CONFIDENCE: CATEGORIES AND CONFUSION

PRELIMINARY DRAFT

By

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1 An Overview

> And finally, what about the magical number seven? What about the seven wonders of the world, the seven seas, the seven deadly sins, the seven daughters of Atlas in the Pleiades, the seven ages of man, the seven levels of hell, the seven primary colors, the seven notes of the musical scale, and the seven days of the week? What about the seven-point rating scale, the seven categories for absolute judgement, the seven objects in the span of attention, and the seven digits in the span of immediate memory? For the present I propose to withhold judgement. Perhaps there is something deep and profound behind all these sevens, something just calling out for us to discover it. But I suspect that is is only a pernicious, Pythagorean coincidence. Miller(1956:96)

"A perennial question associated with the use of rating scales is: How many response categories should be included?" (Rao and Green, 1970:33). To researchers and scholars, especially those users of the University of Michigan's American National Election Study who have become accustomed to utilizing seven point scales, a question of why seven point scales instead of two, three or five will often elicit an answer such as "better statistical properties", "more variance", "finer classification", "you can always collapsed it down to a dichotomy or trichotomy", and so forth. Indeed Andrews and Withey(1976:86 n.17) note that "Seven-point scales provide more sensitive indications of respondent's feelings than do three-point scales . . . relatively new evidence suggests that three-category scales capture only 80-90 percent of the total variation, whereas seven-category scales capture virtually 100 percent of it." However there is little experimental evidence that switching from dichotomous and trichotomous representations of an underlying continuous variable to seven point rating scales with labelled

endpoints are justified.

The study of confidence in institutions and institutional leaders[1] is one such topic where there is a large body of survey data but a paucity of experimental data on whether the three point scale, "Great deal of confidence; Only some; or Hardly any at all" is the proper medium to use. Until now there has been no national level comparison of the number of categories and particularly none of a set of items to widely used and cited as those for confidence in institutions.[2]

In 1984 the General Social Survey performed an experimental test of the effect of varying the number of response categories for the traditional confidence questions. The traditional wording was asked on two-thirds of the the sample while the experimental seven point scale was asked of a representative third.[3] The analysis that follows is an attempt to investigate the effect the change in response categories has on the inter-item correlation. If the traditional wisdom is right, the seven point scales are to be preferred to the three point scale because they should capture more of underlying variation in the variables and have higher inter-item correlations suggesting that they tap the underlying continuum of confidence better (Bollen and Barb, 1981; Cochran, 1968; Conner, 1978; Gephart, 1983; and Ramsey, 1973).

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1. For an exhaustive review of the subject see Lipset and Schneider(1983).

2. The most recent edition of the GSS Bibliography (Smith and Ward, 1984) lists an average of approximately 90 publications that utilize the 13 confidence items.

3. The question wordings for the two forms and the marginals are presented in the appendix.

2 Theoretical Literature

2.1 Categorizing Continuous Variables -- Some Definitions

There are two fundamental questions to be addressed in the discussion of ordinal variables: the first is how reliable is the discrete ordinal representation of the latent continuous variable and second, do the necessary errors induced by the process of categorization produce significant errors in correlations. In addition as a corollary question, are those errors reduced by the use of seven categories as opposed to three. The impact of these two questions directly affects the conclusions to be drawn from the evaluation of the scales.

This section will review what the literature has to say about these questions.[4]

Hensler and Stipak(1979) provide a few useful definitions which I will use frequently throughout this discussion.

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4. O'Brien(1984) notes that there is an extensive literature regarding the relationship between the continuous, underlying variables and their ordinal representations, but that they take two different forms,

- Rank Order Measures -- Each case from the underlying distribution is given a different rank.
- Rank Category Measures -- Each case from the underlying distribution is placed into one of a relatively small number of ordered categories.

In general much of the literature has examined only one aspect of the problem, that of the correlation between the measured score and the underlying continuum. This is an epistemic correlation.

- Categorization Error -- This is the loss of intracategory information. These errors result when the underlying scores in a category are not homogeneous. Thus even the best possible score assigned to a category, one that produces no transformational error, will cause some distortion of the underlying score. A single category value cannot represent them without some error.

- Transformation Error -- This occurs if the measured categories are not linear transformations of the mean values of the underlying scores in the categories.

Each of these two general types of error which are created in the process of categorization will adversely affect the results of analyses that assume interval measures.[5] In general most of the work done were simulation studies as there was little experimental evidence until now and none from a representative national sample.

2.2 Literature -- How Many Categories to Use

Green and Rao noted that there are two schools of thought on the subject of rating scales and the number of categories:

> It is here that the field splits rather markedly into two camps. One group of rating-scale users advocates employing as fine a set of response categories as can be handled by the subject; for example, an 11-point or even a 21-point scale. Other researchers recommend -- either for coding and analytical convenience, or based on opinions about respondents' limited discrimination abilities -- the use of only two- or three-point rating scales.

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5. Indeed the "process of categorizing two correlated continuous variables creates measurement errors that are correlated" as Kim and Rabjohn(1979:3) have shown.

> Members of this latter group seem to feel that inclusion of a large number of scales "makes up" for the coarseness of response categories. (1970:33)

Green and Rao investigated the effects of changes in the number of categories on the degree of reproducibility of an initial spatial configuration using a multidimensional scaling routine. They drew two "pragmatic" recommendations:

1. Whenever possible use at least six point items.

2. Try to use at least eight individual items that "cover" the hypothesized dimensions.

In a reply Benson(1971) argued the practical convenience and the frequency of use of two- and three-point scales are strong points in their favor and should argue for their retention.

Lehman and Hulbert(1972) delineated the conditions under which two- and three-point scales may be adequate for empirical use. They felt that much of the controversy over the appropriate number of scale steps stems from the different goals investigates have for the ultimate use of the items. The key question is whether the focus is group (average) or individual behavior. If one is interested in averages across people or will aggregate several individual items to produce a scale then two or three scale points are in general "good enough". However if the focus is on individual behavior, five- to seven-point items should be used. As they concluded,

> The key issue in deciding how many scale points to use is thus to balance the various benefits and costs involved. Increasing the number of scale points reduces the rounding error as a benefit, but may also increase the cost of administration, non-response bias, and respondent fatigue. Since averaging tends to reduce the rounding error, when scales are to be averaged the costs of

> increasing the number of scale points will usually outweigh the benefits. When individual scales are to be analyzed, using a minimum of 5 to 6 scale points is probably necessary to get an accurate measure of the variable and hence the benefits of increasing the number of scale points will often outweigh the costs (1972:446).

While most advocates of a large number of categories approach are willing to settle for the "magic number seven", there are even more refined scales in common use, such as the 101-point Michigan feeling thermometer and the 10-point Gallup scalometer. In addition the magnitude measurement scaling approach rejects any limit on the number of scale categories (Lodge, 1981).

2.3 What Values Should the Categories Have

Hensler and Stipak(1979) described a number of methods for estimating category scale values since certain coding schemes can produce a markedly nonlinear representation and will not represent the true, underlying metric of the variable.[6]

They propose as a proper criterion for the assignment of values the following:

> Proper assignment of category values requires assigning values that minimize nonlinear distortions of the underlying variables being measured. The task can be thought of as preserving the relative inter-category distances -- that is, constructing an observed variable that is a linear transformation of the underlying variable (plus an error term due to loss of intra-category information). The original scale usually cannot be established, since the units of the underlying metric are typically undefined, as in the case of a political attitude (1979:630).

As they conclude,

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6. Hensler and Stipak sought to minimize transformational error.

> Analysts applying interval-level statistics to survey data should carefully scrutinize pre-existing category values to guard against using any markedly nonlinear measures of the true variables. However, simple statistical analyses will usually not be highly sensitive to minor variations in the choice of category values. Since the product-moment correlation is quite stable over a wide variety of nonlinear monotone transformations of the numbers assigned to the categories, researchers using only bivariate correlations or other very simple statistical techniques need not expend great effort in choosing among slightly different assignment schemes. In such cases equal-interval assignment will often be a reasonable choice.
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> For more sophisticated research the proper assignment of category values, as well as other measurement problems, can be crucial. Although the choice of category values may have only minor effect on simple correlation, it may make a critical difference when estimating the regression coefficients of two highly correlated independent variables or when comparing alternative causal models (1979:647).

Even under the best of conditions using rank category measures of underlying continuous variables (ordinal variables) causes errors or distortions in the results of statistical analysis. Moreover as O'Brien(1982:605) commented, "Actually, all measures of continuous variables involve some classification of the underlying variate-values into categories, however finely graded."

O'Brien(1982) concluded that the degree of distortion depends upon at least four factors:

1. The form of the underlying distribution (not necessarily normal).

2. The marginal distributions of the variables.

3. The scoring system employed to minimize transformational errors in the underlying variable. This may range from trivial to substantial depending upon the above two points. [Note this is the gain from using a traditional equal distance scoring system.]

4. The number of categories utilized. As the number of categories increases the distortion decreases. The decrease is very substantial as categories increase from two to four.

2.4 Bivariate and Beyond

> "Analysts of social science data often need the flexibility and power of interval level statistics, even though strictly interval measurement has not been achieved." Hensler and Stipak(1979).

There have been three basic approaches to the problem in the literature. One is the argue that an ordinal statistic such as Kendall's Tau can be utilized as an analogue to Pearson's product moment correlation and input into multivariate statistical routines that demand interval level data. The second approach has been to calculate the interval level statistics directly from the data, treating the ordinal data as if it were interval. The last is to transform the ordinal data into a form that preserves the underlying metric and apply interval level statistics such as Pearsonian correlations thus minimizing transformational error. The question this section will address is: How much is the Pearsonian correlation between two continuous variables distorted when the items are measured using rank categories.[7]

Labovitz(1967, 1970) argued that the use of interval-level statistics with ordinal level data does not lead to large errors. As he wrote,

> . . . certain interval statistics can be given their interval interpretations with caution (even if the variable is 'purely' ordinal), because the 'true' scoring system and the assigned scoring system, especially the equidistant system, are always close as measured by r (1970:523).

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7. Note that this is exactly the motivation for the development of the tetra- and polychoric correlations.

The conclusions from these two papers have been used by sociologists to justify the use of seven and even four point scales as interval and hence amenable to advanced statistical techniques. There are two major limitations to the studies though; first his rank order variable has 31 categories and second, he assumed a uniform underlying distribution.

Martin(1973, 1978) investigated the effects of scaling on the Pearson product moment correlation. Again with simulation data, he found that generally the correlation coefficient decreases as the number of response categories grows smaller. The largest amount of lost information is associated with the higher true correlations and small numbers of categories. His simulation findings suggested the use of 10 points or more on a scale whenever possible.

O'Brien (1979) found that if one is willing to assume either a normal or uniform underlying distribution the use of a rank order value causes little distortion in r. However he noted that if the distribution is skewed the use of ordinal data as interval level is not warranted and even worsens as the number of categories increases.

3 Empirical Results from a Comparison of Correlations

3.1 1984 GSS Experiment

On the 1984 GSS an experimental comparison of the effect of varying the number of response categories was conducted. . The GSS samples English

speaking persons 18 years of age or older, living in non-institutional housing within the continental United States. The GSS has been conducted annually since 1972 (excluding 1979 and 1981) and now comprises 18,586 cases and 884 variables. The 1984 survey employed full probability sampling from the 1980 SRC-NORC sampling frame. (For details see Davis and Smith, 1985). On two thirds of the sample, the traditional three point item was asked while on the remaining third, a modified version with a seven-point, bipolar rating scale was utilized. The question wordings and format for the two versions are presented in the appendix. The univariate distribution of the two versions are presented in Table 1.

From the simulation studies cited previously and from the conventional "wisdom" it is expected that the seven-point version would more adequately measure the underlying latent dimension of confidence that the traditional three-point item. This should manifest itself as higher inter-item associations between confidence items using the seven-point scale.

3.2 Gammas

Since the Gamma statistic is a well known and frequently utilized ordinal statistic, it provides the basis for the first comparison of the inter-item association of the traditional, three point confidence items and the variant seven-point scale items. The simple average gammas, computed for the raw, uncollapsed variables, showed the three point version to have, not surprisingly, a higher mean gamma (.354 to .238).

The seven point scales were then collapsed into three categories to afford some measure of comparability. Three different methods were used. The first

approximates a typical recoding of a seven point scale, where the extreme two categories are combined and the middle three make up the center category. The second method is just a variant of the first. Instead of combining the three middle categories into a center code, any direction either way is combined with the extremes. Thus the middle category is really a middle showing no direction whatsoever, either to "Complete Confidence" or "Hardly Any Confidence At All." The last method of collapsing the seven-point scales attempted to duplicate the distribution of their three-point counterparts. The procedure was the same as the first with the exception of the variables CONLABOY and CONBUSY.[8]

The mean gammas and their mean differences are shown in Table 3. The first method (with cuts 1,2/3,4,5/6,7) a mean gamma of .315, a figure close to but still smaller than for the three point version. The other two also produced mean gammas slightly lower than the traditional version with mean differences of .057 and .043 respectively. These differences are however not large and should be regarded as trivial differences (Table 3).

3.3 Spearman's Rho and Kendall's Tau-b

This section discusses the results of two nonparametric tests, Kendall's Tau-b and Spearman's Rho. These distribution free tests are extremely useful in cases where parametric statistics such as Pearson's r are not appropriate or where there is some question (our case) as to their behavior.

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8. The variable CONLABOY was cut 1/2,3,4/5,6,7 while CONBUSY was cut 1,2/3,4/5,6,7.

The Spearman's rho or rank coefficient is a Pearson's r in actuality but performed instead on the ranks of the data rather than the values themselves. The interpretation of the coefficient is the same as a Pearson's except the relationship deals with ranks and not metric values.

Kendall's Tau-b is a similar coefficient to gamma and is based on the number of concordant and discordant pairs. The distinguishing feature is the particular way it deals with tied ranks.[9]

Spearman's rho yields a slightly higher average inter-item correlation for the seven-point scale items, but of a trivial (-.022) magnitude. Conversely the other distribution free measure utilizing ranks, Kendall's Tau-b, yields a positive difference, a mean difference of .010, but again a figure of trivial impact (Table 4).

3.4 Equal Interval

This section deals with the use of the Pearson correlation with the confidence items. Three different tests were applied to the correlations obtained by using the variables scored with equal distance intervals. This is the case, probably the most common in practice, that utilizes the 13 confidence variables exactly as they are coded (or under some linear transformation) and inputs them directly into a statistical routine that

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9. Marija Norusis states that tau-b " . . . normalizes P - Q by considering ties on each variable in a pair separately but not ties on both variables . . ." (1983:57).

assumes interval-level data.[10]

The first test on the equal interval correlations is a global one, a direct assessment of the equality of the correlation matrices. The test is simple to perform using LISREL. One merely defines the two matrices to be invariant across samples.[11] The difference between the two may be assessed by a chi-square test. The test statistic, with 104 degrees of freedom, is 97.54 which has a p-value of 0.659, hardly significant. The result supports the hypothesis that overall there are no appreciable differences between the inter-item correlations of the three point scale and the seven point version.

The second test simply examines the average of the inter-item correlations and the differences between the forms. Though not technically the best way to proceed (because of r's sampling distribution) it has the advantage of being simple and intuitive. The mean correlations and the average difference are reported in Table 5. The seven-point items have a slightly higher average correlation, some .013 higher than the three-point items, but the difference is not terribly big. The results support the findings of the global

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10. As the SPSS manual has cautioned for years, the program makes no check of level of measurement; its factor analysis subprogram will do a factor analysis on nominal data. Any such decision is left to the analyst and his or her conscience.

11. Technically what is done is to say each observed variable is a perfectly measured indicator of a latent construct. The inter-correlations of the latent variables, the phi matrix in the LISREL terminology, is then just the input correlation matrix of the observed variables. The phi matrix is then constrained to be invariant across samples by use of the PHI=INV parameter on the MODEL card. The statistics reported reflect only the formal test of the 78 constraints on the model, the 78 unique correlations which are set equal to each other.

chi-square test of no difference.

3.5 Normal Scoring

One way to address the problem of transformational error is to provide values for the categories rather than just use equal distance codes. If one assumes or believes the latent variable is distributed in some particular fashion one can estimate categories values based on that assumption. One can think of the observed proportions then, as estimates of the areas under some probability density function of the latent, continuous variable.

It is often convenient to assume the underlying latent variable to possess a normal distribution. Given this assertion we can use the procedure outlined in Guilford(1954:237) to estimate the values for the categories.[12]. The computed category values for three-point and seven-point scales are presented in Table 6.

Standard Pearsonian correlation coefficients were computed for each unique pair of the 13 confidence items for each form (Table 7). The results are virtually identical to the results obtained previously in the equal interval case; a slightly higher mean inter-item correlation for the seven-point scale items, but of a very small magnitude.[13]

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12. This is often referred to as items scoring or more simply psychometric scaling.

13. A global test using LISREL was applied to the matrices of normally scored items. This yielded a test statistic, distributed as chi-square, of 99.35 with a p-value of 0.611, again an insignificant result.

3.6 Fisher's Z Transformation

A proper test of the difference between two correlations requires some prior knowledge of the properties of r. Its sampling distribution is in general not symmetrical.[14] Moreover the distribution becomes more and more skewed as the absolute value of the correlation approaches unity. Because of the difficulties in the computation of confidence intervals and hence of statistical inference, what is normally done is to transform the sample correlation into a new variate with a sampling distribution that is approximately normal and proceed in the usual fashion. This is, of course, the well known Fisher's Z transformation.[15] For both the equal interval correlations and the correlations based on n normal scoring, the Fisher's Z transformation was applied (Tables 8 and 9). Of the 78 unique pairs of correlations for both equal interval and normally scored correlations, only seven were significantly different at the .05 level. Two were positive and five negative. Given chance alone we would expect 4 to exceed the .05 level.

An investigation of the "lack of fit" between the correlations reveals some interesting results. Seven "correlations pairs" of the 78 possible pairs of correlations are significantly different at the .05 level of significance (two tailed) for both Equal Distance and Normal Scoring. In addition these

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14. The distribution is symmetrical only in the trivial case where rho=0.

15. The formula is $z=0.5*\ln[(1+r)/(1-r)]$ where r is the sample r. Its standard error is $1/(N-3)^{1/2}$.

same seven pairs appear to generally cluster at the extremes for the other methods also. The seven pairs are as follows:

- CONFED CONBUS
- CONLEGIS CONCLERGY
- CONARMY CONMEDIC
- CONSCI CONCLERGY
- CONARMY CONSCI
- CONSCI CONJUDGE
- CONSCI CONMEDIC

The correlation for the first two pairs was higher for the three-point version. The remaining five pairs, each involving either "Medicine" or the "Scientific Community", were negative. Though I will not explore it here in this paper, it is suggestive that much of the observed lack of fit is due primarily to the inclusion of the variable "CONSCI" and its variant "CONSCIY", the items which probed the degree of confidence in the Scientific Community.

Previous research (Smith, 1981) has shown this item to be one of the least reliable with only 65.7% of a 1978 sample able to express just what they thought was meant by the term "Scientific Community." Further 5.2% gave irrelevant or wrong answers. It seems plausible to hypothesize that confidence in the scientific community is being measured better by the new scale than the old, leading to higher inter-item correlations, while no such

improvement is found with the other institutions. This is a subject for further research.

3.7 Polychoric Correlations

Rather than rescore the rank category variable and then compute a Pearson product moment correlation, Ulf Olsson approached the problem from a different perspective. He instead generalized the tetrachoric correlation to the general n-category case. Under bivariate normality assumptions, the polychoric correlation may be computed for an n-category polytomous variable.[16]

In using polychoric correlations the analyst is usually struck by the fact that they are much larger than the correlations one normally presented with. In general, Olsson notes, the polychoric correlation is larger in magnitude that the Pearson correlation computed from equal interval, ordinal data. Table 10, summarizing three of this simulations, shows that the polychoric correlation tends to have a slight positive bias. For the purists it should be noted that the polychoric correlation, although more efficient than the tetrachoric correlation, still does not have the statistical properties of the Pearson correlation even asymptotically. Despite its statistical difficulties and the lack of data on robustness, it remains one of the best

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16. Olsson actually derived two procedures, the first a maximum likelihood method that estimates both the thresholds and the value of the correlations simultaneously. The second, though less formally correct, is computationally easier and first computes the thresholds from the cumulative marginal proportions and then estimates the correlation. It is the second, two step procedure that is used here. For the details of the computational procedures see Olsson(1979a).

approximations to the "true" underlying correlation.

To illustrate the differences between the alternative scalings of the variables, I will use an example from Olsson's seminal 1979 article, the data coming from Table 7 of his simulation study.

		Y			
		1	2	3	
	1	13	6	0	3.8%
X	2	69	113	22	40.8
	3	41	132	104	55.4
		24.6%	50.2%	25.2%	

The data were generated from a bivariate normal distribution with a theoretical correlation (rho) of .5000 and a positive skew of unity for the X variable.[17] The generated table, with one skewed variable and one with an approximately normal distribution is a common situation in everyday survey research. Using a computer program written by O'Brien(1984b), we can generate the expected Pearson correlation coefficient given any specified marginal distributions. I generated three different cases: (1)Equal Cell Proportions; (2)Symmetrical 27/46/27 Proportions; and (3)Observed Marginals.

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17. The actual description is as follows:

> The thresholds were placed so that, for each variable, the probabilities of the classes 1, . . ., s were the same as those of a binomial distribution with parameters P and n=s-1. Parameter P was chosen so that the skewness of the distribution attained specified values δ." (1979a:451).

Table 11 is a summary of the reanalysis of Olsson's Table 7.

Theoretically if one assumes equal cell proportions or a roughly normal distribution, approximately 67-68% of the underlying variance is captured (66.75 and 67.80 respectively). Given the marginals (one skewed, one normal), our ability is slightly diminished to some 58% of the variance. If we ignore everything and just compute a Pearson correlation from the data (implicitly assuming equal intervals), we are reduced even more to a little more than half, 55%. The polychoric correlation, however, accurately captures fully 97% of the variance.[18]

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18. Peters and Van Voorhis in their 1940 work, Statistical Procedures and their Mathematical Bases, provide a set of correlation factors for Pearson product moment correlations with a limited number of scale points, which does remarkable well in "correcting" an observed correlation to what the "true" correlation would be.

Assuming classes are centered about the midpoint of the interval:

$$Rx'y' = \frac{Rxy}{Rxx'\ Ryy'}$$

Where:

Rx'y' = Best estimate of bivariate correlation.

Rxy = Pearson product moment correlation with limited number of scale points.

Rxx = Correction factor for X.

Ryy = Correction factor for Y.

For three categories the correction factor is .859, while for seven it is .970. For Olsson's Table 7, the observed correlation of .3697 is "corrected" to 0.5010, a slight overestimate of the true value. As Warren Martin noted "The application of the appropriate set to selected "calculated" rs . . . reveal that the corrected rs are for pragmatic purposes the same as the "true" rs" (1978:307).

As Olsson rightly concluded: "The differences between the correlations estimated by our methods and the correlations computed as if the data had been on an interval scale . . . are seen to be large." (1979a:457).

The polychoric correlation analysis of the confidence items yields results similar to the above with the notable exception the that the mean difference in the polychoric correlations reverses sign indicating a larger average inter-item correlation among the traditional three point scale items.

4 Factor Structure

Olsson(1979b:443) concluded that the application of factor analysis to discrete data may lead to incorrect conclusions regarding the number of factors and to biased estimates of the magnitudes of the factor loadings, especially if the distributions are skewed in opposite direction. O'Brien(1984a:2) notes that "these distortions 'reverberate' throughout the parameter estimates produced by correlation based statistical techniques".

The results of the factor analysis upon the matrices of Equal Interval, Normal Scoring, and Polychoric correlations was inconclusive. While the factor pattern was quite stable across scoring methods and extraction methods within form, there were significant difference across forms.

The three-point version, the traditional question wording and response categories, yielded a factor pattern that may be interpreted. In fact, the results from a reanalysis of previous data suggest further problems with the variable, CONSCI, "Confidence in the Scientific Community."

The factor analysis for the pooled 1980 through 1983 GSSs (weighted in 1982 to account for the oversampling of blacks) resulted in four factors being retained. However there are some discrepancies across factoring methods. In general each factor may be clearly labeled:

- Establishment -- CONFINAN, CONBUS, CONARMY, CONCLERG, and CONEDUC.
- Anti-Establishment -- CONPRESS CONTV, and CONLABOR.
- Government -- CONLEGIS, CONFED, and CONJUDGE.
- Technical/Scientific -- CONSCI and CONMEDIC.

Principal Components analysis clearly reveals the above pattern. For other methods, such as Maximum Likelihood or Unweighted Least Squares, the variable CONMEDIC, "Confidence in Medicine", loads primarily on the "Establishment" factor leaving CONSCI alone to define its own factor. Moreover, an examination of the inter-factor correlation matrix indicates that CONSCI correlates weakly with the other items.[19]

For 1984 the picture is slightly different. Instead of four factors being extracted and retained, there were only three. Even when a four factor solution was imposed upon the data, mixed results appear.[20] The only consistent result is the appearance of the "Anti-Establishment" factor, the

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19. The correlations are .2485, .1914, and -.1489 for factors 1, 3, and 4 respectively. The correlation with factor 1 is higher than the others because of the presence of CONMEDIC. For the principal components analysis, where CONSCI and CONMEDIC defined a factor, the correlations were .1510, .1171, and -.1091 for factors 1, 2, and 4 respectively.

20. Note the first four eigenvalues are 3.73, 1.22, 1.06, and 0.93.

triad of CONPRESS, CONTV, and CONLABOR. The other three factors are either uninterpretable or trivial.

The seven point scale items also produced only three factors, more alike to the pooled 1980-83 results than to 1984 seven point scale results, but different still the same. For the principal components analysis the difference is clear. The "Technical/Scientific" factor splits up with Medicine loading on the "Establishment" factor and the Scientific Community loading on the "Government" dimension. However the Maximum Likelihood and Unweighted Least Squares analysis yield uninterpretable results.

The subtle patterning of the correlations as well as the type of factor model applied to the data, is a topic that deserves far more attention than I will give it in this analysis. It is a topic for further study and thought. Suffice it to say that in general across methods and factor models the 1984 data are different both from each other and from recent years.[21]

5 Conclusions

The conclusions from this study are null; the inter-item correlation is not appreciably different in the seven point version of the confidence questions than in the traditional three point item. This results has been shown to hold for Pearson correlations computed for items with Equal Intervals and Normally Scored. It has been shown for gammas, Spearman's Rho, Kendall's

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21. Note that only the traditional three-point item was used for the analyses on earlier years.

Tau-b. Even for what one could argue is the most appropriate correlation, the polychoric, the same pattern has held.

This only difference one can find is in the application of the methods of factor analysis to the matrices of correlations. There one obtains peculiar results, but results that are different from historical trends and may reflect some idiosyncratic nature of the 1984 data rather than a global truth.

We have some cause to echo Jacoby and Matell's 1970 assertion and Benson's 1971 support that the practical convenience make three point Likert scales "good enough." While caution should be exercised anytime one applies techniques that are clearly not appropriate to a set of data, it appears from the results presented here that investigators may continue to do so without undo violence to the data.

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XY

IF FORM "X" OR "Y" ASK Q.32. FORM "Z" GO TO Q.33:

32. I am going to name some institutions in this country. As far as the people running these institutions are concerned, would you say you have a great deal of confidence, only some confidence, or hardly any confidence at all in them? READ EACH ITEM, CODE ONE FOR EACH. REPEAT THE QUESTION, OR CATEGORIES, AS NECESSARY.

HAND CARD D		A great deal of confidence	Only some confidence	Hardly any confidence at all	DON'T KNOW
A.	Major companies	1	2	3	8
B.	Organized religion	1	2	3	8
C.	Education	1	2	3	8
D.	Executive branch of the federal government	1	2	3	8
E.	Organized labor	1	2	3	8
F.	Press	1	2	3	8
G.	Medicine	1	2	3	8
H.	TV	1	2	3	8
I.	U.S. Supreme Court	1	2	3	8
J.	Scientific community	1	2	3	8
K.	Congress	1	2	3	8
L.	Military	1	2	3	8
M.	Banks and financial institutions	1	2	3	8

SKIP TO Q.34

IF FORM "Z" ASK Q.33. FORMS "X" AND "Y" GO TO Q.34:

(Z)

33. I am going to name some institutions in this country. Some people have complete confidence in the people running these institutions. Suppose these people are at one end of the scale at point number 1. Other people have no confidence at all in the people running these institutions. Suppose these people are at the other end, at point 7. And, of course, other people have opinions somewhere in between at point 2, 3, 4, 5 or 6. Where would you place yourself on this scale for . . . READ EACH ITEM, CODE ONE FOR EACH. REPEAT THE QUESTION AS NECESSARY.

HAND CARD E		Complete Confidence						No Confidence At All	DON'T KNOW
A.	Major companies	01	02	03	04	05	06	07	98
B.	Organized religion	01	02	03	04	05	06	07	98
C.	Education	01	02	03	04	05	06	07	98
D.	Executive branch of the federal government	01	02	03	04	05	06	07	98
E.	Organized labor	01	02	03	04	05	06	07	98
F.	Press	01	02	03	04	05	06	07	98
G.	Medicine	01	02	03	04	05	06	07	98
H.	TV	01	02	03	04	05	06	07	98
I.	U.S. Supreme Court	01	02	03	04	05	06	07	98
J.	Scientific community	01	02	03	04	05	06	07	98
K.	Congress	01	02	03	04	05	06	07	98
L.	Military	01	02	03	04	05	06	07	98
M.	Banks and financial institutions	01	02	03	04	05	06	07	98

Table 1

Confidence Distributions of Three- and Seven-Point Scales

	Form XY			Form Z						
	GD	OS	HA	1	2	3	4	5	6	7
FINAN	32.5	56.5	11.0	13.5	19.7	21.0	24.0	8.4	6.9	6.6
BUS	31.8	59.2	9.0	11.4	16.6	22.3	31.0	12.0	3.5	3.3
CLERG	32.2	48.4	19.5	17.9	17.2	17.7	20.0	10.6	8.8	7.8
EDUC	28.8	60.6	10.7	8.9	17.2	19.5	20.8	17.2	11.7	4.9
FED	19.0	51.7	29.4	7.5	14.5	14.5	22.8	14.9	13.2	12.6
LABOR	8.8	54.2	37.0	6.5	9.7	14.2	25.4	17.2	13.8	13.1
PRESS	17.3	59.9	22.8	8.5	14.2	16.1	24.6	15.0	14.6	7.0
MEDIC	51.5	42.0	6.4	18.0	29.2	20.1	14.0	8.9	5.7	4.0
TV	13.4	57.8	28.8	7.4	10.8	13.8	28.4	15.7	13.8	10.2
JUDGE	34.5	52.7	12.8	11.4	23.1	20.3	19.4	11.1	8.1	6.6
SCI	47.4	46.7	5.9	14.3	27.4	22.4	19.7	7.0	6.3	2.9
LEGIS	12.7	65.0	22.2	4.3	11.4	19.6	27.8	17.7	11.9	7.3
ARMY	37.1	49.8	13.2	16.4	15.9	17.7	24.4	13.8	7.3	4.5

Source: 1984 General Social Survey.

Table 2

Comparison of Interitem Gammas

VARIABLES		3 Pt.	7 Pt.	Collapsed[1] 7 Pt.	Collapsed[2] 7 Pt.
CONFINAN	CONBUS	0.52264	0.33079	0.43830	0.42469
CONFINAN	CONCLERG	0.29147	0.26734	0.41322	0.32082
CONFINAN	CONEDUC	0.43513	0.25665	0.37996	0.31812
CONFINAN	CONFED	0.44353	0.27316	0.35179	0.37630
CONFINAN	CONLABOR	0.23803	0.17318	0.27387	0.16533
CONFINAN	CONPRESS	0.27290	0.16699	0.23672	0.15325
CONFINAN	CONMEDIC	0.39219	0.31468	0.40570	0.37118
CONFINAN	CONTV	0.40289	0.27641	0.37352	0.33645
CONFINAN	CONJUDGE	0.38543	0.24780	0.27173	0.32521
CONFINAN	CONSCI	0.34854	0.28213	0.33707	0.34130
CONFINAN	CONLEGIS	0.44842	0.27702	0.34553	0.33652
CONFINAN	CONARMY	0.50629	0.38339	0.50909	0.45785
CONBUS	CONCLERG	0.27099	0.18581	0.25221	0.29156
CONBUS	CONEDUC	0.32911	0.16022	0.18935	0.23616
CONBUS	CONFED	0.54410	0.22785	0.23274	0.30963
CONBUS	CONLABOR	0.23783	0.14914	0.09812	0.22184
CONBUS	CONPRESS	0.30017	0.16248	0.26544	0.17543
CONBUS	CONMEDIC	0.40296	0.28828	0.27936	0.43672
CONBUS	CONTV	0.35754	0.13989	0.25163	0.13281
CONBUS	CONJUDGE	0.45254	0.21092	0.23521	0.25504
CONBUS	CONSCI	0.46935	0.34819	0.44389	0.39789
CONBUS	CONLEGIS	0.41226	0.22839	0.31757	0.27926
CONBUS	CONARMY	0.33253	0.28151	0.32173	0.39643
CONCLERG	CONEDUC	0.35936	0.21265	0.26377	0.25053
CONCLERG	CONFED	0.31842	0.12687	0.10842	0.24755
CONCLERG	CONLABOR	0.13936	0.10663	0.15024	0.14698
CONCLERG	CONPRESS	0.20266	0.12042	0.18286	0.16943
CONCLERG	CONMEDIC	0.22760	0.20668	0.28888	0.29560
CONCLERG	CONTV	0.23631	0.10686	0.17095	0.13641
CONCLERG	CONJUDGE	0.29440	0.14221	0.15851	0.24249
CONCLERG	CONSCI	0.14445	0.20480	0.29533	0.29279
CONCLERG	CONLEGIS	0.35689	0.10292	0.10705	0.17462
CONCLERG	CONARMY	0.24800	0.23396	0.29538	0.26892
CONEDUC	CONFED	0.40066	0.31458	0.44525	0.39587
CONEDUC	CONLABOR	0.35950	0.18470	0.33667	0.24495
CONEDUC	CONPRESS	0.31769	0.15251	0.23760	0.15992
CONEDUC	CONMEDIC	0.33638	0.29762	0.33081	0.39739
CONEDUC	CONTV	0.37992	0.12563	0.20955	0.15585
CONEDUC	CONJUDGE	0.37090	0.21542	0.27565	0.27235
CONEDUC	CONSCI	0.24576	0.15883	0.22269	0.19948
CONEDUC	CONLEGIS	0.50646	0.28128	0.38264	0.35228

CONEDUC	CONARMY	0.46270	0.27627	0.36349	0.33817
CONFED	CONLABOR	0.24346	0.23005	0.28684	0.34831
CONFED	CONPRESS	0.23202	0.13490	0.19634	0.17155
CONFED	CONMEDIC	0.29698	0.19979	0.22775	0.25369
CONFED	CONTV	0.25142	0.18357	0.21617	0.29275
CONFED	CONJUDGE	0.56314	0.41455	0.53999	0.51923
CONFED	CONSCI	0.37425	0.23699	0.30197	0.30433
CONFED	CONLEGIS	0.63340	0.46196	0.62448	0.56182
CONFED	CONARMY	0.50656	0.28136	0.35639	0.43268
CONLABOR	CONPRESS	0.45289	0.30456	0.40181	0.37273
CONLABOR	CONMEDIC	0.29115	0.13389	0.17049	0.08760
CONLABOR	CONTV	0.38115	0.21796	0.33055	0.29315
CONLABOR	CONJUDGE	0.26891	0.21273	0.29644	0.26222
CONLABOR	CONSCI	0.09307	0.12956	0.13413	0.10670
CONLABOR	CONLEGIS	0.45795	0.33582	0.44460	0.44128
CONLABOR	CONARMY	0.31654	0.22765	0.37578	0.29246
CONPRESS	CONMEDIC	0.34654	0.22208	0.32031	0.24895
CONPRESS	CONTV	0.56285	0.36598	0.45741	0.44948
CONPRESS	CONJUDGE	0.43269	0.20318	0.33010	0.27701
CONPRESS	CONSCI	0.23183	0.17897	0.24647	0.20851
CONPRESS	CONLEGIS	0.32692	0.26274	0.42243	0.32018
CONPRESS	CONARMY	0.17200	0.13455	0.21672	0.11689
CONMEDIC	CONTV	0.32307	0.17158	0.28962	0.09697
CONMEDIC	CONJUDGE	0.43279	0.33856	0.41963	0.49288
CONMEDIC	CONSCI	0.39574	0.34184	0.40449	0.58551
CONMEDIC	CONLEGIS	0.32614	0.27308	0.31633	0.30231
CONMEDIC	CONARMY	0.31450	0.35686	0.38505	0.37930
CONTV	CONJUDGE	0.31536	0.18264	0.23242	0.22279
CONTV	CONSCI	0.11993	0.07827	0.06048	0.03576
CONTV	CONLEGIS	0.28250	0.23531	0.33723	0.28355
CONTV	CONARMY	0.31586	0.25995	0.46001	0.27821
CONJUDGE	CONSCI	0.53113	0.47162	0.61223	0.57298
CONJUDGE	CONLEGIS	0.62690	0.44533	0.54945	0.53513
CONJUDGE	CONARMY	0.35188	0.21778	0.29529	0.25205
CONSCI	CONLEGIS	0.46749	0.32189	0.43743	0.35904
CONSCI	CONARMY	0.18789	0.25744	0.32573	0.24861
CONLEGIS	CONARMY	0.51231	0.32069	0.46571	0.37655

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[1]The 7-point scale was collapsed with the cuts: 1,2/3,4,5/6,7

[2]The 7-point scale was collapsed with the cuts: 1,2,3/4/5,6,7

Table 3

Comparison of Inter-item Gammas

	Mean	Difference from 3 point
3 point Scale	.354	-
7 point Scale	.238	.117
7 point (Collapsed)[1]	.315	.040
7 point (Collapsed)[2]	.297	.057
7 point (Collapsed)[3]	.311	.043

[1]Scales are cut as follows: 1,2/3,4,5/6,7.

[2]Scales are cut as follows: 1,2,3/4/5,6,7.

[3]CONBUSY is cut as 1,2/3,4/5,6,7; CONLABOY is cut as 1/2,3,4/5,6,7; and the remainder as 1,2/3,4,5/6,7.

Table 4

Comparison of Spearman Correlation Coefficients

VAR1	VAR2	SPEARXY	SPEARZ	DIFF1
CONFED	CONBUS	.350597	.230277	.120320
CONLEGIS	CONCLERG	.223616	.106342	.117274
CONTV	CONEDUC	.231158	.130374	.100784
CONFED	CONCLERG	.218938	.139181	.079757
CONTV	CONBUS	.217052	.140338	.076714
CONJUDGE	CONBUS	.283158	.215320	.067838
CONJUDGE	CONPRESS	.275124	.208934	.066190
CONARMY	CONFED	.343593	.286191	.057402
CONJUDGE	CONCLERG	.196308	.149500	.046808
CONTV	CONCLERG	.155298	.110933	.044365
CONMEDIC	CONLABOR	.173640	.138209	.035431
CONPRESS	CONEDUC	.193514	.161962	.031552
CONEDUC	CONBUS	.195009	.164292	.030717
CONLABOR	CONEDUC	.215975	.196031	.019944
CONTV	CONMEDIC	.195167	.176450	.018717
CONPRESS	CONBUS	.181418	.166092	.015326
CONJUDGE	CONTV	.199749	.188130	.011619
CONLEGIS	CONBUS	.240010	.229386	.010624
CONARMY	CONEDUC	.295609	.285525	.010084
CONFED	CONFINAN	.291448	.281377	.010071
CONARMY	CONJUDGE	.230387	.220430	.009957
CONPRESS	CONFED	.151800	.142597	.009203
CONPRESS	CONCLERG	.132045	.125083	.006962
CONEDUC	CONFINAN	.269125	.262549	.006576
CONEDUC	CONCLERG	.232208	.225854	.006354
CONLEGIS	CONEDUC	.297387	.292062	.005325
CONTV	CONLABOR	.237308	.232278	.005030
CONJUDGE	CONEDUC	.231539	.227607	.003932
CONBUS	CONFINAN	.329236	.330302	-.001066
CONARMY	CONLEGIS	.319357	.321185	-.001828
CONJUDGE	CONFINAN	.245845	.249008	-.003163
CONPRESS	CONFINAN	.168065	.174555	-.006490
CONTV	CONPRESS	.367004	.374435	-.007431
CONSCI	CONFED	.236837	.244345	-.007508
CONSCI	CONTV	.071498	.081345	-.009848
CONLABOR	CONBUS	.141645	.153068	-.011423
CONLEGIS	CONFINAN	.269775	.281263	-.011488
CONMEDIC	CONPRESS	.209434	.225394	-.015960
CONMEDIC	CONFED	.187307	.203364	-.016057
CONSCI	CONEDUC	.144006	.161858	-.017852
CONCLERG	CONBUS	.172612	.192382	-.019770
CONTV	CONFED	.163793	.186282	-.022489
CONLABOR	CONCLERG	.090213	.113145	-.022932

CONTV	CONFINAN	.251566	.281786	-.030220
CONARMY	CONPRESS	.110107	.142393	-.032286
CONPRESS	CONLABOR	.282404	.315539	-.033135
CONLABOR	CONFINAN	.145655	.180674	-.035019
CONARMY	CONLABOR	.199625	.237707	-.038082
CONSCI	CONPRESS	.139615	.180316	-.040701
CONMEDIC	CONBUS	.237657	.283547	-.045890
CONJUDGE	CONFED	.383012	.429943	-.046931
CONLEGIS	CONFED	.421572	.468533	-.046961
CONJUDGE	CONLABOR	.167818	.220516	-.052698
CONLEGIS	CONJUDGE	.396969	.450039	-.053070
CONLEGIS	CONSCI	.271583	.325252	-.053669
CONARMY	CONFINAN	.330252	.385161	-.054909
CONMEDIC	CONCLERG	.145445	.209462	-.064017
CONSCI	CONBUS	.282470	.348965	-.066495
CONFED	CONEDUC	.257782	.326516	-.068734
CONARMY	CONTV	.201838	.271429	-.069591
CONLEGIS	CONLABOR	.275007	.346601	-.071594
CONLEGIS	CONTV	.168911	.241610	-.072699
CONSCI	CONFINAN	.210690	.283473	-.072783
CONJUDGE	CONMEDIC	.270503	.344183	-.073680
CONLEGIS	CONPRESS	.196263	.270520	-.074257
CONARMY	CONBUS	.207033	.281496	-.074463
CONMEDIC	CONFINAN	.237155	.311940	-.074785
CONARMY	CONCLERG	.167336	.245760	-.078424
CONSCI	CONLABOR	.054931	.134844	-.079913
CONCLERG	CONFINAN	.190536	.275935	-.085399
CONLEGIS	CONMEDIC	.188304	.274886	-.086582
CONLABOR	CONFED	.156150	.242744	-.086594
CONSCI	CONMEDIC	.237958	.335988	-.098030
CONMEDIC	CONEDUC	.198164	.303775	-.105611
CONSCI	CONCLERG	.091583	.210803	-.119220
CONSCI	CONJUDGE	.340496	.472438	-.131942
CONARMY	CONSCI	.116288	.263439	-.147151
CONARMY	CONMEDIC	.196672	.363315	-.166643

Source: 1984 General Social Survey.

Table 5

Comparison of Correlations Using Equal Interval Scoring

VARIABLES		FORM XY	FORM Z	DIFFERENCE
CONFED	CONBUS	.351430	.219611	.131819
CONLEGIS	CONCLERG	.225713	.101344	.124369
CONTV	CONBUS	.227414	.134638	.092776
CONTV	CONEDUC	.226637	.135591	.091045
CONJUDGE	CONBUS	.287361	.205823	.081538
CONFED	CONCLERG	.214754	.143027	.071728
CONMEDIC	CONLABOR	.169112	.099549	.069563
CONJUDGE	CONPRESS	.274588	.205593	.068995
CONARMY	CONFED	.352453	.293700	.058753
CONJUDGE	CONCLERG	.199358	.141494	.057864
CONEDUC	CONBUS	.193206	.151190	.042016
CONTV	CONCLERG	.159086	.120400	.038686
CONBUS	CONFINAN	.330319	.296423	.033896
CONJUDGE	CONFINAN	.244306	.212565	.031741
CONARMY	CONJUDGE	.231015	.201019	.029996
CONLABOR	CONEDUC	.211749	.181956	.029792
CONLEGIS	CONBUS	.245103	.219745	.025358
CONPRESS	CONEDUC	.194163	.171581	.022582
CONTV	CONMEDIC	.196051	.174780	.021271
CONTV	CONLABOR	.246199	.226251	.019949
CONPRESS	CONFED	.155450	.140256	.015195
CONPRESS	CONBUS	.185079	.170072	.015007
CONPRESS	CONCLERG	.134198	.122188	.012011
CONLABOR	CONBUS	.142829	.131109	.011720
CONEDUC	CONFINAN	.266628	.256210	.010418
CONFED	CONFINAN	.291616	.281582	.010035
CONEDUC	CONCLERG	.225584	.215649	.009935
CONJUDGE	CONTV	.198448	.190203	.008245
CONARMY	CONEDUC	.290257	.282164	.008094
CONLEGIS	CONEDUC	.296859	.289405	.007454
CONJUDGE	CONEDUC	.234707	.228647	.006061
CONCLERG	CONBUS	.177151	.174165	.002986
CONARMY	CONLEGIS	.324961	.322550	.002412
CONTV	CONFED	.167737	.165794	.001944
CONPRESS	CONFINAN	.165868	.164383	.001485
CONTV	CONPRESS	.371255	.373083	-.001828
CONMEDIC	CONFED	.191779	.196762	-.004983
CONLEGIS	CONFINAN	.270826	.276189	-.005362
CONLABOR	CONCLERG	.088593	.094589	-.005996
CONSCI	CONTV	.070574	.077454	-.006880
CONMEDIC	CONPRESS	.203303	.217073	-.013770

CONSCI	CONFED	.236107	.250060	-.013953
CONSCI	CONEDUC	.139084	.153688	-.014604
CONMEDIC	CONBUS	.236458	.252608	-.016150
CONLABOR	CONFINAN	.151300	.167463	-.016163
CONTV	CONFINAN	.260805	.280168	-.019364
CONARMY	CONLABOR	.215032	.238181	-.023149
CONSCI	CONPRESS	.139580	.163156	-.023576
CONPRESS	CONLABOR	.288395	.315881	-.027486
CONSCI	CONBUS	.274514	.305114	-.030600
CONMEDIC	CONFINAN	.248652	.280673	-.032021
CONARMY	CONBUS	.211967	.247770	-.035803
CONJUDGE	CONLABOR	.177289	.220479	-.043189
CONARMY	CONPRESS	.101889	.146147	-.044258
CONARMY	CONFINAN	.321337	.366530	-.045193
CONJUDGE	CONFED	.382739	.428019	-.045280
CONLEGIS	CONFED	.420296	.469672	-.049376
CONSCI	CONLABOR	.065166	.117508	-.052341
CONMEDIC	CONCLERG	.145913	.199374	-.053461
CONLEGIS	CONJUDGE	.402186	.459733	-.057547
CONSCI	CONFINAN	.206054	.269156	-.063103
CONLEGIS	CONLABOR	.270885	.334938	-.064053
CONLEGIS	CONSCI	.273875	.338162	-.064287
CONLABOR	CONFED	.165112	.230736	-.065624
CONLEGIS	CONTV	.175341	.245947	-.070606
CONLEGIS	CONPRESS	.197087	.267843	-.070756
CONMEDIC	CONEDUC	.205803	.277055	-.071251
CONFED	CONEDUC	.256977	.328412	-.071435
CONLEGIS	CONMEDIC	.194704	.266850	-.072146
CONARMY	CONCLERG	.170077	.245427	-.075350
CONARMY	CONTV	.206039	.287618	-.081578
CONJUDGE	CONMEDIC	.275156	.357181	-.082024
CONCLERG	CONFINAN	.185697	.274146	-.088449
CONARMY	CONMEDIC	.199193	.303904	-.104711
CONSCI	CONCLERG	.093877	.217810	-.123933
CONSCI	CONJUDGE	.329966	.457101	-.127136
CONARMY	CONSCI	.119256	.251622	-.132366
CONSCI	CONMEDIC	.243882	.380498	-.136616

Source: 1984 General Social Survey

Table 6

Category Values for Normal Scoring -- Three Point Scale

	Categories		
Variable	1	2	3
CONFINAN	-1.1092	.3067	1.7018
CONBUS	-1.1233	.3287	1.8067
CONCLERG	-1.1146	.1721	1.4133
CONEDUC	-0.7372	.0452	1.7280
CONFED	-1.4258	-.1429	1.1728
CONLABOR	-1.8227	-.4011	1.0211
CONPRESS	-1.4827	-.0783	1.3307
CONMEDIC	-0.7740	.6498	1.9641
CONTV	-1.6082	-.2171	1.1840
CONJUDGE	-1.0675	.2991	1.6461
CONSCI	-0.8397	.6032	1.9712
CONLEGIS	-1.6333	-.1322	1.3360
CONARMY	-1.0183	.3307	1.6144

Table 6 Continued

Category Values for Normal Scoring -- Seven Point Scale

	Categories						
Variable	1	2	3	4	5	6	7
CONFINAY	-1.6141	-.7401	-.1586	.4279	.9095	1.2812	1.9621
CONBUSY	-1.6833	-.8753	-.2767	.4206	1.1417	1.6600	2.2242
CONCLERY	-1.4598	-.6390	-.1514	.3340	.7736	1.1773	1.8667
CONEDUCY	-1.8022	-.9576	-.3662	.1500	.6047	1.3735	2.0531
CONFEDY	-1.8867	-1.0697	-.5421	-.0583	.4396	0.8871	1.6341
CONLABOY	-1.9338	-1.2237	-.7458	-.1740	.3680	0.8558	1.6267
CONPRESY	-1.8365	-1.0211	-.5056	.0244	.5633	1.0863	1.9057
CONMEDIY	-1.4517	-.4682	.1866	.6571	1.0910	1.4930	2.1575
CONTVY	-1.8838	-1.1509	-.6775	-.1004	.4815	0.9565	1.7461
CONJUDGY	-1.6833	-.7636	-.1369	.3768	.8387	1.2630	1.9333
CONSCIY	-1.5909	-.5938	.0728	.6574	1.1386	1.5524	2.3069
CONLEGIY	-2.1140	-1.3044	-.6714	-.0191	.5836	1.1244	1.9096
CONARMYY	-1.5049	-.7050	-.2260	.3111	.8993	1.4137	2.1267

Table 7

Differences Between Correlations Using Normal Scoring

VARIABLES		FORM XY	FORM Z	DIFFERENCE
CONFED	CONBUS	.351438	.222635	.128803
CONLEGIS	CONCLERG	.225379	.098695	.126684
CONTV	CONBUS	.227871	.134399	.093472
CONJUDGE	CONPRESS	.274692	.191693	.082999
CONFED	CONCLERG	.215715	.133233	.082482
CONJUDGE	CONBUS	.287531	.217769	.069762
CONTV	CONEDUC	.201704	.134337	.067367
CONARMY	CONFED	.351385	.287510	.063875
CONJUDGE	CONCLERG	.199071	.142276	.056795
CONMEDIC	CONLABOR	.170292	.127514	.042778
CONTV	CONCLERG	.158771	.117002	.041769
CONBUS	CONFINAN	.330058	.301100	.028958
CONEDUC	CONBUS	.171421	.142934	.028487
CONTV	CONLABOR	.246138	.220652	.025486
CONLEGIS	CONBUS	.245319	.221418	.023901
CONPRESS	CONFED	.154895	.134508	.020387
CONARMY	CONJUDGE	.231178	.214361	.016817
CONPRESS	CONCLERG	.133739	.119319	.014420
CONTV	CONFED	.167410	.153126	.014284
CONJUDGE	CONFINAN	.244455	.233169	.011286
CONPRESS	CONBUS	.185163	.174658	.010505
CONFED	CONFINAN	.291271	.280897	.010374
CONJUDGE	CONTV	.198596	.189992	.008604
CONLABOR	CONBUS	.142764	.136557	.006207
CONCLERG	CONBUS	.177859	.172586	.005273
CONLABOR	CONEDUC	.176357	.173445	.002912
CONPRESS	CONEDUC	.183045	.182272	.000773
CONTV	CONPRESS	.371104	.371526	-.000422
CONJUDGE	CONEDUC	.230671	.231345	-.000674
CONARMY	CONLEGIS	.325108	.326420	-.001312
CONTV	CONMEDIC	.196553	.198428	-.001875
CONLABOR	CONCLERG	.088292	.091928	-.003637
CONEDUC	CONFINAN	.250040	.255306	-.005266
CONMEDIC	CONFED	.191538	.203586	-.012048
CONLEGIS	CONFINAN	.271135	.286101	-.014966
CONARMY	CONLABOR	.214939	.230493	-.015554
CONPRESS	CONFINAN	.166045	.182066	-.016021
CONLEGIS	CONEDUC	.269174	.288136	-.018962
CONARMY	CONEDUC	.270458	.290375	-.019917
CONMEDIC	CONPRESS	.204612	.224570	-.019958
CONSCI	CONEDUC	.126612	.147469	-.020857
CONTV	CONFINAN	.260491	.284116	-.023625
CONLABOR	CONFINAN	.151427	.175064	-.023637

CONEDUC	CONCLERG	.203034	.226675	-.023641
CONPRESS	CONLABOR	.288322	.315040	-.026718
CONSCI	CONFED	.236317	.263065	-.026748
CONMEDIC	CONBUS	.237164	.264634	-.027470
CONSCI	CONPRESS	.139811	.168744	-.028933
CONSCI	CONTV	.070723	.103732	-.033008
CONARMY	CONBUS	.211653	.251088	-.039435
CONJUDGE	CONLABOR	.176849	.218745	-.041896
CONLEGIS	CONFED	.420877	.466483	-.045606
CONARMY	CONPRESS	.103433	.152358	-.048925
CONJUDGE	CONFED	.383172	.433388	-.050216
CONMEDIC	CONCLERG	.145953	.196632	-.050679
CONMEDIC	CONFINAN	.247820	.301362	-.053542
CONSCI	CONBUS	.274807	.329124	-.054317
CONARMY	CONFINAN	.322473	.378869	-.056396
CONLABOR	CONFED	.164795	.222718	-.057923
CONLEGIS	CONPRESS	.197183	.259356	-.062173
CONLEGIS	CONJUDGE	.401929	.467838	-.065909
CONLEGIS	CONLABOR	.270865	.337239	-.066374
CONLEGIS	CONTV	.175677	.247720	-.072043
CONSCI	CONLABOR	.064704	.136929	-.072225
CONJUDGE	CONMEDIC	.274825	.348559	-.073734
CONLEGIS	CONSCI	.274198	.350190	-.075992
CONARMY	CONTV	.205951	.282146	-.076195
CONSCI	CONFINAN	.206631	.283629	-.076998
CONMEDIC	CONEDUC	.203752	.286716	-.082964
CONARMY	CONCLERG	.169765	.255253	-.085488
CONFED	CONEDUC	.236268	.327105	-.090837
CONCLERG	CONFINAN	.186708	.279507	-.092799
CONLEGIS	CONMEDIC	.193720	.296322	-.102602
CONSCI	CONMEDIC	.243480	.353946	-.110466
CONSCI	CONCLERG	.093784	.213023	-.119239
CONSCI	CONJUDGE	.331005	.466286	-.135281
CONARMY	CONMEDIC	.199176	.342641	-.143465
CONARMY	CONSCI	.119105	.270347	-.151242

Source: 1984 General Social Survey

Table 8

Comparison of Equal Interval Correlations Using Fisher's Z

VAR1	VAR2	PAIRXY	PAIRZ	Z1	Z2	NORMDEV1	PVALUE1
CONFED	CONBUS	.351430	.219611	.367074	.223247	2.504	.012
CONLEGIS	CONCLERG	.225713	.101344	.229668	.101694	2.227	.026
CONTV	CONBUS	.227414	.134638	.231461	.135460	1.676	.094
CONTV	CONEDUC	.226637	.135591	.230641	.136432	1.664	.096
CONJUDGE	CONBUS	.287361	.205823	.295687	.208806	1.505	.132
CONFED	CONCLERG	.214754	.143027	.218150	.144014	1.296	.195
CONJUDGE	CONPRESS	.274588	.205593	.281819	.208565	1.279	.201
CONMEDIC	CONLABOR	.169112	.099549	.170752	.099880	1.245	.213
CONARMY	CONFED	.352453	.293700	.368242	.302611	1.151	.250
CONJUDGE	CONCLERG	.199358	.141494	.202064	.142450	1.032	.302
CONEDUC	CONBUS	.193206	.151190	.195665	.152358	.755	.450
CONTV	CONCLERG	.159086	.120400	.160449	.120986	.692	.489
CONBUS	CONFINAN	.330319	.296423	.343186	.305593	.654	.513
CONJUDGE	CONFINAN	.244306	.212565	.249349	.215856	.583	.560
CONARMY	CONJUDGE	.231015	.201019	.235262	.203795	.547	.584
CONLABOR	CONEDUC	.211749	.181956	.215001	.184005	.544	.587
CONLEGIS	CONBUS	.245103	.219745	.250196	.223388	.465	.642
CONPRESS	CONEDUC	.194163	.171581	.196660	.173295	.413	.680
CONTV	CONMEDIC	.196051	.174780	.198622	.176593	.390	.697
CONTV	CONLABOR	.246199	.226251	.251363	.230234	.371	.710
CONPRESS	CONFED	.155450	.140256	.156721	.141186	.274	.784
CONPRESS	CONBUS	.185079	.170072	.187237	.171741	.271	.787
CONPRESS	CONCLERG	.134198	.122188	.135013	.122801	.214	.830
CONLABOR	CONBUS	.142829	.131109	.143812	.131868	.208	.836
CONEDUC	CONFINAN	.266628	.256210	.273231	.262048	.196	.844
CONFED	CONFINAN	.291616	.281582	.300332	.289399	.192	.848
CONEDUC	CONCLERG	.225584	.215649	.229532	.219088	.183	.855
CONARMY	CONEDUC	.290257	.282164	.298847	.290031	.154	.877
CONJUDGE	CONTV	.198448	.190203	.201117	.192548	.150	.881
CONLEGIS	CONEDUC	.296859	.289405	.306071	.297917	.143	.886
CONJUDGE	CONEDUC	.234707	.228647	.239165	.232761	.112	.911
CONCLERG	CONBUS	.177151	.174165	.179040	.175959	.053	.957
CONARMY	CONLEGIS	.324961	.322550	.337184	.334490	.047	.962
CONTV	CONFED	.167737	.165794	.169338	.167338	.035	.972
CONPRESS	CONFINAN	.165868	.164383	.167415	.165888	.027	.979
CONTV	CONPRESS	.371255	.373083	.389878	.391999	-.038	.970
CONMEDIC	CONFED	.191779	.196762	.194183	.199362	-.091	.927
CONLEGIS	CONFINAN	.270826	.276189	.277756	.283551	-.102	.919
CONLABOR	CONCLERG	.088593	.094589	.088826	.094873	-.105	.916
CONSCI	CONTV	.070574	.077454	.070691	.077610	-.119	.905
CONMEDIC	CONPRESS	.203303	.217073	.206175	.220582	-.255	.799
CONSCI	CONFED	.236107	.250060	.240647	.255477	-.255	.799
CONSCI	CONEDUC	.139084	.153688	.139992	.154916	-.257	.797

CONLABOR	CONFINAN	.151300	.167463	.152471	.169055	-.290	.772
CONMEDIC	CONBUS	.236458	.252608	.241020	.258197	-.300	.764
CONTV	CONFINAN	.260805	.280168	.266972	.287865	-.368	.713
CONSCI	CONPRESS	.139580	.163156	.140497	.164627	-.416	.677
CONARMY	CONLABOR	.215032	.238181	.218441	.242845	-.426	.670
CONPRESS	CONLABOR	.288395	.315881	.296814	.327065	-.532	.595
CONSCI	CONBUS	.274514	.305114	.281739	.315149	-.573	.567
CONMEDIC	CONFINAN	.248652	.280673	.253976	.288412	-.606	.545
CONARMY	CONBUS	.211967	.247770	.215230	.253036	-.656	.512
CONJUDGE	CONLABOR	.177289	.220479	.179183	.224159	-.782	.434
CONARMY	CONPRESS	.101889	.146147	.102244	.147201	-.790	.430
CONARMY	CONFINAN	.321337	.366530	.333137	.384408	-.898	.369
CONSCI	CONLABOR	.065166	.117508	.065259	.118053	-.909	.364
CONJUDGE	CONFED	.382739	.428019	.403265	.457469	-.945	.345
CONMEDIC	CONCLERG	.145913	.199374	.146962	.202081	-.966	.334
CONLEGIS	CONFED	.420296	.469672	.448051	.509649	-1.081	.280
CONSCI	CONFINAN	.206054	.269156	.209047	.275954	-1.153	.249
CONLABOR	CONFED	.165112	.230736	.166637	.234966	-1.199	.230
CONLEGIS	CONSCI	.273875	.338162	.281049	.352016	-1.220	.223
CONLEGIS	CONJUDGE	.402186	.459733	.426254	.496973	-1.230	.219
CONLEGIS	CONLABOR	.270885	.334938	.277819	.348380	-1.233	.218
CONLEGIS	CONTV	.175341	.245947	.177172	.251094	-1.299	.194
CONLEGIS	CONPRESS	.197087	.267843	.199700	.274539	-1.316	.188
CONMEDIC	CONEDUC	.205803	.277055	.208785	.284489	-1.338	.181
CONLEGIS	CONMEDIC	.194704	.266850	.197222	.273469	-1.339	.181
CONARMY	CONCLERG	.170077	.245427	.171746	.250541	-1.373	.170
CONFED	CONEDUC	.256977	.328412	.262869	.341047	-1.376	.169
CONARMY	CONTV	.206039	.287618	.209031	.295967	-1.528	.127
CONJUDGE	CONMEDIC	.275156	.357181	.282434	.373650	-1.592	.111
CONCLERG	CONFINAN	.185697	.274146	.187877	.281342	-1.631	.103
CONARMY	CONMEDIC	.199193	.303904	.201892	.313815	-1.964	.049
CONSCI	CONCLERG	.093877	.217810	.094154	.221356	-2.181	.029
CONARMY	CONSCI	.119256	.251622	.119826	.257144	-2.365	.018
CONSCI	CONJUDGE	.329966	.457101	.342790	.493641	-2.586	.010
CONSCI	CONMEDIC	.243882	.380498	.248897	.400642	-2.614	.009

Table 9

Comparison of Equal Interval Correlations Using Fisher's Z

VAR1	VAR2	RECXY	RECZ	Z3	Z4	NORMDEV2	PVALUE2
CONFED	CONBUS	.351438	.222635	.367083	.226427	2.449	.014
CONLEGIS	CONCLERG	.225379	.098695	.229316	.099017	2.268	.023
CONTV	CONBUS	.227871	.134399	.231943	.135217	1.689	.091
CONJUDGE	CONPRESS	.274692	.191693	.281932	.194094	1.534	.125
CONFED	CONCLERG	.215715	.133233	.219158	.134030	1.488	.137
CONJUDGE	CONBUS	.287531	.217769	.295873	.221313	1.291	.197
CONARMY	CONFED	.351385	.287510	.367023	.295850	1.248	.212
CONTV	CONEDUC	.201704	.134337	.204508	.135154	1.225	.221
CONJUDGE	CONCLERG	.199071	.142276	.201765	.143248	1.013	.311
CONMEDIC	CONLABOR	.170292	.127514	.171967	.128212	.769	.442
CONTV	CONCLERG	.158771	.117002	.160126	.117540	.747	.455
CONBUS	CONFINAN	.330058	.301100	.342893	.310729	.560	.576
CONEDUC	CONBUS	.171421	.142934	.173130	.143919	.509	.611
CONTV	CONLABOR	.246138	.220652	.251298	.224341	.474	.636
CONLEGIS	CONBUS	.245319	.221418	.250426	.225147	.439	.661
CONPRESS	CONFED	.154895	.134508	.156152	.135328	.367	.713
CONARMY	CONJUDGE	.231178	.214361	.235434	.217738	.308	.758
CONTV	CONFED	.167410	.153126	.169001	.154340	.259	.796
CONPRESS	CONCLERG	.133739	.119319	.134545	.119890	.257	.797
CONJUDGE	CONFINAN	.244455	.233169	.249507	.237538	.208	.835
CONFED	CONFINAN	.291271	.280897	.299955	.288656	.198	.843
CONPRESS	CONBUS	.185163	.174658	.187324	.176467	.190	.850
CONJUDGE	CONTV	.198596	.189992	.201270	.192329	.156	.876
CONLABOR	CONBUS	.142764	.136557	.143746	.137415	.110	.912
CONCLERG	CONBUS	.177859	.172586	.179771	.174331	.094	.925
CONLABOR	CONEDUC	.176357	.173445	.178220	.175216	.053	.958
CONPRESS	CONEDUC	.183045	.182272	.185131	.184332	.014	.989
CONTV	CONPRESS	.371104	.371526	.389703	.390192	-.009	.993
CONJUDGE	CONEDUC	.230671	.231345	.234898	.235610	-.012	.990
CONARMY	CONLEGIS	.325108	.326420	.337348	.338816	-.026	.979
CONTV	CONMEDIC	.196553	.198428	.199144	.201096	-.035	.972
CONLABOR	CONCLERG	.088292	.091928	.088522	.092189	-.064	.949
CONEDUC	CONFINAN	.250040	.255306	.255455	.261081	-.099	.921
CONMEDIC	CONFED	.191538	.203586	.193933	.206471	-.221	.825
CONLEGIS	CONFINAN	.271135	.286101	.278088	.294314	-.284	.776
CONARMY	CONLABOR	.214939	.230493	.218344	.234710	-.286	.775
CONPRESS	CONFINAN	.166045	.182066	.167597	.184119	-.291	.771
CONLEGIS	CONEDUC	.269174	.288136	.275973	.296532	-.360	.719
CONSCI	CONEDUC	.126612	.147469	.127295	.148552	-.366	.714
CONMEDIC	CONPRESS	.204612	.224570	.207541	.228464	-.370	.711
CONARMY	CONEDUC	.270458	.290375	.277358	.298976	-.379	.705
CONLABOR	CONFINAN	.151427	.175064	.152601	.176886	-.425	.671
CONEDUC	CONCLERG	.203034	.226675	.205895	.230682	-.434	.664

CONTV	CONFINAN	.260491	.284116	.266635	.292154	-.449	.653
CONSCI	CONFED	.236317	.263065	.240870	.269398	-.491	.624
CONSCI	CONPRESS	.139811	.168744	.140733	.170374	-.512	.609
CONMEDIC	CONBUS	.237164	.264634	.241767	.271085	-.512	.609
CONPRESS	CONLABOR	.288322	.315040	.296735	.326131	-.517	.605
CONSCI	CONTV	.070723	.103732	.070842	.104106	-.573	.566
CONARMY	CONBUS	.211653	.251088	.214901	.256574	-.723	.470
CONJUDGE	CONLABOR	.176849	.218745	.178728	.222338	-.759	.448
CONARMY	CONPRESS	.103433	.152358	.103804	.153554	-.874	.382
CONMEDIC	CONCLERG	.145953	.196632	.147003	.199227	-.916	.360
CONLEGIS	CONFED	.420877	.466483	.448757	.505566	-.997	.319
CONMEDIC	CONFINAN	.247820	.301362	.253089	.311017	-1.019	.308
CONSCI	CONBUS	.274807	.329124	.282056	.341846	-1.025	.305
CONJUDGE	CONFED	.383172	.433388	.403772	.464061	-1.051	.293
CONLABOR	CONFED	.164795	.222718	.166312	.226514	-1.057	.291
CONARMY	CONFINAN	.322473	.378869	.334405	.398738	-1.127	.260
CONLEGIS	CONPRESS	.197183	.259356	.199800	.265418	-1.154	.249
CONSCI	CONLABOR	.064704	.136929	.064794	.137795	-1.256	.209
CONLEGIS	CONLABOR	.270865	.337239	.277797	.350974	-1.279	.201
CONLEGIS	CONTV	.175677	.247720	.177518	.252982	-1.326	.185
CONSCI	CONFINAN	.206631	.283629	.209650	.291624	-1.413	.158
CONLEGIS	CONJUDGE	.401929	.467838	.425947	.507299	-1.415	.157
CONARMY	CONTV	.205951	.282146	.208939	.290012	-1.425	.154
CONJUDGE	CONMEDIC	.274825	.348559	.282076	.363803	-1.427	.154
CONLEGIS	CONSCI	.274198	.350190	.281397	.365660	-1.448	.148
CONARMY	CONCLERG	.169765	.255253	.171425	.261024	-1.561	.119
CONMEDIC	CONEDUC	.203752	.286716	.206644	.294984	-1.561	.118
CONCLERG	CONFINAN	.186708	.279507	.188924	.287147	-1.714	.087
CONFED	CONEDUC	.236268	.327105	.240818	.339583	-1.739	.082
CONLEGIS	CONMEDIC	.193720	.296322	.196199	.305483	-1.919	.055
CONSCI	CONMEDIC	.243480	.353946	.248470	.369948	-2.093	.036
CONSCI	CONCLERG	.093784	.213023	.094061	.216336	-2.096	.036
CONARMY	CONSCI	.119105	.270347	.119673	.277238	-2.713	.007
CONARMY	CONMEDIC	.199176	.342641	.201874	.357082	-2.724	.006
CONSCI	CONJUDGE	.331005	.466286	.343956	.505314	-2.766	.006

Table 10

Differences Between Polychoric Correlations

VARIABLES		FORM XY	FORM Z	DIFFERENCE
CONFED	CONBUS	.452490	.246756	.205734
CONLEGIS	CONCLERG	.289638	.108205	.181433
CONTV	CONBUS	.299631	.148131	.151500
CONTV	CONEDUC	.291029	.145656	.145373
CONJUDGE	CONPRESS	.349477	.211869	.137608
CONJUDGE	CONBUS	.373508	.237181	.136327
CONARMY	CONFED	.446565	.318980	.127585
CONFED	CONCLERG	.270075	.145780	.124295
CONEDUC	CONBUS	.253334	.155915	.097419
CONJUDGE	CONCLERG	.253123	.158348	.094775
CONBUS	CONFINAN	.424603	.332425	.092178
CONLABOR	CONEDUC	.274001	.182953	.091048
CONMEDIC	CONLABOR	.229482	.140286	.089196
CONLEGIS	CONBUS	.323796	.240723	.083073
CONLEGIS	CONEDUC	.389986	.310858	.079128
CONTV	CONLABOR	.317163	.239227	.077936
CONTV	CONCLERG	.203733	.130800	.072933
CONTV	CONPRESS	.468172	.401503	.066669
CONEDUC	CONFINAN	.345284	.279337	.065947
CONARMY	CONLEGIS	.422345	.358331	.064014
CONARMY	CONEDUC	.372818	.313193	.059625
CONFED	CONFINAN	.370828	.311420	.059408
CONARMY	CONJUDGE	.293801	.239276	.054525
CONPRESS	CONEDUC	.250873	.196408	.054465
CONPRESS	CONBUS	.240993	.190610	.050383
CONPRESS	CONFED	.196364	.146959	.049405
CONJUDGE	CONEDUC	.301539	.252233	.049306
CONJUDGE	CONFINAN	.312733	.263473	.049260
CONJUDGE	CONTV	.254744	.207644	.047100
CONTV	CONFED	.212228	.168295	.043933
CONTV	CONMEDIC	.262384	.219294	.043090
CONCLERG	CONBUS	.231162	.189212	.041950
CONPRESS	CONCLERG	.170377	.129885	.040492
CONEDUC	CONCLERG	.290648	.250654	.039994
CONLEGIS	CONFINAN	.352824	.313237	.039587
CONLABOR	CONBUS	.188147	.150618	.037529
CONARMY	CONLABOR	.283811	.252644	.031167
CONTV	CONFINAN	.339421	.310090	.029331
CONPRESS	CONLABOR	.370196	.341705	.028491
CONMEDIC	CONPRESS	.272363	.244712	.027651
CONMEDIC	CONBUS	.319103	.292576	.026527
CONLEGIS	CONFED	.529101	.503081	.026020
CONMEDIC	CONFED	.251910	.226008	.025902

CONSCI	CONEDUC	.188117	.163392	.024725
CONSCI	CONFED	.310012	.287219	.022793
CONLEGIS	CONJUDGE	.517274	.500884	.016390
CONJUDGE	CONFED	.481010	.467178	.013832
CONPRESS	CONFINAN	.214132	.200738	.013394
CONLABOR	CONCLERG	.113585	.100670	.012915
CONSCI	CONBUS	.365260	.358750	.006510
CONLABOR	CONFINAN	.197038	.192352	.004686
CONSCI	CONPRESS	.186003	.187434	-.001431
CONARMY	CONBUS	.273830	.275281	-.001451
CONLEGIS	CONSCI	.368822	.372916	-.004094
CONARMY	CONFINAN	.408970	.414048	-.005078
CONMEDIC	CONFINAN	.328576	.334379	-.005803
CONJUDGE	CONLABOR	.232119	.239623	-.007504
CONLEGIS	CONLABOR	.355173	.363228	-.008055
CONSCI	CONTV	.093951	.114805	-.020854
CONJUDGE	CONMEDIC	.359634	.380810	-.021176
CONFED	CONEDUC	.328135	.354070	-.025935
CONLEGIS	CONPRESS	.255497	.281526	-.026029
CONLABOR	CONFED	.212502	.241007	-.028505
CONMEDIC	CONCLERG	.190852	.219855	-.029003
CONARMY	CONPRESS	.131580	.164982	-.033402
CONMEDIC	CONEDUC	.274011	.311771	-.037760
CONSCI	CONFINAN	.273007	.310934	-.037927
CONARMY	CONTV	.264437	.307848	-.043411
CONLEGIS	CONTV	.227887	.271325	-.043438
CONSCI	CONLABOR	.087241	.149181	-.061940
CONARMY	CONCLERG	.217074	.279825	-.062751
CONSCI	CONMEDIC	.327437	.391984	-.064547
CONLEGIS	CONMEDIC	.260068	.325538	-.065470
CONCLERG	CONFINAN	.239282	.309475	-.070193
CONSCI	CONJUDGE	.431873	.506937	-.075064
CONSCI	CONCLERG	.123940	.236648	-.112708
CONARMY	CONMEDIC	.259967	.376617	-.116650
CONARMY	CONSCI	.157169	.289954	-.132785

Source: 1984 General Social Survey

Table 11

Correlations based on Olsson's Table 7

	Correlation	Ratio $(r_c/r)^2$
True Value	.5000	-
27/46/27 Proportions	.4117	67.80%
Equal Proportions	.4085	66.75
Given Marginals	.3803	57.85
Observed Correlation	.3697	54.67
Polychoric Correlation	.4914	96.59

Note: r_c is the true, underlying correlation and r is the calculated value.

Table 12

Average Correlations[a,b]

	Form XY	Form Z	Mean Difference
Gamma	.354	.238	.117
Kendall Tau-b	.208	.198	.010
Spearman's Rho	.222	.243	-.022
Equal Interval Scoring	.223	.236	-.013
Normal Scoring	.221	.240	-.020
Polychoric	.290	.263	.027

[a] N=78

[b] Source: 1984 General Social Survey