QUANTITATIVE TECHNIQUES FOR STUDYING VOTING BEHAVIOR IN THE UN GENERAL ASSEMBLY[1]

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Much popular and scholarly writing abounds with references to blocs in the UN General Assembly, but there has been little systematic study of the actual patterns of group alignment in that body. This state of affairs may have resulted from the difficulties inherent in applying to international organization the methods used to analyze domestic legislative behavior. However, social scientists have recently developed some new techniques which may help to simplify this task and allow us to use quantitative procedures to study voting behavior in the General Assembly. This article will attempt to point out the difficulties encountered in analyzing bloc voting, and to indicate possible solutions, based on the use of quantitative techniques.

I. The Literature: Some Persistent Problems

An important question raised by the literature on voting patterns in the General Assembly is that of defining adequately a voting bloc.[2] One solution has been to call a bloc "any group which consistently votes as a unit on all or particular kinds of issues. . . ."[3] This definition, however, raises additional problems. How often must bloc members vote similarly—that is, what measure of cohesion must they demonstrate to qualify as "consistently" voting alike? How can we determine what questions are sufficiently related in the minds of the representatives to be classed as "particular kinds of issues"? How many nations comprise a "unit"? We must answer these questions if we are to make a complete and accurate study of voting blocs, and it is to these same problems that we shall attempt to apply quantitative methods in a later section of this article.

A second set of issues is suggested by the tendency in the literature to focus on predetermined groupings as the basis for analysis. The work done has relied, with the single exception of the British Commonwealth, on regional groups which meet in caucus prior to and during deliberation by the Assembly. These are usually the same as natural regional groupings. Thus such blocs as the Arab League, Eastern Europe, Western Europe (sometimes subdivided into Benelux, Scandinavia, and other), Afro-Asian, and the Organization of American States have been singled out for study.

This reliance on regional and caucusing groups raises one of the major difficulties in a study of the voting patterns in any legislative body: how to determine the existence of a bloc. Using pre-established groupings may obscure, or even obliterate, similarities in cross-regional voting. An adequate system of analysis should provide means for comparing the ways in which blocs behave, but it must not preclude our finding likeness and cohesion of a non-regional character.

Related to this tendency to limit the focus of study to predetermined groupings

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[2] See M. Margaret Ball, "Bloc Voting in the General Assembly," *International Organization,* February 1951 (Vol. 5, No. 1), p. 3–31; Robert E. Riggs, *Politics in the United Nations: A Study of United States Influence in the General Assembly,* Champaign, Illinois Studies in the Social Sciences (Vol. 41), University of Illinois Press, 1958; and Thomas Hovet, Jr., *Bloc Politics in the United Nations,* Cambridge, Massachusetts Institute of Technology, Center for International Studies, 1958.

[3] Ball, *op. cit.,* p. 3.

is the problem of the unanimity of the blocs. If, as the literature suggests, geographical and caucusing groups are often far from unanimous, are we forced to conclude that there are no voting blocs in the General Assembly? If not, then we must face other questions. Where there is less than unanimity, how many occasions of deviation from the group majority by how many nations are required before the bloc ceases to exist? Can a bloc exist on one and not on another set of votes? And in the case of the deviant nations themselves, how many times must a nation be in the minority to lose its standing as a bloc member? The answers to these questions require some summary measure to evaluate both the cohesion of the group as a whole and the performance of each individual nation in relation to the other members of the group on all or specific types of issues.

In what follows we shall suggest that some quantitative techniques may help provide answers to the questions raised in the preceding paragraphs. In addition, these solutions can be presented in a way that will provide the reader with the maximum amount of "raw" data, so that he has before him information about the performance of individual countries on all and specific issue votes. If then the reader rejects the definitions on which the work rests, he can re-do the analysis using standards of his own choosing.

II. Quantitative Techniques: Some Proposed Solutions

Before proceeding to demonstrate these methods it may be wise to interject a word of caution. The techniques we shall attempt to apply here are not the final answers to the problems raised in analyzing voting behavior in any legislative body. They should in any case not be used alone, but rather in conjunction with other approaches such as direct observation of General Assembly activity and interviews with participants in this activity. Nor will these quantitative methods alone provide answers to questions about the intensity of opinion of any single country. For example, these procedures may indicate the existence of a highly cohesive bloc when, in reality, some of the countries are disinterested and are seeking to "log roll" for future support on other, more important, measures. Likewise, these methods give equal weight to all votes, when the fact of the matter may be that the vote of an influential power determines the votes of a number of "satellite" nations.

In addition, the findings we shall present are of limited substantive validity, as they are based on 27 roll-call votes from a single session, the eleventh, of the General Assembly. In many ways this was an atypical session, for the votes on the Suez and Hungarian situations produced unusual voting alignments. One of the criteria for the use of scalogram analysis, which will be discussed later in this article, served as the basis for selection of the roll calls: this criterion calls only for votes on which at least 20 percent of those participating did not cast their ballots for the majority position—that is, the maximum acceptable percentage distribution of the vote is an 80–20 split. The reasons behind this will become apparent in the course of the discussion. The tabulation includes the voting records of 79 countries on these issues, the admission of Japan and Ghana coming too late in the session to make their inclusion practical.

Bloc Analysis. We shall define a voting bloc, for illustrative purposes, as a *given* number of nations voting as a unit a *given* percentage of the time on all or on a *given* set of issues. In the remainder of this section, a bloc will be considered, somewhat arbitrarily, as five or more nations voting as a unit at least 80 percent of the time on all the issues selected. Groupings of a regional or caucusing nature will be termed "groups."

Bloc analysis is presented in a matrix, each cell of which contains the percentage

of voting agreement between a pair of countries in the General Assembly. In this case, the size of the matrix (79 x 79) makes its reproduction here impracticable, but the reader can readily see that by comparing the performance of each nation with every other nation no possible combinations should escape detection. In this way we may find blocs which would remain unnoticed if only regional caucusing groups were examined. Thus, in addition to blocs within regional and caucusing groups, certain interesting and unexpected combinations appear. Some of these are presented in Table 1. There, among others, we find blocs of four Latin American nations, plus

TABLE 1

Bloc Analysis of Selected Non-Regional Blocs

	Spain	Ireland	Austria	Brazil	Colombia	Honduras	Peru	China
Spain	—	81	81	81	85	78	78	78
Ireland	81	—	81	81	81	85	81	78
Austria	81	81	—	85	85	89	89	81
Brazil	81	81	85	—	81	85	93	85
Colombia	85	81	85	81	—	93	89	81
Honduras	78	85	89	85	93	—	93	85
Peru	78	81	89	93	89	93	—	93
China	78	78	81	85	81	85	93	—

	Iraq	Liberia	Ethiopia	El Salvador	Bolivia	Greece	Guatemala	Iran	Uruguay	Thailand
Iraq	—	85	85	89	89	93	85	96	85	78
Liberia	85	—	85	85	85	93	93	89	78	81
Ethiopia	85	85	—	81	89	93	81	89	70	78
El Salvador	89	85	81	—	85	89	93	85	81	78
Bolivia	89	85	89	85	—	93	96	93	85	85
Greece	93	93	93	89	93	—	93	96	85	85
Guatemala	85	93	81	93	96	93	—	89	81	85
Iran	96	89	89	85	93	96	89	—	81	81
Uruguay	85	78	70	81	85	85	81	81	—	81
Thailand	78	81	78	78	85	85	85	81	81	—

Note: The cell entry is the percent of voting agreement between the relevant pair of countries.

Austria and China; three other South American states, plus Greece, Iran, and Thailand; and three European nations (Spain, Ireland, and Austria) and two Latin American republics. Bloc analysis permits us, therefore, to identify blocs within our definition, entirely unrelated to any scheme of classification ordinarily used, and which the standard procedures outlined above would not detect. Whether the blocs discovered in this way are meaningful in some broader sense or are merely "chance" alignments can be checked by using observational and interview techniques to determine the basis of voting agreement.

Bloc analysis will also provide a means of testing the cohesion of the various regional and caucusing groups suggested by the literature on bloc voting. By setting up a bloc matrix, it is possible to compare each pair of countries in the group of nations under study, and to determine whether or not the group meets the criteria of a bloc. To demonstrate this process, we have subjected to bloc analysis a breakdown of the Members of the General Assembly into four "blocs"—Communist, Western, Afro-Asian, and Latin American—identified in *The New York Times* of September 29, 1958.[4] A sample of the results appears in Table 2. We find that among the twenty-nation Latin American group there exists only a single bloc of five nations—Costa Rica, Haiti, Mexico, Guatemala, and El Salvador—which satisfies the definition set out above. Examination of the other groupings has led to the same conclusion: these broad groups, as we might have predicted, are not very meaningful as voting blocs and cannot serve as a basis for analyzing the voting patterns in the General Assembly. The importance of these broad regional groups in other areas of UN activity, such as the distribution of committee seats, must be investigated by additional research methods.

In addition to enabling us to identify blocs both within and cutting across regional and caucusing groups, bloc analysis presents comparable information on each country in such a way that any reader who rejects the given definition of a bloc will be able to find, from the matrix, blocs which do measure up to his criteria; for example, if one should demand 85 percent agreement as a criterion for bloc membership, but be willing to accept as a bloc a minimum of three nations, the pattern of blocs would change (some of these new blocs are marked by dotted lines in Table 2). What is important here is not the particular definition of bloc selected, but that there are some *specific* standards established.

Summary Measures: Indices of Cohesion and Likeness. Having determined the existence of blocs, we may want to compare them in terms of internal cohesion and similarity of response to all or to particular sets of issues. In this section we shall discuss two possible measures of cohesion and one index of likeness.

The first of these, the Index of Interagreement,[5] stems directly from the bloc analysis. It is simply the arithmetic mean of the percentages of voting agreement of all relevant pairs of nations. Applying this index to the four broad groups mentioned earlier, we find, as expected, that the Communist group has the highest Index of Interagreement, the coefficient being .848. The Afro-Asian is the least cohesive group, showing an index score of .562. And with index coefficients of .745 and .737, respectively, the Latin American and Western groups fall between the extremes. The

[4] *The New York Times,* Section IV, p. 5, September 29, 1958. The Communist bloc includes the Soviet Union, the satellites, and Yugoslavia. The Western group totals 25, including the NATO and Commonwealth countries, the non-Soviet European states, and Israel. The Afro-Asian group has 26 members including Nationalist China. The Latin American bloc consists of the 20 South and Central American states.

[5] For the application of this index, as well as bloc analysis in general, to judicial behavior, see Glendon A. Schubert, "The Study of Judicial Decision-Making as an Aspect of Political Behavior," *American Political Science Review,* 1958 (Vol. 52), p. 1007–1025.

TABLE 2

Latin American Group

	Argentina	Venezuela	Uruguay	Panama	Costa Rica	Haiti	Mexico	Guatemala	El Salvador	Bolivia	Ecuador	Paraguay	Colombia	Brazil	Honduras	Peru	Chile	Dominican Rep.	Cuba	Nicaragua
Argentina	—	89	93	74	74	78	74	70	74	78	81	78	74	74	74	78	74	59	74	63
Venezuela	89	—	89	81	78	78	81	78	74	74	78	81	78	78	78	78	78	63	67	74
Uruguay	93	89	—	81	85	85	89	81	78	85	85	85	81	78	81	81	81	63	70	70
Panama	74	81	81	—	70	81	78	81	70	67	74	78	70	70	70	67	74	63	63	63
Costa Rica	74	78	85	70	—	81	81	81	89	67	81	85	70	70	85	85	74	59	67	78
Haiti	78	78	85	81	81	—	85	85	85	81	78	67	70	74	74	70	70	56	59	63
Mexico	74	81	89	78	81	85	—	85	85	74	81	78	67	70	74	67	70	52	70	67
Guatemala	70	78	81	81	81	85	85	—	93	89	78	67	63	70	67	67	70	59	59	70
El Salvador	74	74	78	70	89	85	85	93	—	85	74	78	70	70	74	74	70	59	70	74
Bolivia	78	74	85	67	67	81	74	89	85	—	78	70	67	59	74	78	74	67	70	70
Ecuador	81	78	85	74	81	78	81	78	74	78	—	81	74	78	74	74	67	67	70	74
Paraguay	78	81	85	78	85	67	78	67	78	70	81	—	81	74	81	81	85	70	78	74
Colombia	74	78	81	70	70	70	67	63	70	67	74	81	—	81	93	89	78	70	74	81
Brazil	74	78	78	70	70	74	70	70	70	59	78	74	81	—	85	93	74	78	78	74
Honduras	74	78	81	70	85	74	74	67	74	74	74	81	93	85	—	93	78	74	74	89
Peru	78	78	81	67	85	70	67	67	74	78	74	81	89	93	93	—	81	81	81	81
Chile	74	78	81	74	74	70	70	70	70	74	67	85	78	74	78	81	—	81	70	67
Dominican Republic	59	63	63	63	59	56	52	59	59	67	67	70	70	78	74	81	81	—	74	67
Cuba	74	67	70	63	67	59	70	59	70	70	70	78	74	78	74	81	70	74	—	74
Nicaragua	63	74	70	63	78	63	67	70	74	70	74	74	81	74	89	81	67	67	74	—

Index of Interagreement could also serve as a definition of bloc, *i.e.*, any group of nations with an Index of Interagreement above a certain specified level could be considered a bloc. Here again, the possibility that any bloc so identified is only a "chance" grouping, without diplomatic communication among the members, must be investigated.

A second measure of group or bloc cohesion derives from the work of Stuart A. Rice, done over thirty years ago. Rice based his index on the theory of probability:

> If roll-call votes were cast according to pure chance, the most probable result in the case of any roll call would be a division in which fifty percent of the members voted affirmatively and fifty percent voted negatively. It is evident that the cohesion within the entire body in such a case would be *nil*. Hence a measure of cohesion will be obtained if we determine the degree of departure from the

uniformity of action, i.e., a roll call in which all members vote alike. Referring only to the percentage of affirmative votes for the sake of convenience, it is apparent that zero cohesion (0.0) will be indicated by a roll call in which fifty percent of the members vote affirmatively. Maximum cohesion (100.0) will be indicated whenever the group is unanimously either for or against a measure; i.e., when it votes either 100 percent or 0 percent in the affirmative. Further, an index of cohesion intermediate between 0.0 and 100.0 will be determined by the degree to which the percentage of affirmative votes departs from 50.0 in either direction toward 0.0 or 100.0. For example, when the votes of the group on a given measure are thirty percent in the affirmative or seventy percent in the affirmative, the index of cohesion will in both cases be 40.0, for in both there is a 20/50 or forty percent departure from 0.0 cohesion toward 100.0 cohesion. When the index of cohesion upon a series of roll calls is to be found, the writer has employed the arithmetical mean of the indexes derived for the various individual roll calls in the series.[6]

Using this technique on the four "blocs" we have been examining, we find the following coefficients of cohesion: Soviet group, .859; Latin American group, .670; Western group, .636; and Afro-Asian group, .420. Much of the variation between Rice's index and the Index of Interagreement derived from bloc analysis results from different ways of treating abstentions. Rice's method forces the data into a dichotomy, for the calculations rest on the percent of affirmative votes, abstentions being lumped with negative votes. By thus artificially inflating the negative votes this procedure tends to underestimate the amount of agreement present, thereby leading to a lower index ratio. On the other hand, the Index of Interagreement, in pairing every nation with every other on every vote, finds agreement when two countries abstain, thus raising the percent of voting agreement over what it would have been had only like favorable or opposed values been tabulated.

It seems that the Index of Interagreement treats the problem of abstentions better, but Rice's Index of Cohesion, based on the individual votes, points out which issues tend to divide a group and what percentage of the members deviates from the majority position. Thus each index is useful and the choice between them will rest on the utility of each in specific research situations.

In addition to intra-group cohesion, we may want to know something about the degree of similarity between different groups. It may be valuable to determine whether the Afro-Asian group, for example, is closer to the Communist or Western groups on some particular type of question. To measure relationships of this sort, Rice developed an Index of Likeness Between Groups:

> The possible range of this index is likewise from 0.0 to 100.0. If, for example, all Republicans in a legislative session vote affirmatively on a given roll call while all Democrats vote negatively, it is obvious that the behavior of the two groups, so far as it can be expressed by votes, is absolutely dissimilar. One is 100 percent affirmative, the other 0 percent affirmative. The arithmetic difference between the percentages of affirmative votes in the two cases is 100.0. This figure thus gives an index of absolute *difference* in voting behavior between the two groups. If, on the other hand, Republicans and Democrats *both* divide at the same time 50–50, or 70–30, or 85–15, the responses of the two groups, as groups, will in each case be the same. It is to be inferred in such cases that the distribution of votes is determined by factors unassociated with party divisions, and Republicans and Democrats may be said to vote *alike* on the issue at hand. The arithmetical difference between the respective complement of this figure, 100.0 will be the *index of likeness.* Thus the complement of the arithmetical difference between the percentages voting in the affirmative in each of the two groups gives an index of likeness between them,

[6] Stuart A. Rice, *Quantitative Methods in Politics,* New York, Alfred A. Knopf, 1928, p. 208–209.

so far as their voting behavior is concerned. The index of likeness upon a series of roll calls may again be regarded as the arithmetic mean of the indexes derived for the separate roll calls in the series.[7]

Applying this measure to our four groups on all issues, we find that the Afro-Asian group falls almost exactly between the Communist and Western "blocs," the Indices of Likeness being .541 and .558 respectively (see the Appendix for a sample of the data for the calculations for both of Rice's indices). The Index of Likeness for the other combinations of groups is as follows:

Latin American and Western groups, .802
Latin American and Afro-Asian groups, .613
Latin American and Communist groups, .222
Western and Communist groups, .154

These summary measures, then, while they do not present information about individual states, do allow us to compare blocs or regional or other types of groups both for the amount of internal cohesion and the degree of likeness to other groups on all or particular issues before the General Assembly.

Guttman Scale Analysis. In dealing with special classes of votes we can apply these same techniques, but they do not provide data on how the votes divide on single resolutions, nor do they furnish information about the behavior of single nations on these same votes. The Guttman scale, derived by Louis Guttman and first used extensively by social psychologists, can supply many of these facts.

The distinguishing characteristic of the Guttman scale is its cumulative property.[8] A set of responses to a series of related questions designed to measure a single attitude (or variable) is a scale if one can tell from a given response that a respondent will maintain every response which is more extreme or less extreme than the given one. What this means is that a respondent who has given a positive response to the third item on a scale is likely to have given positive responses to the first two scale items. Thus, in the sample scalogram (Figure 1), the positive response of respondent I to question 3 precludes negative responses to questions 1 and 2. Likewise, knowledge of respondent IV's negative response to the first question would tell immediately the response given the items 2 and 3.

FIGURE 1

Sample Scalogram

	Items	*1*	*2*	*3*
	I.	+	+	+
Respondents	II.	+	+	—
(scale types)	III.	+	—	—
	IV.	—	—	—

+ indicates a positive response.
— indicates a negative response.

The items might be questions on height, *e.g.:*

Question 1. "Are you taller than 5′0″?"
Question 2. "Are you taller than 5′3″?"
Question 3. "Are you taller than 5′6″?"

The basic idea of scale analysis is that "the items can be arranged in an order so that an individual who agrees with, or responds positively to, any particular item also responds positively to all items of lower rank order. The rank order of items is the scale of items; the scale of persons is very similar, people being arranged in order according to the highest rank order of items checked, which is equivalent to the number of positive responses in a perfect scale."[9]

[7] *Ibid.*, p. 210–211.

[8] The definitive work on scale analysis is Samuel Stouffer *et al., Measurement and Prediction,* Vol. 4 of *Studies in Social Psychology in World War II,* Princeton, Princeton University Press, 1950. See especially p. 60–90. For a more concise explanation, see Bert F. Green, "Attitude Measurement," in Gardner Lindzey (ed.), *Handbook of Social Psychology,* Reading, Mass., Addison-Wesley, 1954, p. 335–369. The discussion of scale analysis which follows draws heavily from these two sources.

[9] Green, *op. cit.*, p. 353.

The scale in Figure 1 is a "perfect" scale, that is, there can be no errors. Each set of responses will match one of the four scale types. In practice, in actual attitude studies, perfect scales do not occur, and there are often some "non-scale" responses which do not "fit" the scale pattern. For instance, a commonly used measure is the "social distance" scale. This scale is composed of a series of questions asking the respondent, for example, whether or not he would accept a member of some minority group as (1) a business associate, (2) a close personal friend, and (3) his son-in-law. The assumption is that, if the questions have been properly phrased, a respondent who would not have a minority group member as a business associate would not accept him in the other statuses suggested. However, on occasion, a respondent might accept the member of the group as his son-in-law, perhaps on the ground that the decision in such a matter was his daughter's and not his. In any case, a positive response to the question (item 3) would be a non-scale response, or error, if coupled with negative responses to the other scale items. This pattern of response (— — +) would be ranked with scale type IV in Figure 1 (— — —), with an error on item 3. Minimization of errors is the criterion used to obtain the rank orders of both items and respondents in a scalogram.

If a group of responses forms a scale, there can be only a maximum number of errors tolerated. Thus, the first criterion for creating a scale is *unidimensionality*. This criterion indicates that the items in the scale relate to one another or measure related attitudes on a particular topic. Unidimensionality is measured by a Coefficient of Reproduceability, which is calculated by the formula: $\frac{1 - \text{Number of errors}}{\text{Number of item responses}}$. A coefficient of .90 or above indicates an acceptable scale, *i.e.*, there must not be more than one response in ten that does not fit the scale pattern.

There are other criteria that an acceptable scale must meet. The distribution of responses must not be too one-sided, for, if there is a small number of one kind of response, the Coefficient of Reproduceability will be artificially increased. If there are less than 10 percent negative responses, for example, to a given question, there will be less than 10 percent error, although the question may be measuring different attitudes in the positive and negative respondents. For this reason, the distribution of responses on any item must not be greater than an 80–20 split and should include some items which approach a 50–50 division of response. A random pattern of errors is a second requirement for an acceptable scale, for, if a large number of errors occurs on a particular item, it may be that this item is tapping an attitude other than the one under study. Finally, a useful scale will include as many items as possible, usually ten or more. This requirement seems to be the least important, and many users of scale analysis often ignore it, but the greater the number of items, the greater the assurance that the scale actually does measure the attitude (variable) that it in fact seeks to measure.

In summary, then, a set of responses to a series of related questions forms a scale if one respondent higher in the rank order than another responds favorably on at least one more item than that other. And knowledge of a respondent's scale type will permit us to predict his responses to the individual items with a minimum accuracy of 90 percent. The Guttman scale also ranks both the individuals and the items with respect to positive responses; thus in Figure 1, respondent (scale type) I and item 1 received the most positive responses. Finally, the selection of the items from a single content area and attention to the criterion of unidimensionality indicate that the scale is measuring a single variable.

Scale analysis has advantages for problems of description, interpretation, and prediction. It is an aid in describing behavior,

because it lists the responses to all the questions. By assigning to each scale pattern (+ + +; + + —; + — —; — — —) a score (4; 3; 2; 1), other aids in description are made available. For instance, the respondents with the same score can be said to have the same or similar characteristics. A person with a higher score is "favorable" on all questions that a person with a lower score answers favorably and at least one more. In addition, the whole concept of a single continuum, each item of which is a simple function of the scale scores, permits a clear statement of the meaning of a rank order based on a single variable.

Scale analysis is a help in the interpretation of data. Often it is difficult to determine whether or not two variables are related, especially as cross-tabulations may obscure the relationship between them. Using scales allows us to discover the independence or association of variables. If two variables are not associated, the responses to the questions concerning them will not scale; if, on the other hand, they are related, the responses will scale, and the researcher will avoid the error of finding more variables than actually exist. Prediction is simplified by using scale methods: less tabulation is necessary, for the scale scores will have the same relationship as the responses to the individual items that comprise the scale. Statistical correlation procedures are thus greatly simplified as well. However, this topic lies outside the scope of the present paper.

Lately, social scientists have used these procedures to analyze legislative behavior.[10] The justification for this use of scale analysis is that a legislative body is a social system involving structural uniformities of behavior similar to those of a larger system. These patterns of action are traceable and the attitudes of the legislators on particular issues (labor, civil rights, etc.) can be measured much as the scales previously discussed measure attitudes and variables in other areas. Thus, roll calls on a particular issue form a scale if a representative, whose attitude toward the issue is more "favorable" than that of a second legislator, is as favorable as or more favorable than the second representative on each individual roll-call vote. The same criteria of acceptability discussed above, of course, apply to this use of scale analysis.

Scale analysis can serve both to determine the existence of blocs and to test the cohesion of preconceived regional or caucusing groups. We have applied these methods of scale analysis to "colonial" questions in the eleventh session of the General Assembly. The results appear in Table 3. The responses to eight roll-call votes on colonial issues meet all the criteria for an acceptable scale except that pertaining to the number of items. There were, however, only eight votes concerned with colonial and dependent peoples during the eleventh session, so these, taken together, constitute the items for our "colonial" scale.

Before turning to the actual data, it would be well to point out some of the limitations inherent in using scale analysis. In the first place, scales are relative to time and population. A population may be scalable at one point in time, but not at another. Changes in attitude on the part of Member States may make a scale on colonial issues impossible at some future time; in addition, the rank order established by the scale may alter over time. Secondly, a universe of attributes may be scalable for one population and not for another, or for a total population but not for some particular sub-group.

In this case, however, the votes on the colonial issues do scale for the entire UN and for the four regional groups with which we have been concerned. Table 3 presents the scalogram for all 79 nations. Considering all eight items, four large groups ap-

[10] See George M. Belknap, "A Method for Analyzing Legislative Behavior," *Midwest Journal of Politics,* 1958 (Vol. 2), p. 377–402, and Charles D. Farris, "A Method of Determining Ideological Groupings in the Congress," *Journal of Politics,* 1958 (Vol. 20), p. 308–338. The following applications of scale analysis to legislative behavior rely, for the most part, on these two articles.

TABLE 3

Scalogram of "Colonial" Questions, Eleventh Session, 1956–57

	Issues							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Italy	+	+	+	+	A	+	+	+
Union of South Africa				+		+	+	+
Belgium	+	+	+	+	+	+	+	A
Australia	+	+	+	+	+	+	+	A
France	+	+	+	+	+	+	+	A
Luxembourg	+	+	+	+	+	+	+	A
Portugal	+	+	+	+	+	+	+	A
United Kingdom	+	+	+	+	+	+	+	A
Netherlands	+	+	+	+		+	A	A
New Zealand	+	+	+	+		+	A	A
Dominican Republic	+	+	+	+	A	+	A	A
Finland	+	+	+	A	A	+	A	A
Turkey	+	+	+	A	A	A	A	A
Norway	+	+	+	+	+	+	—	—
Sweden	+	+	+	+	+	+	—	—
Denmark	+	+	+	+	+	+	—	—
Israel	+	+	+	+	A	+	—	—
China	+	+	+	+	A	+	—	—
Iceland	+	+		+		+	—	—
Chile[11]	+	+	(—)	A	A	+	—	—
Canada	+	+	+	+	+	A	—	—
United States	+	+	+	A	+	A	—	—
Honduras	+	A	+	+	A	A	—	—
Peru	+	+	+	+	A	A	—	—
Austria	+	+	+	+	A	A	—	—
Nicaragua	+	A	+	+	A	A	—	—
Ireland	+	+	+	+	+	—	—	—
Cuba	+	+	+	+	A		—	—
Brazil	+	+	+	+	A	A	—	—
Colombia	+	+	+	A		A	A	—
Spain	+	+	+	A	A	—	A	A
Paraguay	+	+	+	A	—	A	—	—
Argentina	+	+	A	A	—	—	—	—
Venezuela	+	+	A	A	—	—	—	—
Ecuador		+	+	—	—	—	—	—
Pakistan	+	+	+	—		—	—	—
Philippines	+	+	+	—	—	—	—	—

[11] In the case of Chile, the error could be on item 6 rather than on item 3. Where a non-scale response pattern can be assigned to more than one scale type, it is assigned to that type which has the greatest frequency of occurrence. See Andrew F. Henry, "A Method of Classifying Non-Scale Response Patterns in a Guttman Scale," *Public Opinion Quarterly*, 1952 (Vol. 16), p. 94–106.

	Issues							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Ceylon	+	(—)	+	—	—	—	—	—
Thailand	+	+	A	—	—	—	—	—
Cambodia	+	A	A	A	—	—	—	—
Panama	+			A	—	—		—
Uruguay	+	A	—	—	—	—	—	—
Costa Rica	+	A	—	—	—	A	—	—
Bolivia	+	A	—	—	—	—	—	—
Ethiopia	+	—	—	—	—	—	—	—
Liberia	+	—	—	—	—	A	—	—
Tunisia	+	—	—	—	—	—	—	—
Laos	+	—		—	—	—		
Mexico	+	—	—	A	—	—	—	—
El Salvador	+	—	—	—	—	—	—	—
Guatemala	+	—	—	—	—	—	—	—
Haiti	+	—	—	—	—	—	—	—
Greece	+	—	—	—	—	—	—	—
Lebanon	A	A	A	A	A	—	—	—
Burma	A	—	—	—	—	—	—	—
Afghanistan	A	—	—	—	—	—		—
India	A	—	—	—	—	—	—	—
Indonesia	A	—	—	—	—	—	—	—
Morocco	A	—	—	—		—	—	—
Nepal	A	—	—	—	—	—	—	—
Hungary						—	—	—
Jordan		—		—	—	—	—	—
Egypt	—	—	—	—	—	—	—	—
Iran	—	—	—	—	—	—	—	—
Iraq	—	—	—	—	—	—	—	—
Libya	—	—	—	—	—	—	—	—
Saudi Arabia	—	—	—	—	—	—	—	—
Sudan	—	—	—	—	—	—	—	—
Syria	—	—	—	—	—	—	—	—
Yemen	—	—	—	—	—	—	—	—
Albania	—	—	—	—	—	—	—	—
Bulgaria	—	—	—	—	—	—	—	—
Byelorussia	—	—	—	—	—	—	—	—
Czechoslovakia	—	—	—	—	—	—	—	—
Poland	—	—	—	—	—	—	—	—
Rumania	—	—	—	—	—	—	—	—
Ukraine	—	—	—	—	—	—	—	—
USSR	—	—	—	—	—	—	—	—
Yugoslavia	—	—	—	—	—	—	—	—

Coefficient of Reproduceability with maximum possible errors, .95.

Key to Scalogram:

+ equals "pro-colonial" vote
— equals "anti-colonial" vote
() indicates errors
A equals Abstention
Empty cell equals no position recorded

Issues on Scalogram:

1. + equals vote for a resolution approving "with satisfaction" French accomplishments in Togoland (A/3449/Add.1).
2. + equals vote requiring that a resolution on transmission of information on non-self-governing territories under Article 73 (e) be an important question requiring a 2/3 vote for adoption (A/3531 and Add.1, par. 63).
3. + equals vote against the establishment of an *ad hoc* committee to check on the transmission of information under Article 73 (e) (A/3531).
4. + equals vote against a resolution for maintenance of the *status quo* in West Irian while the Netherlands and Indonesia negotiate a settlement (A/3565, par. 7).
5. + equals vote against a resolution calling for the administering powers to estimate the time required for their trust territories to attain self-government (A/3554 and Add.1).
6. + equals vote against the inclusion of the question of West Irian on the agenda (A/3550, item 64).
7. + equals vote against the inclusion of the question of race conflict in the Union of South Africa on the agenda (A/3550, item 61).
8. + equals vote against the inclusion of the question of the treatment of people of Indian origin in the Union of South Africa on the agenda (A/3550, item 24).

pear. The first of these—from Italy through Turkey—has the most pro-colonial (*i.e.*, most favorable to the colonizing and administering powers) voting record. These are the only states which did not cast a single anti-colonial vote, and thus form the voting bloc most favorably disposed toward colonialism. It is also evident that Turkey is a marginal case. Its abstentions on items 4–8 leave it unclear as to what position to assign it on the scale, but on the basis of the bloc analysis we have placed it near those countries with which it has the highest percentage of voting agreement. We have used the same method to resolve other ambiguous cases.

The second major grouping—from Norway through Ireland—is generally, though somewhat less so than the first group, sympathetic to the colonizing nations, being, however, unwilling to vote against including race questions in the Union of South Africa (items 7 and 8) on the Assembly agenda. The position of Cuba, Brazil, Colombia, and Spain is ambiguous; it is difficult to decide whether they belong in the second or in the third large divisions. This third group starts with Paraguay and continues through at least Thailand, though it might also include Cambodia and Panama. It is the least cohesive of all, being, in rough terms, divided on colonial problems. The last group—Uruguay through Yugoslavia—is almost solidly anti-colonial. It is divided on item 1 (a resolution noting "with approval" French accomplishments as the administering power in Togoland), but it is solidly anti-colonial on the remaining seven votes. In this manner, we can, with some rough edges, find groupings in the Assembly on specific related issues. This same process can identify divisions on any single vote as well. There are, for example, three obvious divisions on item 1.

A second advantage of the use of scale analysis is the singling out of deviant cases for special study. Thus, we may want to examine the circumstances surrounding the negative (anti-colonial) votes of Ceylon on item 2 and Chile on item 3.

Scale techniques also permit us to speculate about the behavior of absent or abstaining members. If an absence or an abstention occurs to the left of the breaking-point of the scale, the assumption is that if these votes had been cast they would have been pro-colonial. Thus we may predict that the absences of the Union of South Africa, the Netherlands, and New Zealand, for instance, and the abstentions of the United States and the Dominican Republic would have been positive votes had they been cast. Conversely, we would predict negative responses for the non-voting of Panama and Laos and the abstentions of Costa Rica and Liberia. Of course, we can make no guesses about abstentions and absences which obscure the breaking-point in the scale and fall between the positive and negative responses (that is, between the broken lines in Table 3).

An additional benefit from employing

TABLE 4

Latin American Group

	Issues							
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Dominican Republic	+	+	+	+	A	+	A	A
Chile	+	+	(—)	A	A	+	—	—
Honduras	+	A	+	+	A	A	—	—
Peru	+	+	+	+	A	A	—	—
Brazil	+	+	+	+	A		—	—
Nicaragua	+	A	+	+	A	A	—	—
Cuba	+	+	+	+	A	—	—	—
Colombia	+	+	+	A		A	A	—
Paraguay	+	+	+	A	—	A	—	—
Argentina	+	+	A	A	—	—	—	—
Venezuela	+	+	A	A	—	—	—	—
Ecuador		+	+	—	—	—	—	—
Uruguay	+	A	—	—	—	—	—	—
Panama	+			A	—	—		—
Costa Rica	+	A	—	—	—	A	—	—
Bolivia	+	A	—	—	—	—	—	—
Mexico	+	—	—	A	—	—	—	—
El Salvador	+	—	—	—	—	—	—	—
Guatemala	+	—	—	—	—	—	—	—
Haiti	+	—	—	—	—	—	—	—

Coefficient of Reproduceability with maximum possible errors, .90.

the Guttman scale is that it provides a single continuum for rating the performance of individual countries. Were we to assign scale scores to the different patterns, we could rank the 79 nations—from Italy to Yugoslavia—on a pro- to anti-colonial spectrum. Table 3 gives a crude approximation of this rank order. Assigning scale scores would also transform the variable of attitudes on colonial matters from a qualitative to a quantitative one, thus allowing us to apply more elaborate statistical procedures.

We may also rank the votes themselves on a similar continuum. Item 1 has the most appealing pro-colonial position and item 8 the least, in terms of amount of support drawn. The rank order is reversed from the point of view of anti-colonialism.

Finally, the concept of unidimensionality ensures that we are dealing with a single or related group of attitudes. Thus, although we can never be certain what basic feelings are responsible for the votes cast by the different nations on colonial questions, we can be reasonably sure that all these votes were regarded as colonial issues by the Members of the Assembly. In this way, we are able to clarify the use of variables under accurate terminology.

We have also used these methods to test the accuracy of breaking the Assembly down into four broad groups. An example is given in Table 4. The Latin American nations are badly split on colonial questions, being solidly pro-colonial on item 1 and, with the exception of a single abstention,

entirely anti-colonial on item 8. With respect to individual nations, this group ranges from the strongly pro-colonial Dominican Republic to the equally strongly anti-colonially oriented Mexico, El Salvador, Guatemala, and Haiti. In addition, at least one nation falls in almost every one of the intermediate positions.

We may note here that procedural questions (items 6–8) tend to arouse the least pro-colonial sentiment, indicating that even those inclined toward a pro-colonial position are not averse to allowing the General Assembly to discuss these questions, where the discussion does not commit them to any positive action. But note also that, where a procedural matter closely relates to the substance of a problem (item 3, a resolution calling for the establishment of an *ad hoc* committee to check on the transmission of information on non-self-governing territories under Article 73 (e) of the Charter), there is much less willingness on the part of those states pro-colonially disposed to go along with the anti-colonial majority in the Assembly.

In addition, Table 3 allows us to see with what other nations the deviant group members are associated. Thus, Greece, for instance, is much more closely allied with the Arab states and the Communist group on colonial questions than with its fellow members of the Western group.

III. Conclusion

This essay has tried, by applying some quantitative techniques, to suggest some possible means of solving the questions about bloc voting patterns in the General Assembly left unanswered by the literature on the subject. We have not insisted that the term "bloc" have any particular content—only that it have *some* specific definition. By using bloc analysis, we have demonstrated how blocs can be determined and how we need not rely upon preconceived regional and caucusing groupings. The Index of Interagreement and Rice's indices of Cohesion and Likeness have supplied summary measures which provide means of comparing both blocs and groups in terms of their degree of internal cohesion and their degree of similarity to one another. Finally, Guttman scale analysis has furnished a method of comparing the behavior of individual states on single votes or specific classes of votes, as well as one of identifying blocs and testing the solidarity of pre-established groupings. By the use of scales we may single out deviant behavior for special study; devise continua for measuring and rating both nations and individual votes; speculate intelligently about some of the votes that were not cast substantively because of absence or abstention; measure a single variable, thereby clarifying terminology; and transform qualitative into quantitative variables, thus permitting the application of additional statistical methods.

What is more, the data are presented in such a way that the reader, should he disagree with the definitions suggested, may rework the figures to suit his own standards. Both bloc and scale analysis present information about specific states, the latter providing data on single votes which also indicate the direction of attitudes. These quantitative techniques, then, try to present the maximum amount of data in their most useful and economical form.

These methods, we hope, will furnish at least a first step toward the ultimate goal of understanding the voting patterns of the Members of the UN General Assembly.

APPENDIX

Index of Cohesion of the Latin American Group, by Roll Call

Roll Call	Affirmative Votes	% of Group Affirmative	Abstentions	Negative Votes	Index of Cohesion
1	19	95	1	0	90
2	18	90	1	0	80
3	11	55	7	1	10
4	20	100	0	0	100
5	16	80	4	0	60
6	20	100	0	0	100
7	15	75	0	5	50
8	20	100	0	0	100
9	20	100	0	0	100
10	20	100	0	0	100
11	20	100	0	0	100
12	4	20	12	3	20
13	12	60	8	0	20
14	19	95	0	0	90
15	19	95	1	0	90
16	20	100	0	0	100
17	10	50	6	4	0
18	19	95	0	0	90
19	11	55	4	4	10
20	9	45	2	8	0
21	12	60	8	0	20
22	18	90	2	0	80
23	6	30	7	6	0
24	20	100	0	0	100
25	20	100	0	0	100
26	19	95	1	0	90
27	20	100	0	0	100

Index of Group Cohesion, .670.

Note: To calculate the Index of Likeness on any roll call between any two groups, subtract the smaller percent affirmative votes from the larger and take the complement of the remainder. The index for all issues is the arithmetic mean of the individual issue indices.

Key to the Roll Calls, Eleventh Session, 1956–57

1. A/3350. Agenda item 24. Inclusion on the agenda of problem of the treatment of people of "Indian origin" in the Union of South Africa.
2. A/3350. Agenda item 61. Inclusion on the agenda of the question of race conflict in the Union of South Africa.
3. A/3350. Agenda item 64. Inclusion on the agenda of the West Irian problem.
4. A/3350, par. 7. Exclusion from the agenda of the problem of the representation in the UN of the Chinese Peoples' Republic.
5. A/3357/Rev.2 as amended by El Salvador (A/L.211). Inclusion of a reference to Convention on Crime and Genocide in respect to Soviet and

Hungarian conduct in connection with the Hungarian revolution.

6. Same as 5. Resolution, as a whole, condemning Hungary and USSR for their actions in connection with the Hungarian revolution.
7. A/3368/Rev.3. Resolution, as a whole, of Ceylon, India, Indonesia, urging that foreign troops be withdrawn from Hungarian territory.
8–11. Hungarian amendments (A/L.214) to American resolution (A/3374) condemning Soviet and Hungarian repression of the revolution. These amendments dealt with deletion of the first three paragraphs and revision of paragraph 4, respectively.
12. Belgian amendment (A/L.215) to twenty-power resolution (A/3385/Rev.1) urging total withdrawal of foreign troops from Egypt, noting that some troops have already been withdrawn.
13. A/3383 (Annex)/Rev.1. Secretary-General's resolution on arrangements for UNEF.
14. A/3436/Rev.2. Twenty-power resolution calling for an end to Soviet intervention in Hungary and for the admission of UN observers into that country.
15. A/3487/Rev.1. Twenty-four-power draft resolution calling on the Hungarian government to assent to observers on her soil.
16. A/3449/Add.1. Draft resolution of the Fourth Committee which "considers with satisfaction" French accomplishments in Togoland.
17. A/3462. British amendment to Draft Convention on the Nationality of Married Women, providing that the Convention have no application to any territory under British administration until that territory has consented.
18. A/3533. General Committee recommendation that Soviet Union's charges of American aggression not be included on the agenda.
19. A/3531 and Add.1, par. 63. Swedish proposal that a question concerning the transmission of information on non-self-governing territories under Article 73 (e) be considered an "important" question.
20. Same as 19. Calls for the establishment of an *ad hoc* committee to check on the responses to Secretary-General's questionnaires about the administration of non-self-governing territories.
21. A/3554 and Add.1. Fourth Committee resolution calling on the administering powers to "estimate the period of time required for the attainment of self-government or independence" by their territories.
22. A/3558. Paragraph 2 of the Fifth Committee's report calling for class 5 post adjustment for New York.
23. A/3565, par. 7. Resolution of the First Committee calling for maintenance of the *status quo* in West Irian while Indonesia and the Netherlands negotiate a settlement.
24. A/3658 and Add.1. Thirty-seven-power draft resolution condemning Soviet and Hungarian obstruction of UN activity and giving the President of the General Assembly the power to act as he sees fit to achieve General Assembly objectives with respect to Hungary.
25. A/3343, par. 5. Inclusion on the agenda of the whole Hungarian issue.
26. Indian amendment (A/L.210) to A/3350, section II, seeking to put discussion of the representation of Communist China on the agenda.
27. A/3413. Resolution calling on the Hungarian government to admit UN observers.