 solitary	2 exclusive	3 secluded	4 monarchic	&	&
1 squalid	2 culpable	3 bifurcated	4 blameless	&	&
1 silent	2 fast	3 resilient	4 inelastic	&	&
1 dietary	2 dietetic	3 diagrammatic	4 grammatical	&	&
1 unethical	2 ethnic	3 racial	4 equestrian	&	&
1 temporal	2 amorphous	3 social	4 crystallized	&	&
1 tumid	2 mnemonic	3 swollen	4 unforeseen	&	&
1 absolute	2 solvent	3 forceful	4 limited	&	&
1 insolvent	2 wonted	3 plentiful	4 customary	&	&
1 sinuous	2 baleful	3 sinful	4 winding	&	&

Stop here. Wait for further instructions.

Completion

DIRECTIONS: Think of the most appropriate word to complete each of the sentences. The number in each space indicates the number of letters in the most appropriate word for that space. Do not waste too much time on any one sentence, as you will be credited with one point for every word correctly supplied.

1. (3) is a fluid material used for writing and printing..... (3).....
2. An (5) is the missile used with a bow, a long slender shaft with a pointed head..... (5).....
3. A (7) is a legal dissolution of the marriage relation..... (7).....
4. The memoirs of one's life written by one's self are called an (13)..... (13).....
5. A (7) is a kind of cap used in sewing to protect the finger when pushing the needle.. (7).....
6. (5) is a term for woman used with reference to North American Indians..... (5).....
7. The loss of the power of voluntary motion is called (9)..... (9).....
8. The (5) is the part of the front of a coat continuing the collar..... (5).....
9. A (6) is a port, a portion of a body of water so protected as to afford a refuge for vessels..... (6).....
10. A male voice intermediate between the bass and the tenor is called a (8)..... (8).....
11. A (3) is a mongrel or inferior dog..... (3).....
12. An (7) is a word which is the opposite in meaning of another word in the same language..... (7).....
13. An (7) is an inscription on or at a tomb or grave in memory of the one buried there... (7).....
14. A (5) is a covered stall or temporary structure in a fair, polling place, etc..... (5).....
15. (7) is perfume from spices or gums burned in religious rites..... (7).....
16. The taking of an exorbitant rate of interest is called (5)..... (5).....
17. An (7) is a strip of land connecting two larger portions of land..... (7).....
18. A (5) is a prayer or invocation for injury to come upon one..... (5).....
19. An (6) is that which is produced by an agent or cause; an immediate result..... (6).....
20. A bodily motion or posture intended to express or emphasize something is a (7).... (7).....
21. (13) is the art of speaking in such a way that the voice appears to come from a source other than the speaker's vocal organs..... (13).....
22. A (5) is a contract by which one conveys real estate for life or for a term of years... (5).....
23. The fat of whales or other large marine animals is called (7)..... (7).....
24. (9) is the act or practice of feigning to be what one is not, especially the false assumption of an appearance of virtue or religion..... (9).....

Go to the next page. Do not wait for any signal.

25. A (7) is a person given as a pledge..... (7).....
26. (6) is excessive love and thought of self..... (6).....
27. The edible portion of a nut, within the shell is called the (6)..... (6).....
28. By (10) is meant the estimation in which one is held..... (10).....
29. A (7) is a storehouse for grain, especially after it is threshed or husked..... (7).....
30. A native lump of precious metal is called (6)..... (6).....
31. A (6) is one who wilfully destroys or mars anything beautiful, as a work of art..... (6).....
32. A place, as a house, for keeping birds confined is an (6)..... (6).....
33. The branch of zoology that treats of insects is called (10)..... (10).....
34. A (7) is a supplement to a will, modifying it in some respect..... (7).....
35. (14) is the passing of the soul at death into another body..... (14).....
36. A (4) is a long sharp tooth by which an animal's prey is seized and held..... (4).....
37. (7) is the offense of attempting by overt act to overthrow the government of the state to which the offender owes allegiance..... (7).....
38. (5) is the compassionate treatment of the unfortunate..... (5).....
39. A (5) is a sudden thrust, as with a sword..... (5).....
40. The coarser kinds of vessels, ornaments, etc. made of baked clay are called (11)..... (11).....

Stop here. Wait for further instructions.

Artificial Language

Read the vocabulary and rules of the artificial language given below. Do not try to memorize the vocabulary or forms but consult them freely while translating the sentences on the following page.

VOCABULARY

I.....de
me.....dert
he.....ke
him.....kert
that.....em

is.....gat
act.....prigo
characterize.....murno
energize.....slego
succeed.....balto

RULES

PLURALS: Add "ai." Only nouns and pronouns have plurals.
PAST TIME: Place "fi" before the verb.
FUTURE TIME: Place "la" before the verb.
NOUNS: Substitute "ur" for "o" ending of verb.
ADJECTIVES: Substitute "et" for "o" ending of verb.
ADVERBS: Substitute "ob" for "o" ending of verb.

EXAMPLES

we.....deal
acted.....fprigo
will act.....laprigo
action.....prigur
active.....priget
actively.....prigob

Go to the next page. Do not wait for any signal.

DIRECTIONS

All the words in sentence A below are correctly translated, so plus signs (+) have been put in each column at the right, thus, +, +, +. The first word in sentence B is wrong. A minus sign (-) in column 1 at the right indicates that "they" is wrong. It is not the translation of "ke." The second and third words are correctly translated so plus signs (+) are placed in columns 2 and 3.

Go through the sentences marking a (+) sign for words correctly translated and a (-) sign for words incorrectly translated.

SENTENCES	TRANSLATIONS	1	2	3
A. That was characteristic	Em figat murnet	---+---	---+---	---+---
B. Ke lagat priget	They will be active	---+---	---+---	---+---

1. That is energy	Em gat slegob	-----	-----	-----
2. Ke figat sleget	He will be energetic	-----	-----	-----
3. They acted successfully	Kertal fiprigo baltet	-----	-----	-----
4. Baltur gat prigur	Success is action	-----	-----	-----
5. Energy will be successful	Slegur ladert priget	-----	-----	-----
6. Slegur murno prigur	Success characterizes action	-----	-----	-----
7. Energetic characters succeed	Slego murnur balto	-----	-----	-----
8. Em slegur labalto	That energy will succeed	-----	-----	-----
9. Action characterized us	Baltur fimurno deal	-----	-----	-----
10. Emal prigural labalto	Those actions succeeded	-----	-----	-----
11. They acted energetically	Kertal laprigo slegob	-----	-----	-----
12. Baltet murnural prigo	Successful characters act	-----	-----	-----
13. Success energized him	Baltur fiprigo ke	-----	-----	-----
14. Priget murnur labalto	Active characters succeed	-----	-----	-----
15. They will act successfully	Keal fiprigo baltob	-----	-----	-----
16. Deal lagat baltet	That will characterize them	-----	-----	-----
17. Success characterizes energy	Baltur murno slego	-----	-----	-----
18. Em lamurno kertal	We shall be successful	-----	-----	-----
19. Energy acts successfully	Slegur gat baltob	-----	-----	-----
20. Keal laprigo slegob	They acted energetically	-----	-----	-----
21. He succeeded characteristically	Kert fibalto murnob	-----	-----	-----
22. Baltur laslego kertal	Success will energize them	-----	-----	-----
23. Energy is active	Slego gat prigo	-----	-----	-----
24. Em fimurno kertal	That characterized him	-----	-----	-----
25. Those actions succeed	Em prigur balto	-----	-----	-----
26. Sleget murnur prigo	Energetic characters act	-----	-----	-----
27. I shall act energetically	Deal laprigo sleget	-----	-----	-----
28. Baltur laslego dert	Successes energized me	-----	-----	-----
29. Energetic action succeeds	Murnet prigur slego	-----	-----	-----
30. Murnet prigural slego	Successful actions energize	-----	-----	-----

Stop here. Wait for further instructions.

Analogies

DIRECTIONS: Look at sample A below. The first figure is a large circle. The second figure is like the first except that it is smaller. The third figure is a large square. Now look at the figures to the right in the same row. The small square is underlined. This indicates that a small square has the same relation to a large square as a small circle has to a large circle.

Now look at sample B. The large white square is underlined. In this case, the underlined figure is larger and of the opposite color as compared with the third figure. Thus, the underlined figure must be related to the third figure in every way that the second figure is related to the first.

In each row of the test you are to **UNDERLINE THAT FIGURE WHICH IS RELATED TO THE THIRD FIGURE THE SAME WAY AS THE SECOND FIGURE IS RELATED TO THE FIRST FIGURE.** Underline one and only one figure in each row.

Samples			
A			
B			

1		
2		
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Stop here. Wait for further instructions.

L. L. THURSTONE AND E. J. CHAVE
The University of Chicago

INSTRUCTIONS FOR USING THE ATTITUDE SCALE

(Revised February 1930)

How to Use the Scale

The scale for measuring attitude toward the church can be used either in groups or individually. It is not necessary that the subject be supervised when he fills in this scale because it is in no sense an examination. Therefore it is legitimate for the subject to take the blank home, if he likes, and to fill it in at his leisure. The following instructions apply especially to the situation in which the scale is given to a group of subjects simultaneously.

Distribute the blanks, one to each person. Each subject is asked merely to read the statements, and to check every statement with which he agrees. This requires usually about fifteen minutes. Ask the subjects to make sure that they have read every one of the forty-five statements before returning the blanks. Subjects may read the statements in any order and as many times as may be convenient. There should be no time limit on this scale because it is in no sense a speed performance. Speed does not count.

The subject should be encouraged to indorse as many statements as he wishes but if a statement has been altered it will be ignored in scoring the results. This fact should be explained. Each statement must be indorsed or left blank without alterations. If any alteration is made in a statement the indorsement would not be comparable with those of other people and consequently for the present purpose it has no value.

There should be no discussion about these statements before the blanks are filled in. After the forms have been checked and scored there is of course no harm in discussing the opinions at length. At that time the statements may be altered and discussed at will. But one should be careful that each subject has the opportunity to read and indorse these opinions uninfluenced by previous discussion about this particular list of opinions.

On the title-page there is a list of items that you may want the subjects to fill in for the purpose of classifying the results. The use of the classifications on the title-page is of course entirely optional with the experimenter. They may be left blank entirely at the option of the one who conducts the test. The last two lines on the title-page are included for your convenience in asking for additional information that is not already listed. It may serve purposes of local classification of various kinds.

If you use these blanks with a large group of individuals you may find it expedient to give them the option of checking the form anonymously. This would be the case if on account of

any local circumstances some individuals would hesitate to express themselves about their church over their own name. If your purpose is to study the attitudes toward the church of a group, that can often be done with anonymous records. Evidently this is a matter to be decided by the experimenter in view of the circumstances and the purposes at the time.

The authors of this scale have proceeded on the fundamental principle that in scoring the papers no opinion is to be regarded as necessarily right or wrong. The purpose of the scale is to describe people's attitudes toward the church without implying that a score very favorable or very unfavorable to the church is either right or wrong. When the test is being conducted and when the papers are scored, one should be as objective as possible. Everyone has the right, of course, to interpret one end of the scale as preferable to the other. If one's conviction is very strong, it might even be phrased in terms of right and wrong, but in so doing one is giving one's individual interpretation to the scores. The construction of the scale itself is intended merely to describe people's attitudes and not to pass any judgment about which attitudes are in any sense right or wrong.

For the purposes of the scale it is immaterial whether favorable attitudes are designated with numerically high or low scores. The authors say absolutely nothing as to which end of the scale is to be considered high or low, good or bad, right or wrong. For convenience in counting we must start somewhere on the scale, and we chose arbitrarily to start at the favorable end, which is designated as the origin for the scale. The purposes of the scale would have been served just as well if we had designated the most unfavorable opinion as an origin. One of the neutral statements might have been designated zero so that opinions favorable to the church would be positive while unfavorable attitudes would be negative. It is rather inconvenient to handle plus and minus signs, and therefore the origin is placed at one end of the scale.

How the Scale Was Constructed

The list of forty-five opinions in this scale have been selected from a much larger number of opinions which have been subjected to a series of psychophysical experiments. The detailed experiments by which the scale values were ascertained are described in the monograph *Measurement of Attitude*. The opinions were so scaled that they represent as nearly as possible an evenly graduated series covering the whole range of opinions from very favorable attitudes through neutral attitudes to attitudes very unfavorable to the church.

How to Score the Papers

The forty-five opinions are printed in random order in the scale. Therefore the number of each opinion in the printed form has no significance except to facilitate the identification of the separate statements. Table II shows the score assigned to each statement.

To determine the score of the individual subject one merely adds the scores of all of the statements that he has indorsed. The two following examples illustrate the scoring procedure. *Example 1:* Suppose that one of the subjects has indorsed the following statements: 1, 6, 8, 9, 14, 21, 28, 32, 34, 36, 41. The scores of these statements are respectively 1.8, 2.4, .5, 1.4, 1.3, 1.0, .6, 2.0, 2.1, 1.6, 1.8. The sum of these scores is 15.5. Record this "summation" on the title-page of the blank. Record also the number of statements that he indorsed, which is in this case eleven. The summation divided by the number of statements indorsed is the final score 1.41, which is also recorded on the title-page of the blank. *Example 2:* Suppose that the subject in-

dorses the following statements: 3, 4, 5, 11, 19, 26, 30, 33, 39, 45. The scores for these statements are respectively 8.1, 10.2, 7.2, 10.6, 9.3, 10.6, 9.2, 10.2, 9.5, 11.0. The summation is 95.9, the number of statements indorsed is ten, and his score is therefore 9.59. If a large number of blanks are to be scored, the clerical work of scoring can be greatly facilitated by making a card-board strip on which the scores are written. This strip is placed on the blank. The scores of the statements that are checked can then be added on a calculating machine without any writing and without referring to the table for each statement.

Interpretation of the Scores

The score may be interpreted by means of the following descriptive phrases if so desired.

SCORE	INTERPRETATION
From 0 to 1.5	—Strongly favorable to the church
1.5 to 3.0	—Favorable to the church
3.0 to 4.5	—Favorable with some reservations
4.5 to 6.5	—Wavering in attitude
6.5 to 8.0	—Slightly unfavorable
8.0 to 9.5	—Antagonistic
9.5 to 11.0	—Strongly antagonistic

The classification may be designated in other ways by inspecting the forty-five opinions. The number of classifications may also be made larger or smaller to suit individual preferences. The foregoing classification is given as a suggestion.

Occasionally you will find individuals who refuse to indorse any statement on the blank. These individuals are exceptions. To suit them it would be necessary to construct a scale so long that it would not be suitable for most occasions. It is probably not worth while to insist on any indorsements from the occasional subject who fails to find any statement in the present list of forty-five that he can indorse. The following list shows the forty-five statements of the scale arranged according to score. In the printed blank the statements are arranged in random order. The following list begins with the statements judged to be most favorable to the church.

TABLE I

THE FORTY-FIVE STATEMENTS OF THE SCALE ARRANGED IN ORDER OF SCORES, BEGINNING WITH THE OPINIONS MOST FAVORABLE TO THE CHURCH

SCORE	CODE NUMBER	
.5	8.	I feel the church is the greatest agency for the uplift of the world.
.6	28.	I regard the church as the most important institution in the world outside of the home.
.8	1.	I think the church is a divine institution, and it commands my highest loyalty and respect.
1.0	21.	My church is the primary guiding influence in my life.
1.3	14.	I believe that the church furnishes the stimulus for the best leadership of our country.
1.4	9.	I think the church has a most important influence in the development of moral habits and attitudes.
1.6	36.	In the church I find my best companions and express my best self.
1.8	41.	I believe that anyone who will work in a modern church will appreciate its indispensable value.
2.0	32.	I feel that the church promotes a fine brotherly relationship between people and nations.

SCORE	CODE NUMBER	
2.1	34.	I feel that church attendance is a good index of the nation's morality.
2.4	6.	I feel the church is trying to adjust itself to a scientific world and deserves support.
2.7	17.	I believe that the church practices the Golden Rule fairly well and has a consequent good influence.
3.0	31.	There is much wrong in my church, but I feel it is so important that it is my duty to help improve it.
3.4	10.	I believe that the church is necessary, but like all other human institutions it has its faults.
3.6	13.	I believe in the ideals of my church, but I am tired of its denominationalism.
4.1	22.	I like the spiritual uplift I get from the church, but I do not agree with its theology.
4.2	25.	I am sympathetic toward the church, but I am not active in its work.
4.3	38.	I am loyal to the church, but I believe its influence is on the decline.
4.8	18.	I am interested only to the extent of attending church occasionally.
4.9	44.	I have a casual interest in the church.
5.2	2.	I am neither for nor against the church, but I do not believe that church-going will do anyone any harm.
5.5	20.	Sometimes I feel the church is worth while, and sometimes I doubt it.
5.9	27.	I know too little about any church to express an opinion.
6.0	40.	My attitude toward the church is best described as indifference.
6.3	15.	I'm not much against the church, but when I cannot agree with its leaders I stay away.
6.5	23.	My attitude toward the church is one of neglect due to lack of interest.
6.7	43.	My attitude toward the church is passive, with a slight tendency to disfavor it.
6.8	29.	I am slightly prejudiced against the church and attend only on special occasions.
7.2	5.	I believe that the church is losing ground as education advances.
7.6	12.	The church is too conservative for me, and so I stay away.
8.0	35.	I feel the church is petty, easily disturbed by matters of little importance.
8.1	3.	I feel the good done by the church is not worth the money and energy spent on it.
8.5	7.	The teaching of the church is altogether too superficial to be of interest to me.
8.6	42.	The church deals in platitudes and is afraid to follow the logic of truth.
9.0	16.	I regard the church as hopelessly allied with reactionary forces.
9.0	37.	I believe the church is non-scientific, depending for its influence upon fear of God and hell.
9.2	30.	I do not think a man can be honest in his thinking and indorse what the church teaches.
9.3	19.	I feel the church is ridiculous, for it cannot give examples of what it preaches.
9.4	24.	I believe the church is bound hand and foot with monied interests and does not practice its ideals.
9.5	39.	It seems absurd to me for a thinking man to be interested in the church.
10.2	4.	I regard the church as a monument to human ignorance.

dorses the following statements: 3, 4, 5, 11, 19, 26, 30, 33, 39, 45. The scores for these statements are respectively 8.1, 10.2, 7.2, 10.6, 9.3, 10.6, 9.2, 10.2, 9.5, 11.0. The summation is 95.9, the number of statements indorsed is ten, and his score is therefore 9.59. If a large number of blanks are to be scored, the clerical work of scoring can be greatly facilitated by making a cardboard strip on which the scores are written. This strip is placed on the blank. The scores of the statements that are checked can then be added on a calculating machine without any writing and without referring to the table for each statement.

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The classification may be designated in other ways by inspecting the forty-five opinions. The number of classifications may also be made larger or smaller to suit individual preferences. The foregoing classification is given as a suggestion.

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SCORE	CODE NUMBER	
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.6	28.	I regard the church as the most important institution in the world outside of the home.
.8	1.	I think the church is a divine institution, and it commands my highest loyalty and respect.
1.0	21.	My church is the primary guiding influence in my life.
1.3	14.	I believe that the church furnishes the stimulus for the best leadership of our country.
1.4	9.	I think the church has a most important influence in the development of moral habits and attitudes.
1.6	36.	In the church I find my best companions and express my best self.
1.8	41.	I believe that anyone who will work in a modern church will appreciate its indispensable value.
2.0	32.	I feel that the church promotes a fine brotherly relationship between people and nations.

SCORE	CODE NUMBER	
2.1	34.	I feel that church attendance is a good index of the nation's morality.
2.4	6.	I feel the church is trying to adjust itself to a scientific world and deserves support.
2.7	17.	I believe that the church practices the Golden Rule fairly well and has a consequent good influence.
3.0	31.	There is much wrong in my church, but I feel it is so important that it is my duty to help improve it.
3.4	10.	I believe that the church is necessary, but like all other human institutions it has its faults.
3.6	13.	I believe in the ideals of my church, but I am tired of its denominationalism.
4.1	22.	I like the spiritual uplift I get from the church, but I do not agree with its theology.
4.2	25.	I am sympathetic toward the church, but I am not active in its work.
4.3	38.	I am loyal to the church, but I believe its influence is on the decline.
4.8	18.	I am interested only to the extent of attending church occasionally.
4.9	44.	I have a casual interest in the church.
5.2	2.	I am neither for nor against the church, but I do not believe that church-going will do anyone any harm.
5.5	20.	Sometimes I feel the church is worth while, and sometimes I doubt it.
5.9	27.	I know too little about any church to express an opinion.
6.0	40.	My attitude toward the church is best described as indifference.
6.3	15.	I'm not much against the church, but when I cannot agree with its leaders I stay away.
6.5	23.	My attitude toward the church is one of neglect due to lack of interest.
6.7	43.	My attitude toward the church is passive, with a slight tendency to disfavor it.
6.8	29.	I am slightly prejudiced against the church and attend only on special occasions.
7.2	5.	I believe that the church is losing ground as education advances.
7.6	12.	The church is too conservative for me, and so I stay away.
8.0	35.	I feel the church is petty, easily disturbed by matters of little importance.
8.1	3.	I feel the good done by the church is not worth the money and energy spent on it.
8.5	7.	The teaching of the church is altogether too superficial to be of interest to me.
8.6	42.	The church deals in platitudes and is afraid to follow the logic of truth.
9.0	16.	I regard the church as hopelessly allied with reactionary forces.
9.0	37.	I believe the church is non-scientific, depending for its influence upon fear of God and hell.
9.2	30.	I do not think a man can be honest in his thinking and indorse what the church teaches.
9.3	19.	I feel the church is ridiculous, for it cannot give examples of what it preaches.
9.4	24.	I believe the church is bound hand and foot with monied interests and does not practice its ideals.
9.5	39.	It seems absurd to me for a thinking man to be interested in the church.
10.2	4.	I regard the church as a monument to human ignorance.

L. L. THURSTONE AND E. J. CHAVE
THE UNIVERSITY OF CHICAGO

467
Summation = _____

No. of opinions checked = 1

Attitude score = _____

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A SCALE FOR MEASURING ATTITUDE TOWARD THE CHURCH

This scale has been prepared for studying people's attitudes toward the church. You are asked merely to check all the opinions that express your own sentiments. Let your own experience with churches determine your indorsements.

1. NAME: _____
(You need not sign your name if you prefer to give your opinions anonymously.)

2. SEX: Man, Woman (Underline one)

3. AGE: _____

4. RELIGIOUS AFFILIATION: None, Protestant, Roman Catholic, Jewish (Underline one)

Other: _____

5. CHURCH RELATION: Active member, Nominal member, None (Underline one)

6. CHURCH ATTENDANCE: Regular, Frequent, Occasional, Seldom, Not at all (Underline one)

7. EDUCATION COMPLETED: Grades 1 2 3 4 5 6 7 8, High School 1 2 3 4, College 1 2 3 4 5 6 7
(Ring one)

8. VOCATION: Student, Profession, Trade, Business, Retired, Unemployed (Underline one)

Other: _____

FREQUENCY TABLE OF ATTITUDE SCORES

ATTITUDE TOWARD THE CHURCH

SCORES	TABULATION	FREQUENCY
0.00- .49		
.50- .99		
1.00- 1.49		
1.50- 1.99		
2.00- 2.49		
2.50- 2.99		
3.00- 3.49		
3.50- 3.99		
4.00- 4.49		
4.50- 4.99		
5.00- 5.49		
5.50- 5.99		
6.00- 6.49		
6.50- 6.99		
7.00- 7.49		
7.50- 7.99		
8.00- 8.49		
8.50- 8.99		
9.00- 9.49		
9.50- 9.99		
10.00-10.49		
10.50-11.00		

TOTAL NUMBER OF SUBJECTS:

For detailed method of preparing a frequency table consult any elementary textbook on statistics, such as *Fundamentals of Statistics* by L. L. Thurstone, chap. 1, p. 2.

SCORE	CODE NUMBER	
10.2	33.	I think the church is unreservedly stupid and futile.
10.6	11.	I regard the church as a harmful institution, breeding narrow-mindedness, fanaticism, and intolerance.
10.6	26.	I regard the church as a parasite on society.
11.0	45.	I have nothing but contempt for the church.

The Distribution of Attitude in a Group

It is frequently desired to compare several groups as to their attitudes toward the church. In such a situation we are not primarily interested in individual attitudes but in the distribution of attitudes of a group as such. In order to make such a comparison it is necessary to determine the mean attitude of each group. This is simply the arithmetic mean (the ordinary average) of all the scores in each group. The schedule on the next page has been prepared to facilitate such tabulation. In the first column we have the scale intervals of scores. The second wide column is intended for the tabulation. In the third column one may summarize the number of individuals in each class interval. This tabulation will enable one readily to calculate the average score for each group. The detailed methods of calculating the average score from a frequency table will be found in any elementary textbook on statistics.

The dispersion or variability of attitude in a group may also be ascertained if desired by calculating the standard deviation of the distribution. The methods of calculating different measures of variability will also be found in the elementary textbooks on statistics.

Several of the problems involved in attitude measurement for which an attitude scale may be useful are discussed in the monograph on the measurement of attitude previously referred to.

TABLE II

THE SCORE FOR EACH OF THE FORTY-FIVE OPINIONS IN THE SCALE
 (Examples: The score of statement No. 10 is 3.4 and the score of statement No. 27 is 5.9)

	0	1	2	3	4	5	6	7	8	9
0.....		.8	5.2	8.1	10.2	7.2	2.4	8.5	.5	1.4
10.....	3.4	10.6	7.6	3.6	1.3	6.3	9.0	2.7	4.8	9.3
20.....	5.5	1.0	4.1	6.5	9.4	4.2	10.6	5.9	.6	6.8
30.....	9.2	3.0	2.0	10.2	2.1	8.0	1.6	9.0	4.3	9.5
40.....	6.0	1.8	8.6	6.7	4.9	11.0				

Reliability

The reliability coefficient for this scale based upon 150 cases taken at random from different groups, by the split-halves method, is .80. Extended to twice the length by the Spearman-Brown formula it is .89.

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 any church to express an opinion.
28. I regard the church as the most important institution in the world outside of the home.
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 think the church is unreservedly stupid and futile.
34. I feel that church attendance is a good index of the nation's morality. ~~.....~~
35. I feel 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 disfavor it.
44. I have a casual interest in the church.
45. I have nothing but contempt for the church.

FORM B

Statement	1	2	3	4	5	6	7	8	9	10
Value	8.7	7.7	6.8	10.8	9.3	4.8	1.3	4.1	2.1	0.8
Statement	11	12	13	14	15	16	17	18	19	20
Value	9.7	3.1	1.5	10.3	6.2	2.6	3.5	5.5	8.2	6.4

A person's score is the median scale value of the statements that he has double checked. Thus, suppose that he has double checked statements 4 and 7 in Form A. The corresponding scale values are 10.5 and 9.8 respectively. The median score is therefore 10.2. If he has double checked only one statement, then the scale value of that statement is his score, no matter which other statements he has single checked. If the subject has not double checked any statement, then his score is the median scale value of all the statements that he has single checked.

Forms A and B

The two forms, A and B, of the scale will give comparable scores. If an experimenter wants to study the effect of some kind of instruction or propaganda he may use one form at the beginning of the experiment and the other at the end and thus measure the effect of the interposed material. Both forms may be used at one time if a longer set of questions is desired.

Distribution of Attitude in a Group

If it is desired to compare several groups with reference to their attitudes on birth control, it can be done by determining the mean attitude of the group. This is merely the arithmetic mean (the ordinary average) of all the scores in each group. The scores may also be plotted in the form of frequency distributions and these may be compared as to central tendency and dispersion by the usual statistical methods.

Interpretation of the Scores

The following table enables one to interpret the individual scores as well as the average score of a group of individuals:

- 0- 2.9—Strongly opposed to birth control
- 3.0- 4.9—Opposed to birth control
- 5.0- 5.9—Neutral or indifferent
- 6.0- 7.9—In favor of birth control
- 8.0-10.9—Strongly in favor of birth control

ATTITUDE TOWARD BIRTH CONTROL

SCALE NO. 21, FORM A

Prepared by CHARLES K. A. WANG and L. L. THURSTONE

Write your name here _____

1. _____

2. _____

3. _____

This is a study of attitudes toward birth control. On the reverse side you will find twenty statements expressing different attitudes toward birth control.

Put a check mark (✓) if you *agree* with the statement.

Put a double check (✓✓) if you *strongly agree* with the 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.

This is not an examination. People differ in their opinions about what is right and wrong in this issue.

Please indicate *your own attitude* by a check mark when you agree, by double check when you agree emphatically, and by a cross when you disagree.

Put a check mark (✓) if you agree with the statement

Put a cross (×) if you disagree with the statement

- () 1. Both the evils and the benefits of communism are greatly exaggerated.
- () 2. It is only the ignorant and incompetent that want communism.
- () 3. The whole world must be converted to communism.
- () 4. Workers can hardly be blamed for advocating communism.
- () 5. Communism is a much more radical change than we should undertake.
- () 6. Police are justified in shooting down the communists.
- () 7. Give Russia another twenty years or so and you'll see that communism can be made to work.
- () 8. If Russia today is a sample of how communism works, we don't want it.
- () 9. Communism should be established by force if necessary.
- () 10. The communist may be rough but he has the right idea.
- () 11. I am not worrying, for I don't think there's the slightest chance that communism will be adopted here.
- () 12. The communists are the most destructive element in our civilization.
- () 13. Communism is the solution to our present economic problems.
- () 14. We should be open-minded about communism.
- () 15. The ideals of communism are worth working for.
- () 16. I am not sure that communism solves the problems of capital and labor.
- () 17. The whole communistic scheme is unsound.
- () 18. Communists should set up a dictatorship of the workers in the United States.
- () 19. We should not reject communism until it has been given a longer trial.
- () 20. If a man has the vision and the ability to acquire property, he ought to be allowed to enjoy it himself.

INSTRUCTIONS FOR USING THE SCALE ATTITUDE TOWARD BIRTH CONTROL

SCALE NO. 21, FORMS A AND B

These instructions are for use with the "Scale of Attitude toward Birth Control" which was constructed by Charles K. A. Wang and L. L. Thurstone.

How to Use the Scale

This scale is not an examination. It is therefore permissible for the subject to fill in the blanks without supervision. As the scale is usually given to a group of subjects the following directions apply especially to that situation.

Distribute the blanks, one to each person. The subjects may or may not be asked to fill in their names. The three blank spaces on the title-page may be used for any information the investigator may want, such as: age, sex, religious affiliation, nationality, etc.

If a sentence has been altered it is ignored in scoring the results. This is the reason: if any alteration is made in a statement, the indorsement would not be comparable with those of other people and consequently it would have no value. This fact should be explained to the subjects.

There should be no discussion about the statements before the blanks are filled in. Afterward there is, of course, no harm in discussing the opinions at will.

Allow each subject as much time as he likes. Ten or fifteen minutes, however, is usually sufficient.

How to Score the Papers

The twenty statements are printed in random order. The number preceding each statement has no significance except to identify it.

No opinion is to be regarded as right or wrong. The purpose of the scale is to describe people's attitudes toward birth control without any implication that one attitude is more correct than another. It is therefore of no significance that higher scale values happen to be assigned to the statements favoring birth control. The reverse arrangement might as well have been chosen.

The scale value of the twenty statements in Form A and in Form B are tabulated below:

FORM A

Statement	1	2	3	4	5	6	7	8	9	10
Value	7.6	7.4	3.3	10.5	0.0	5.4	9.8	8.0	2.3	0.9
Statement	11	12	13	14	15	16	17	18	19	20
Value	9.6	1.7	6.6	8.3	3.6	9.2	1.1	5.8	2.8	4.5

The Measurement of Social Attitudes

Edited by L. L. THURSTONE

The University of Chicago

ATTITUDE TOWARD COMMUNISM

SCALE NO. 6, FORM A

Prepared by L. L. THURSTONE

The University of Chicago

Write your name here _____

1. _____

2. _____

3. _____

This is a study of attitudes toward communism. On the reverse side you will find twenty statements expressing different attitudes toward communism.

Put a check mark (✓) if you *agree* with the 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.

This is not an examination. People differ in their opinions about what is right and wrong in this issue.

Please indicate *your own attitude* by a check mark when you agree and by a cross when you disagree.

The University of Chicago Press, Chicago, Illinois

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INSTRUCTIONS FOR USING THE SCALE ATTITUDE TOWARD COMMUNISM

SCALE NO. 6, FORMS A AND B

These instructions are for use with the "Scale of Attitude toward Communism" which was constructed by L. L. Thurstone.

How to Use the Scale

This scale is not an examination in any sense. It is therefore allowable to fill in the blanks without supervision. In most cases, the scale will be given to a group of subjects and the directions apply to that situation.

Distribute the blanks, one to each person. The subjects may or may not be asked to fill in their names. The three blank spaces on the title-page may be used for any information the investigator may want, such as age, sex, nationality, education, and so on.

If a sentence has been altered it will be ignored in scoring the results. This fact should be explained. If any alteration is made in a statement, the indorsement would not be comparable with those of other people and consequently it would have no value.

There should be no discussion about these statements before the blanks are filled in. After the forms have been filled in there is, of course, no harm in discussing the opinions at length. At that time the statements may be discussed at will. But one should be careful that each subject has the opportunity to read and indorse these opinions uninfluenced by previous discussion about this particular list of opinions.

There is no time limit on this scale because it is in no sense a speed performance. Allow each subject as much time as he likes. Ten or fifteen minutes is usually ample time.

How to Score the Papers

The twenty statements are printed in random order. The number preceding each statement has no significance except to identify it.

No opinion is to be regarded as right or wrong. The purpose of the scale is to describe people's attitudes toward communism without any implication that one attitude is more correct than another. It is therefore of no significance that higher scale values happen to be assigned to the statements favoring communism. The reverse arrangement might as well have been chosen.

The scale values of the twenty statements in Form A and in Form B are tabulated below:

FORM A

Statement	1	2	3	4	5	6	7	8	9	10
Scale value	5.4	2.2	10.4	7.0	3.8	0.3	8.4	2.7	10.8	7.4
Statement	11	12	13	14	15	16	17	18	19	20
Scale value	4.3	0.9	9.1	6.4	8.2	4.7	1.9	9.9	6.8	3.3

FORM B

Statement.....	1	2	3	4	5	6	7	8	9	10
Scale value.....	6.8	3.4	5.5	2.1	10.8	7.2	3.8	0.6	8.9	2.8

Statement.....	11	12	13	14	15	16	17	18	19	20
Scale value.....	11.3	7.9	4.5	1.2	9.2	5.8	8.0	5.1	1.7	10.1

A person's score is the median scale value of all the statements he indorses. For example, suppose that he indorses statements 1, 4, 10, 13, 14, and 19 of Form A. The corresponding scale values of these statements are 5.4, 7.0, 7.4, 9.1, 6.4, and 6.8. The median scale value is halfway between 6.8 and 7.0, which is 6.9. If an odd number of statements is indorsed, the person's score is the middle scale value.

Forms A and B

The two forms, A and B, of the scale will give comparable scores. If an experimenter wants to study the effect of some kind of instruction or propoganda he may use one form at the beginning of the experiment and the other at the end and thus measure the effect of the interposed material. Both forms may be used at one time if a longer set of questions is desired.

Distribution of Attitude in a Group

It is frequently desired to compare several groups with reference to their attitudes on a particular issue. In order to make such a comparison, it is necessary to determine the mean attitude of each group. This is simply the arithmetic mean (the ordinary average) of all the scores in each group. The scores may also be plotted in the form of frequency distributions and these may be compared as to central tendency and dispersion by the usual statistical methods.

Interpretation of the Scores

The following table enables one to interpret the individual scores as well as the average score of a group of individuals.

- 0-3.4—Strongly opposed to communism
- 3.5-4.9—Slightly opposed to communism
- 5.0-5.9—Neutral or indifferent
- 6.0-7.4—Mildly in favor of communism
- 7.5-11.3—Strongly in favor of communism

The interpretation of a particular score can also be made by reading several of the statements in the two forms with values nearly equal to the score to be interpreted.

VALUES REPRESENT

Down - Sub.

Birth Control

INTERVALS	132	113	94	75	56	37	-18	+1	20	39	58	79	98	119		$f_{(y)}$	y	fy	fy^2
950	-23	-42	-35	-28	-21	-14	-7		7	14	21	28	35	42	49				
937		1								1	1					3	7	21	147
926	-42	-35	-28	-21	-14	-7	-6		6	12	18	24	30	36	42				
913					2								1			3	6	18	108
892	-35	-28	-21	-14	-7	-6	-5		5	10	15	20	25	30	36				
879		1						1			2					5	5	25	125
858	-28	-21	-14	-7	-6	-4	-3		4	8	12	16	20	24	28				
845		1	2	5	2			2	1	1	3	2				20	4	80	320
814	-21	-14	-7	-6	-3	-2	-1		3	6	9	12	15	18	21				
791		1		1	3	1	1				2	2				13	3	39	117
778	-14	-7	-6	-3	-2	-1	-2		2	4	6	8	10	12	14				
767		2	1	1	1	2	3		1	3						14	2	28	66
726	-7	-6	-5	-4	-3	-2	-1		1	2	3	4	5	6	7				
683			1	3	1	1	1	3		1	1	2				14	1	14	14
682						1	1	2				1				5			
639																			
637	7	6	5	4	3	2	1		-1	-2	-3	-4	-5	-6	-7				
595			1	1				1					1	1		5	-1	5	5
594	14	12	10	8	6	4	2		-2	-4	-6	-8	-10	-12	-14				
561			1	2	1			1								5	-2	10	20
550	21	18	15	12	9	6	3		-3	-6	-9	-12	-15	-18	-21				
507					1			1		1						3	-3	9	27
506	28	24	20	16	12	8	4		-4	-8	-12	-16	-20	-24	-28				
463			1										1			2	-4	8	32
462	35	30	25	20	15	10	5		-5	-10	-15	-20	-25	-30	-35				
419										1						1	-5	5	25
418	42	36	30	24	18	12	6		-6	-12	-18	-24	-30	-36	-42				
375																			
374	49	42	36	28	21	14	7		-7	-14	-21	-28	-35	-42	-49				
330							1					1				2	-7	14	98
f_x	1	3	4	7	13	12	6	13	5	8	9	7	5	2					
xy	7	6	5	4	3	2	1		1	2	3	4	5	6	7				
fx^2	7	18	20	28	39	24	6	113	5	16	27	28	25	12					
fx^2	49	108	100	112	117	48	6		5	32	81	112	175	72					
Σx				28	15	10	7		9	40	111	60	40	24					
Σy	21	96	60	44	84	64	8			16		28	25	6					
Σxy																744	-48		
Σx^2																432			
Σy^2																			
r																			
r^2																			
$1-r^2$																			
$\frac{1-r^2}{N}$																			

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CORRELATION CHART	
SUBJECT	DATE
PLACE	BY

$$r = \frac{\frac{\Sigma xy}{N} - \left(\frac{\Sigma x}{N} \cdot \frac{\Sigma y}{N}\right)}{\sqrt{\frac{\Sigma x^2}{N} \left(\frac{\Sigma y^2}{N}\right) - \frac{(\Sigma x)^2 (\Sigma y)^2}{N^2}}}$$

$$P.E. r = \frac{1-r^2}{\sqrt{N}}$$

Tables with Sophomores

The group of forty-three men and fifty-five women increased in number to ninety-five men and one hundred seven women, by adding sophomores to the freshmen in the hope of securing greater constancy. The results were found to be highly similar to the small group and are not used in this study, but are included in the two tables on the following pages.

TABLE III
CORRELATION OF ATTITUDES WITH PERSONALITY TRAITS
FRESHMEN WITH SOPHOMORES ADDED
95 WOMEN

	Freshmen			Plus Sophomores		
	<u>r</u>	<u>P.E.</u>	<u>No.</u>	<u>r</u>	<u>P.E.</u>	<u>No.</u>
<u>CHURCH vs</u>						
Intelligence	.096	.092	53	.041	.072	88
Neuroticism	-.069	.090	55	.115	.070	93
Self-Sufficiency	.031	.082	55	-.108	.071	93
Introversiion-Extroversiion	.275	.084	55	-.007	.071	93
Dominance-Submission	.013	.063	55	-.047	.070	94
<u>BIRTH CONTROL vs</u>						
Intelligence	.166	.091	53	.264	.067	88
Neuroticism	-.067	.091	55	.067	.069	95
Self-Sufficiency	-.276	.073	55	-.424	.064	95
Introversiion-Extroversiion	.131	.090	55	-.271	.061	95
Dominance-Submission	-.024	.086	55	.052	.069	95
<u>COMMUNSION vs</u>						
Intelligence	-.098	.092	53	-.156	.066	88
Neuroticism	.128	.090	55	.054	.069	95
Self-Sufficiency	-.073	.090	55	-.072	.069	95
Introversiion-Extroversiion	.286	.084	55	.092	.069	95
Dominance-Submission	-.217	.048	55	-.115	.069	95

TABLE IV
CORRELATION OF ATTITUDES WITH PERSONALITY TRAITS
FRESHMEN WITH SOPHOMORES ADDED
107 MEN

	Freshmen			Plus Sophomores		
	<u>r</u>	<u>P.E.</u>	<u>No.</u>	<u>r</u>	<u>P.E.</u>	<u>No.</u>
<u>CHURCH vs</u>						
Intelligence	.207	.101	41	.016	.071	90
Neuroticism	.216	.098	43	.015	.062	103
Self-Sufficiency	.037	.104	43	.233	.063	104
Introversion-Extroversion	.280	.136	43	.121	.097	103
Dominance-Submission	.034	.104	43	.096	.066	103
<u>BIRTH CONTROL vs</u>						
Intelligence	.292	.099	41	.159	.069	90
Neuroticism	.002	.103	43	-.032	.060	103
Self-Sufficiency	.065	.103	43	.064	.066	103
Introversion-Extroversion	.066	.103	43	-.022	.066	103
Dominance-Submission	-.132	.101	43	.133	.055	103
<u>COMMUNISM vs</u>						
Intelligence	-.002	.103	41	-.012	.071	90
Neuroticism	.190	.099	43	-.042	.060	104
Self-Sufficiency	-.189	.147	43	-.077	.097	104
Introversion-Extroversion	.233	.097	43	.017	.065	105
Dominance-Submission	-.287	.095	43	-.119	.064	107

