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THE EFFECT OF SIZE, DEVELOPMENT AND ACCOUNTABILITY ON FOREIGN POLICY

by Stephen A. Salmore and Charles F. Hermann*

I. INTRODUCTION

Even a casual observer of international politics recognizes that states differ in the kinds of foreign policies they pursue. He also might note that a state which has continuously sought a particular set of objectives by means of a routinized series of techniques may suddenly shift either its techniques or its objectives. These simple observations invite the search for variables that will explain the variation in foreign policies between states and across time. Although such exploration has been a primary theme in the literature on foreign policy, most of the work has been highly descriptive and particularistic. At best when students of foreign policy move beyond explaining a single policy in a given country, they tend to list numerous variables—size of military, level of technology, state of morale—without hypothesizing how these elements are related to the kind of policies a government will pursue.

One hypothesis that does relate independent variables to variation in foreign policy can be drawn from the theoretical framework proposed by Rosenau.[1] He dichotomizes three variables—size of nation (large, small), economic development (developed, underdeveloped), and political accountability of the government (open, closed) to construct an eight-fold classification of nations. As shown in Table 1, any nation can be located in the matrix by ascertaining its value with respect to these three variables. Rosenau contends that states who are members of the same genotype in his classification are more likely to follow similar kinds of foreign policies than are states which belong to different genotypes. We propose to provide an initial test of this hypothesis.

Two questions arise immediately about the Rosenau classification: Why select these three variables for constructing the genotypes? Why treat the variables as dichotomies? Rosenau recognizes the prominence given in the theoretically-oriented literature on foreign policy to questions involving these variables. For example, is size and the associated economy of scale necessary to generate the

* The authors are associated respectively, with Douglass College of Rutgers University and Ohio State University. Necessary computations were supported by a grant from the center for Computation and Information Services, Rutgers University.

[1] James N. Rosenau, "Pre-theories and Theories of Foreign Policy," in R. Barry Farrell, ed., *Approaches to Comparative and International Politics* (Evanston: Northwestern University Press, 1966), pp. 27–92; and James N. Rosenau, "Foreign Policy as Adaptive Behavior," Compartative Politics, 2 (April 1970), pp. 365–387.

advanced technologies used in the foreign policies of the superpowers? Do small states tend to define more narrowly and more clearly their foreign policy objectives in the international system? Is a government more likely to pursue a risky and belligerent foreign policy if that nation's level of economic development is low relative to other countries? Are policies designed to maintain the status quo more often initiated by the governments of countries that have a high level of economic development as compared to others? Are governments of closed societies more likely to undertake sudden and rapid changes in the direction of their foreign policies? Are policy makers in an open political system more responsive than other

TABLE 1: Selected Nations Classified According to Size, Development and Accountability

	Large		Small	
	Developed	Underdeveloped	Developed	Underdeveloped
OPEN	Argentina Australia Belgium Canada France Germany (West) Italy Japan Netherlands South Africa Switzerland Sweden U.S.A. U.K. (14)	Brazil India Mexico Turkey (4)	Austria Chile Cyprus Denmark Greece* Israel Lebanon Singapore Venezuela (9)	Ceylon Columbia Kenya Malaysia Morocco Peru Philippines Rhodesia Tanzania Thailand Zambia (11)
CLOSED	Czechoslovakia Germany (East) Poland Rumania Spain U.S.S.R. (6)	China (P.R.) Indonesia Pakistan (3)	Bulgaria Cuba Hungary Portugal Yugoslavia (5)	Albania Algeria Burma Cambodia China (Nat.) Congo(Kinsh.) Ethiopia Ghana Guinea Iraq Iran Jordan Korea (No.) Korea (So.) Laos Nigeria Saudi Arabia Sudan Syria Tunisia U.A.R. Vietnam (So.) Vietnam (No.) Yemen (24)

* Greece was reclassified as closed in 1967 as a result of the change in government that year.

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[4] Edward R. Tufte, "I
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governments to indications that their existing foreign policies endanger the welfare of the nation?

Recently quantitative research has confirmed the salience that political scientists have attributed to the three variables in their inquiries. In one study, Sawyer correlated and factor analyzed 236 social, economic, and political characteristics for eighty-two nations.[2] Forty per cent of the total variance in the original matrix was accounted for by three dimensions labeled size, wealth, and political orientation. The unrelated variables that closely indexed these dimensions were population, gross national product per capita, and bloc membership (i.e., Communist, Western, or neutral). Another report compared national attributes identified as major dimensions in the Dimensionality of Nations project with findings from other independent factor analytic studies.[3] The comparison revealed that economic development, size, and bloc membership consistently appeared as major factors.

Recall that Rosenau dichotomizes his three variables to create the eight-fold classification of nations. The general procedure of dichotomizing data that is distributed among more than two values has received sharp criticism. For example, Tufte argues that "throwing everything into two bins by dichotomizing the data is just about the most severe form of censorship we could impose on the data. Even with the choice of the optimal cutting points, a major amount of information is lost by dichotomizing the data."[4] However, Rosenau seeks to substitute a few categories with theoretical utility for the complete list of all nations in the international system. Furthermore, one might contend that some kind of nation-typing —regardless of whether dichotomization is used—uncovers relationships blurred when nations are not grouped.[5] In order to test the hypothesis advanced by Rosenau, we obviously need to use his eight categories of nations. The results of this analysis may indicate whether this arrangement is more or less desirable than some alternative that doesn ot collapse the variables into dichotomies.

Elsewhere we have contended that one critical weakness in the study of foreign affairs is the inadequate classification, not of nations, but of foreign policy actions.[6] Classifications of policy based on geographical area (e.g., policy toward East Asia), techniques for implementation (e.g., military vs. economic means of exercising

[2] Jack Sawyer, "Dimensions of Nations: Size, Wealth, and Politics," *American Journal of Sociology*, LXXIII (September 1967), pp. 145–172.

[3] R. J. Rummel, "Indicators of Cross-National and International Patterns," *American Political Science Review*, LXIII (March 1969), pp. 127–147. Also see R. J. Rummel, "Some Empirical Findings on Nations and Their Behavior," *World Politics*, XXI (January 1969) pp. 226–241.

[4] Edward R. Tufte, "Improving Data Analysis in Political Science," *World Politics*, XXI (July 1969), p. 646.

[5] For example, see Philip M. Burgess, "Nation Types and Policy Outcomes: A Problem in Foreign Policy Analysis," a paper presented at the 65th Annual Meeting of the American Political Science Association, Roosevelt Hotel, New York City, September 2–6, 1969.

[6] Stephen A. Salmore and Charles F. Hermann, "Foreign Policy as a Dependent Variable in the U.S. and the U.S.S.R.," a paper presented at the 65th Annual Meeting of the American Political Science Association, Roosevelt Hotel, New York City, September 2–6, 1969; and Charles F. Hermann, "Policy Classification: A Key to the Comparative Study of Foreign Policy," in a volume edited by James N. Rosenau, Vincent Davis, and Maurice East to be published by the Free Press.

influence), or grand strategies (e.g., containment or wars of national liberation) serve some useful purpose as means of identifying and organizing foreign policies, but their utility for constructing scientific theory appears dubious. We simply have extremely few classifications or scales of foreign policy actions which fulfill the triple criteria of (1) exhaustive coverage for all external acts by all international actors, (2) potential contribution to theory, and (3) comparable operational definitions for all international actors.

One exception to this general weakness in foreign policy classification is the pioneering work of Charles McClelland.[7] Over the years McClelland has developed a series of ad hoc categories to classify all discrete foreign policy events as they are reported in public sources like the New York *Times*. With several modifications described below, we used these data to investigate the amount of variance that Rosenau's classification of nations explains in various kinds of foreign policy. In addition to the exploration of this basic hypothesis, we determined how stable the patterns were over a two-year period and what relationships occurred between various foreign policy actions and each separate variable used to construct the genotypes.

II. PREPARATION OF THE DATA

The basic unit of analysis in the World Event/Interaction Survey (hereafter referred to as WEIS) is the event. Each foreign policy act is coded as belonging to one of sixty-three types which are grouped into twenty-two classes of events.[8] The initiating actor and the target of the action are also coded. Thus a newspaper report of Peru's nationalization of an American company would be coded as follows: initiating actor—Peru; type of event—Seize; target of action—U.S. Each actor and event type is assigned a number and this information is transferred to punch cards in order to facilitate subsequent analysis.[9]

This coding procedure produced a data set whose basic unit was the event. However, in order to use these data for the analysis of the foreign behavior of nations, it was necessary to aggregate the WEIS events by initiating actor. For each initiating actor the total number of events in each classification was obtained. These 22 types of actions plus the total number of events were used as the dependent variables—foreign policy behavior—in the following analysis.

The WEIS data available to us covered the period from January 1, 1966 through December 31, 1967. For the purposes of this study the events were aggregated, as indicated above, for 1966 and 1967 separately and two parallel analyses were carried

[7] Charles A. McClelland and Gary D. Hoggard, "Conflict Patterns in the Interactions Among Nations," in James N. Rosenau, ed., *International Politics and Foreign Policy*, Revised edition, (New York: Free Press, 1969) pp. 711–724. Also see the various working documents prepared by the WEIS Project, University of Southern California.

[8] See Table 3 for a list of these classes.

[9] For a complete description of this data collection project see Fitzsimmons, Hoggard, McClelland, Martin, and Young, *World Event/Interaction Survey Handbook and Codebook*, (1969, mimeo).

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[10] Rosenau, "The

[11] Ralph L. Lowe
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out. For any given time period, unique events and situations as well as underlying processes cause variation in the data. By repeating the same manipulations in two time periods the effects of unique factors are easier to detect and it becomes, therefore, more likely that underlying "structural" relationships between variables can be identified. The aggregation procedure produced for 1966, 137 initiators who collectively accounted for 5550 events, and for 1967, 132 initiators and 5549 events.

Examination of who the initiating actors were raised another problem. Not all initiators are nations. Some were formal international organizations (the United Nations, for example), while others were alliances (NATO, the Warsaw Pact, OAS, etc.), and still others were insurgent groups not formally recognized as independent or even in uncontested possession of any territory (the NLF, Palestine Liberation Army, Biafra, etc.). Since national attributes such as size and development could not be ascribed to these actors in any meaningful way, they were eliminated from the analysis. Over 100 initiating nations remained for each year. As would be expected, a few of these nations accounted for a large number of events, many for a smaller, but still substantial number, and some for extremely few events. The paucity of events for this last group probably reflects some bias in the data source—the New York *Times*. Less dramatic events involving smaller, less salient (from the American point of view) countries are more likely to go unreported. These nations were also eliminated. The criterion established was that to be included a nation had to have initiated at least 15 events over the two year period. This seemed to be the minimum necessary for meaningful statistical analysis. Eliminating countries which did not achieve this minimum left a total of 76 nations which together accounted for 4940 events in 1966 (89% of the total) and 4851 events in 1967 (89% of the total).

These 76 nations were then classified on the genotypic dimensions of accountability, size, and development. These variables were operationalized in line with suggestions made by Rosenau and others.[10] Accountability was indicated by the relative degree of freedom of the press, size by the total gross national product (GNP), and development by the gross national product per capita (GNP/capita) of each nation. The School of Journalism at the University of Missouri has constructed a measure of press freedom. Based on the judgements of both foreign and American newsmen, the index is "designed to measure the independence of a nation's broadcasting and press system and its ability to criticize its own local and national governments."[11] Of the seventy-six nations, seventy-one were among those rated on a scale ranging from +3.06 to −3.06. The other five countries could be roughly placed by consulting the measure of press freedom in Banks and of

[10] Rosenau, "The Politics of National Adaptation," *op. cit.*

[11] Ralph L. Lowenstein, "PICA (Press Independence and Critical Ability Index): Measuring World Press Freedom," University of Missouri, School of Journalism, Freedom of Information Center Publication No. 166 (August, 1966) as cited in Charles Taylor and Michael Hudson, *World Handbook of Political and Social Indicators*, second edition, (forthcoming).

Textor's *A Cross Polity Survey*.[12] This source was also used to obtain measures of GNP and GNP/capita. Those nations not included in this study were placed in the appropriate Banks and Textor category by consulting the *World Handbook of Political and Social Indicators*[13] and the "Dimensionality of Nations" data.[14]

The representativeness of this group of 76 countries was determined by comparing how these countries distributed themselves on the three genotypic dimensions as compared to the 115 countries reported in *A Cross-Polity Survey* (Table 2). The results clearly indicate that the selected countries tend to be larger, more closed, and more highly developed than the countries examined by Banks and Textor. This skewing is a direct result of excluding those countries responsible for initiating few or no events. Thus the nations that are included in this study represent not all countries, but only those which requlary initiate a minimum number of externally targeted events. It should not be surprising that these regular initiators tend to be large and developed. These countries are more likely to have the resources necessary to regularly interact with other countries and are more likely to have what events they do initiate reported in the foreign press. That more open than closed countries were excluded, however, is more surprising. This can perhaps be attributed to the fact that regularly engaging in foreign interactions, being

TABLE 2: Comparison of the 115 Nations in *A Cross-Polity Survey*[a] and 76 Regular Initiators of Foreign Interactions on the Three Genotypic Variables

	Cross-Polity	Regular Initiators
Freedom of the Press		
A. Complete	44% (43)	30% (23)
B. Intermittent	18% (17)	26% (20)
G. Internally Absent	22% (21)	25% (19)
H. Internally and Externally Absent	16% (16)	18% (14)
Gross National Product		
A. & B. $125 billion and above	9% (10)	13% (10)
G. $25—124.9 billion	17% (20)	26% (20)
H. $5—24.9 billion	23% (32)	37% (28)
I. Under $1 billion	46% (53)	24% (18)
Gross National Product per Capita		
A. & B. $600 and above	20% (23)	24% (18)
G. $300—599	16% (18)	22% (17)
H. $150—299	19% (22)	18% (14)
I. Under $150	45% (51)	36% (27)

[a] Arthur Banks and Robert Textor, *A Cross-Polity Survey*, (Cambridge: M.I.T. Press, 1963)

[12] Arthur S. Banks and Robert B. Textor, *A Cross Polity Survey* (Cambridge: The M.I.T. Press, 1963).

[13] Bruce Russett, et al., *World Handbook of Political and Social Indicators* (New Haven: Yale University Press, 1964).

[14] See R. J. Rummel, "The Dimensionality of Nations Project," in Richard Merritt and Stein Rokkan, eds., *Comparing Nations* (New Haven: Yale University Press, 1966).

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somewhat salient in the international system, and censoring the press all require at least some resources. Small, underdeveloped countries neither interact regularly nor censor the press, more out of a lack of resources than a lack of will. Another explanation is that the excluded countries tend to have only recently received their independence. The lack of press censorship may then be merely a carry-over from pre-independence days that often is a casualty of the first serious political crisis—a crisis these countries have yet to experience. Both explanations raise serious questions about how adequately press freedom measures political accountability.

In line with the Rosenau hypothesis, the three genotypic variables were dichotimized. The Banks and Textor categories were used to establish preliminary cutting points. This resulted in few or no entries in some of the cells of Rosenau's eight-fold classification of genotypes. This reflects moderate correlations among the three genotypic variables. For example, since size and development are positively related, there are many large, developed nations but few small, developed ones. In order to insure that all eight genotypes were adequately represented, the cutting points on the size and development dimensions were appropriately adjusted. Data from the *World Handbook* and the "Dimensionality of Nations" project were used to determine which countries could be shifted from large to small and from developed to underdeveloped. The final distribution of the 76 nations is given in Table 1. The unequal entries, even after adjusting the cutting points, indicate that the dichotomized genotypic variables still remain moderately correlated.[15]

III. ANALYSIS OF 22 FOREIGN EVENT TYPES

The first step in the data analysis was to see how effective each of the three dichotomized variables, individually, was in explaining variation in the 23 foreign policy variables (22 event types plus the total number of events). The procedure used was a modified form of a one-way analysis of variance. This involved regressing each of the 23 dependent variables, in turn, on each of three dummy variables. The dummy variables represented the three dichotomized genotypic variables and assumed only the values of 1 or 0. In the case of size, for instance, 1 stood for large and 0 for small. Similarly, for the other two independent variables 1 represented open or developed and 0 closed or small. Regressing a dependent variable on a dummy variable is the equivalent of performing a one-way analysis of variance of the dependent variable grouped into two categories. The F ratio that is used to test the significance of the regression is exactly the same F ratio that would obtain in a standard analysis of variance to test the null hypothesis of equal category means. The main advantage of the regression technique is that it can easily be generalized

[15] Measures of association (Goodman-Kruskal *gamma*) between the final dichotomized genotypic variables are as follows:

accountability and size	.49
accountability and development	.58
size and development	.76

to handle multiple independent variables where there are unequal numbers in the categories of these variables. This is the case later on in the analysis and it is this situation of unequal n's that standard analysis of variance procedures can not handle.[16]

Table 3 presents the results of the single variable analysis for 1966 and 1967. The entries in the table, except for the first column, are simple correlation coefficients, the analogue of the multiple correlation coefficient when there is only one independent variable. The simple "*r*" has the same interpretation as the multiple "*r*". It measures the fit of the regression to the data and when squared is the per cent of the

TABLE 3: Correlation Coefficients Between Genotypic Variables and Interaction/Event Categories for 1966 and 1967[a]

Categories	Mean		Accountability		Size		Development	
	1966	1967	1966	1967	1966	1967	1966	1967
1. Yield	0.61	0.32	11	07	24**	11	13	11
2. Comment	11.47	10.86	12	04	29**	17	18	20
3. Consult	11.43	10.33	07	07	35***	29**	21*	22*
4. Approve	2.64	1.95	03	10	29**	22*	16	14
5. Promise	1.61	1.42	06	02	29**	27**	19	16
6. Grant	2.70	2.42	01	01	22*	21*	14	11
7. Reward	2.36	2.00	11	10	30***	25**	23*	20*
8. Agree	5.09	3.82	06	10	36***	36***	18*	28**
9. Request	2.50	2.03	10	07	23**	21*	19*	19*
10. Propose	3.47	3.51	15	09	36***	26**	28**	22*
11. Reject	3.28	4.24	−05	−02	34***	30***	16	15
12. Accuse	8.47	7.37	−22*	−19*	20*	16	−01	04
13. Protest	1.18	1.24	02	−11	27**	88***	10	08
14. Deny	1.74	1.17	08	12	21*	80*	17	24**
15. Demand	0.74	0.76	−10	−20	26**	24**	−00	11
16. Warn	1.36	1.58	−01	−05	27**	30***	15	19*
17. Threaten	0.53	0.38	−05	−11	11	20*	−04	−03
18. Demonstrate	1.04	1.45	01	−09	47***	26**	03	−02
19. Reduce Rel.	1.42	2.03	07	−04	32***	17	22	04
20. Expel	0.63	0.45	06	−03	20*	09	08	−11
21. Seize	0.77	1.04	−16	−03	08	11	06	07
22. Force	1.01	2.93	−09	−06	−04	−05	−11	−04
TOTAL	65.00	63.83	04	03	32***	25**	18	18

[a] Entries are multiplied by 100. Underlined coefficients indicate $p < .25$.

* $p < .10$

** $p < .05$

*** $p < .01$

[16] For a complete description of this technique, write to the authors for a special appendix.

variance in the dependent variable explained by the regression.[17]

Two major conclusions can be drawn from an examination of Table 3. First, none of the genotypic variables, acting alone, explains a very large part of the variance even though some of the coefficients achieve rather robust levels of significance. Second, size is clearly the best of the three variables in accounting for what variation is explained. Development lags far behind, slightly ahead of accountability. This general pattern holds for both 1966 and 1967. There are some exceptions, however, including a number that occur in both years. Accountability is the most effective of the three in explaining variations in category 12—Accuse. The sign of the coefficient for accountability, in this case, is negative, indicating that closed regimes engage in more accusatory actions than open regimes. This supports the speculation that closed regimes use external threat to maintain internal power. An accusation would suggest the existence of foreign threat without necessarily leading to actual conflict.

This, and other exceptions, notwithstanding, size is clearly the most potent of the three genotypic variables. This holds true for virtually all categories for both years. Such a conclusion was perhaps foreshadowed when we noted that primarily smaller nations failed to engage in the requisite minimum number of events. It seems clear that the amount of a nation's resources determines to a definite, though limited, degree the extent of its participation in the international system. The additional information Table 3 provides is that this "size effect" holds across a wide range of foreign behavior, from friendly (e.g., Consult, Approve, and Promise) to hostile (e.g., Demand, Warn and Demonstrate).

This finding by itself is not very interesting, merely confirming the plausible and lending credence to what others have noted. A more interesting line of analysis would be to examine the relative frequency of the 22 types of behavior rather than their absolute number, thereby controlling for the total number of events a country initiates. Relative frequency is determined by dividing each category total for a nation by the total number of events a country initiates, yielding the percentage of the total events accounted for by each event type.

The results of the analysis of these percentages are presented in Table 4. Examination of these coefficients again leads to the conclusion that none of the genotypic

[17] Given the exploratory nature of this study, the correlation coefficient is a more informative statistic to present than just noting whether or not the F ratio achieved a given level of significance. (Note that there is an exact mathematical equivalence between the "r" of a regression and its associated F ratio given by the formula—

$$F = (r^2/1 - r^2)\ (n - k - 1)/k$$

—where k is the number of independent variables in the regression and n is the number of observations.) There is a real question of what level of significance should be used in this study, or, if these tests should be made at all. Significance level refers to the probability of committing a Type I error—accepting as true, a false hypothesis. In an exploratory study, as this one is, Type II error is more serious—rejecting as false, a true hypothesis. There is a trade-off between risks of the two types. The less the possibility of accepting a false hypothesis the greater the risk of rejecting a true one. In this paper we will note significance levels as low as .25 in order to reduce the risk of rejecting a true hypothesis. However, more emphasis will be placed on the substantive meaning of the numbers reported than on the level of significance achieved.

variables, acting alone, effectively explains variation in the dependent variable. However, size is no longer the most important of the three. Accountability and development emerge as slightly better predictors with accountability somewhat more frequently exhibiting a higher coefficient. Again accountability proves potent in explaining the rate of accusatory actions, and, in addition has a relatively high coefficient for both years for category 20—Expel. As the "*r*'s" are again negative more evidence is provided for our original speculation concerning the use closed systems make of external threat. Accusations and expulsions would suggest foreign hostility without leading to unwanted conflict.

If none of the three independent variables, individually, are effective in explaining differences in foreign policy actions among the eight genotypes, how effective are they acting together? This, after all, is the true test of the basic Rosenau hypothesis. Using the dummy variable regression technique, the foreign policy

TABLE 4: Correlation Coefficients Between Genotypic Variables and Interaction/Event Category Percentages for 1966 and 1967[a]

Categories	Mean		Accountability		Size		Development	
	1966	1967	1966	1967	1966	1967	1966	1967
1. Yield	0.35	0.12	−07	−12	25**	−07	−01	06
2. Comment	13.74	17.04	24**	16	21**	00	17	05
3. Consult	22.27	21.33	−03	01	−12	−07	−08	−10
4. Approve	3.84	2.26	−10	18	04	22**	02	08
5. Promise	1.30	1.51	−07	−10	01	01	−01	−10
6. Grant	5.54	5.38	−05	−12	−15	−05	03	−17
7. Reward	2.48	1.93	06	16	32***	30***	24**	29**
8. Agree	8.24	9.04	05	25**	−07	04	−07	07
9. Request	4.20	3.11	06	14	−08	−08	00	18
10. Propose	5.50	6.34	29**	12	19*	03	30***	01
11. Reject	3.06	3.94	06	04	23**	20*	26**	01
12. Accuse	11.25	9.82	−38***	−32***	−12	−12	−14	−04
13. Protest	1.79	1.47	18	−14	02	09	−07	18
14. Deny	1.83	1.95	−02	00	−00	11	03	16
15. Demand	1.07	0.97	05	−10	02	06	−15	09
16. Warn	1.76	1.34	−01	−25**	00	−02	02	−01
17. Threaten	0.78	0.56	−11	−04	−06	05	−18	−14
18. Demonstrate	2.45	2.09	08	−01	18	15	−02	−02
19. Reduce Relations	2.21	2.88	−06	−18	04	−10	03	−02
20. Expel	1.62	0.99	22*	22*	03	−21*	00	−12
21. Seize	2.55	1.66	−11	00	−18	00	−09	11
22. Force	2.18	3.92	−09	−22*	−17	−20*	−24**	−21*

[a] Coefficients are multiplied by 100. For underlined entries $p < .25$.

* $p < .10$

** $p < .05$

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	Development	
7	1966	1967
	−01	06
	17	05
	−08	−10
**	02	08
	−01	−10
	03	−17
***	24**	29**
	−07	07
	00	18
	30***	01
*	26**	01
	−14	−04
	−07	18
	03	16
	−15	09
	02	−01
	−18	−14
	−02	−02
	03	−02
	00	−12
	−09	11
	−24**	−21*

variables were regressed on the three independent variables. The results were not encouraging. The genotypic variables acting together do little better than size alone in accounting for variation in the dependent variables. However, before rejecting the Rosenau hypothesis, some questions should first be raised about the event classifications.

IV. ANALYSIS OF 6 AGGREGATED EVENT TYPES

Looking at Tables 3 and 4, it is fairly easy to see patterns in one year being repeated in the next. For example, in 1966, development is significant at the .10 level or better in explaining the variation in the number of events in four categories—Consult, Reward, Agree, and Propose. In 1967, the "*r*" for development again achieves this level of significance for the same four categories. Such a repetition lends credence to the belief that an underlying structural relationship is being tapped. There are, however, discontinuities. If continuities indicate basic, stable relationships, albeit of modest proportions, discontinuities are indicative of something less auspicious. The relationship between foreign policy actions and the genotypic variables might be changing from year to year. A certain amount of this kind of variability is to be expected. However, unstable patterns of coefficients could also indicate problems in the classification scheme itself. Distinctions between categories may not be very clear resulting in a certain amount of misclassifications. The inter-annual correlations presented in Table 5 are one way of measuring the year to year stability of the event categories. These coefficients are product-moment correlations between the number of events in a given category for one year and the number of events in that category for the other year. If there were classification errors and the categories were reflective of underlying dimensions, the inter-annual correlations would be fairly high. In fact, many of them are—16 are .70 or higher and 12 are .90 or higher. A few, however, are quite low—2 are less than .40. These smaller coefficients suggest that the 22 categories can be aggregated into still more general classifications which would better reflect a smaller number of basic dimensions of foreign policy actions. By using a higher level of aggregation the number of misclassifications could, perhaps, be reduced, and by dealing with a smaller number of categories the interpretability of the findings would be increased.

One possible way of further aggregating the foreign event types is suggested by McClelland. The 22 types of events that we have been using, McClelland argues, could be roughly arrayed on a cooperation-conflict dimension. Some event types, however, are ambiguous, being neither clearly conflictual nor cooperative. These—Comment and Consult—McClelland considers to be a form of "overhead"—actions that nations find necessary in order to maintain their place in the international system. These he labels "Participation." In 1966 and 1967, the total number of events were about evenly divided among conflict, participation, and cooperation types. In addition, McClelland distinguishes between verbal acts and those that go beyond words to some form of action. A final distinction he makes is between verbal conflict statements that are essentially defensive—Reject, Protest, and

Deny—and those that are offensive—Accuse, Demand, Warn, and Threaten. The result is a set of six more general classes of interaction events—Verbal Cooperation, Cooperative Action, Participation, Verbal Conflict-Defensive, Verbal Conflict-Offensive, and Conflict Action.

To see if this classification represents an improvement, the event data for each country were reaggregated into the six categories and their inter-annual correlations were computed (Table 5). Clearly, there has been an improvement in the year-to-year stability of the categories. For the 22 original classifications the average correlation is .78; for the six aggregated categories it is .87. This increase cannot be attributed to the fact that categories containing more events had higher correlations and these contributed disproportionally to the aggregated category correlations. Verbal Conflict-Offensive is composed of four categories whose inter-annual correlations are .94, .63, .90, and .67. Yet its coefficient of .95 exceeds all of these. It seems reasonable to conclude that the aggregated categories do come closer to representing stable dimensions of foreign policy actions than the original 22 categories.

Using these six aggregated categories as the dependent variable, the multi-

TABLE 5: Interannual Correlations for 22 Categories and 6 Aggregated Categories of Event/Interactions

		r			*r*
4.	Approve	.93			
5.	Promise	.96			
8.	Agree	.91	I.	Verbal Cooperation	.96
9.	Request	.89			
10.	Propose	.92			
1.	Yield	.90			
6.	Grant	.93	II.	Cooperative Action	.98
7.	Reward	.98			
2.	Comment	.39	III.	Participation	.81
3.	Consult	.96			
11.	Reject	.76			
13.	Protest	.94	IV.	Verbal Conflict—Offensive	.89
14.	Deny	.75			
12.	Accuse	.94			
15.	Demands	.75	V.	Verbal Conflict—Defensive	.95
16.	Warn	.90			
17.	Threaten	.63			
18.	Demonstrate	.68			
19.	Reduce Relations	.59			
20.	Expel	.31	VI.	Conflict Action	.70
21.	Seize	.50			
20.	Force	.73			
	Total	.96			

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TABLE 6:
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Aggregated Categories	
I. Verbal Coop.	$\bar{x}$=15.32
II. Coop. Action	$\bar{x}$=5.66
III. Participation	$\bar{x}$=22.91
IV. Verb.Conf.-Def.	$\bar{x}$=5.14
V. Verb.Conf.-Off.	$\bar{x}$=11.09
VI. Conflict Act.	$\bar{x}$=4.88

I. Verbal Coop.	$\bar{x}$=12.72
II. Coop. Action	$\bar{x}$=4.74
III. Participation	$\bar{x}$=21.18
IV. Verb.Conf.-Def.	$\bar{x}$=4.80
V. Verb.Conf.-Off.	$\bar{x}$=9.67
VI. Conflict Act.	$\bar{x}$=7.89

[a] Underlined en

* $p<.10$
** $p<.05$
*** $p<.01$

variate analysis was reperformed. The results are given in Tables 6 and 7. In addition to the multiple correlation coefficients for the three variable regressions, the tables also provide an indicator of how effective each independent variable was in contributing to the explained variation while controlling for the effects of the other two independent variables. In each table, under the names of the aggregated categories is the mean for that category—either the average number of events or the average percentage of the total events that fall in that category. The last column

TABLE 6: Unadjusted (upper entries) and Adjusted Deviations (lower entries) from Aggregated Category Means (number of events)[a]

Aggregated Categories	Accountability		Size		Development		Multiple
	Open	Closed	Large	Small	Developed	Underdeveloped	r
1966							
I. Verbal Coop.	3.92	−3.92	15.02***	− 8.28***	7.89*	−6.39*	
$\bar{x}$=15.32	−0.58	0.58	13.50**	− 7.44**	3.22	−2.60	.34**
II. Coop. Action	1.34	−1.34	6.08**	− 3.06**	3.49	−2.82	
$\bar{x}$=5.66	−0.09	0.09	5.25*	− 2.89*	1.62	−1.31	.28*
III. Participation	5.43	−5.43	22.37***	−12.33***	11.29*	−9.15*	
$\bar{x}$=22.91	0.67	−0.67	19.98**	−11.01**	3.58	−3.37	.33**
IV. Verb.Conf.-Def.	0.33	−0.33	4.93***	− 2.72***	2.30	−1.86	
$\bar{x}$=5.14	−0.79	0.79	4.73**	− 2.60**	0.86	−0.70	.30*
V. Verb.Conf.-Off.	−4.46*	4.46*	6.98*	− 3.85*	0.35	−0.28	
$\bar{x}$=11.09	−5.92**	5.92**	9.48**	− 5.22**	0.99	0.80	.34**
VI. Conflict Act.	−0.07	0.07	2.56***	− 1.41***	0.68	−0.59	
$\bar{x}$=4.88	−0.54	0.54	2.82***	− 1.56***	−0.15	0.12	.34**
1967							
I. Verbal Coop.	2.57	−2.44	10.94***	− 6.03***	6.81	−5.51	
$\bar{x}$=12.72	−0.24	0.23	9.12*	− 5.03*	3.57	−2.90	.30*
II. Coop. Action	1.07	−1.02	4.67**	− 2.57**	1.93	−1.56	
$\bar{x}$=4.74	0.10	−0.10	3.97	− 2.19	1.39	−1.13	.24
III. Participation	2.32	−2.21	11.85**	− 6.53**	8.67	−7.02	
$\bar{x}$=21.18	−1.00	1.00	9.21	− 5.08	5.67	−4.59	.29*
IV. Verb.Conf.-Def.	−0.46	0.44	3.75***	− 2.07***	1.82	−1.47	
$\bar{x}$=4.80	−1.01	0.96	3.68	2.03	0.80	−0.65	.33**
V. Verb.Conf.-Off.	−3.54	3.35	5.14*	− 2.83*	1.36	−1.10	
$\bar{x}$=9.67	−5.02**	4.77**	6.62*	− 3.65*	0.54	0.43	.30*
VI. Conflict Act.	−1.19	1.13	2.29**	− 1.26**	−0.16	0.13	
$\bar{x}$=7.89	−1.64	1.56	3.31	− 1.83	−0.84	0.68	.15

[a] Underlined entries indicate $p < .25$

* $p < .10$
** $p < .05$
*** $p < .01$

contains the multiple "r". This is a measure of the fit of the three variable regression equations to the data and when squared is the per cent of the total variation that independent variables jointly explain. All other entries in the tables are deviations of a particular category mean (of a genotypic variable) from the grand mean for all states. The larger the deviation the more of an impact that particular category has had.[18] For each foreign policy classification the top line contains the

TABLE 7: Unadjusted (upper entries) and Adjusted (lower entries) Deviations from Aggregated Category Means (percentage events)[a]

Aggregated Categories	Accountability		Size		Development		Multiple
	Open	Closed	Large	Small	Developed	Underdeveloped	r
1966							
I. Verbal Coop.	1.74	−1.74	0.61	−0.34	1.01	−0.82	
$\bar{x}$=23.08	1.63	−1.63	−0.20	0.11	0.51	0.42	.16
II. Coop. Action	0.12	−0.12	0.65	−0.36	1.32	−1.07	
$\bar{x}$=8.37	−0.56	0.56	0.04	−0.02	1.50	−1.22	.19
III. Participation	1.71	−1.71	0.24	0.13	0.26	−0.22	
$\bar{x}$=36.01	1.84	−1.84	0.21	−0.11	0.31	−0.25	.11
IV. Verb.Conf.-Def.	0.88	−0.88	1.24	−0.68	0.98	−0.81	
$\bar{x}$=6.67	0.60	−0.60	0.77	−0.43	0.91	−0.73	.20
V. Verb.Conf.-Off.	−4.04***	4.04***	−1.69	0.93	−1.92	1.55	
$\bar{x}$=14.86	−3.87***	3.87***	−0.14	0.08	−0.51	0.40	.34***
VI. Conflict Act.	−0.18	0.18	−1.06	0.58	−1.67	1.35	
$\bar{x}$=11.01	0.36	−0.36	−0.27	0.15	−1.70	1.38	.17
1967							
I. Verbal Coop.	4.46***	−4.33***	1.36	−0.75	1.84	−1.49	
$\bar{x}$=22.26	4.51***	−4.27***	0.56	−0.30	0.64	−0.52	.34***
II. Coop. Action	−0.42	0.40	0.75	−0.40	−0.30	0.24	
$\bar{x}$=7.43	−0.52	0.50	1.24	−0.68	−0.59	0.47	.12
III. Participation	2.04	−1.94	−1.19	0.65	−0.92	0.74	
$\bar{x}$=38.36	2.67	−2.53	−1.47	0.81	−1.23	0.99	.16
IV. Verb.Conf.-Def.	−0.05	0.05	2.73**	−1.51**	1.46	−1.18	
$\bar{x}$=7.35	−0.78	0.74	2.59*	−1.43**	0.76	−0.62	.25
V. Verb.Conf.-Off.	−4.39***	4.17***	−1.68	0.92	−0.51	0.41	
$\bar{x}$=12.69	−4.56***	4.32***	−0.70	0.38	1.16	−0.94	.38***
VI. Conflict Act.	−2.01	1.91	−2.48	1.36	−1.90	1.54	
$\bar{x}$=11.54	−1.47	1.39	−1.48	0.82	−0.91	0.73	.23

[a] Underlined entries indicate $p < .25$

* $p < .10$

** $p < .05$

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[18] Note that the size of the deviations alone does not indicate a significant relationship. To determine the significance level the intra-category variance must also be considered.

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deviation of each category of the independent variable acting alone. Immediately beneath is the deviation for the same category after controlling for the other two genotypic variables. A comparison of these two deviations indicates the ability of each of these variables to account for variation in the dependent variable after the effects of the other two independent variables have been removed.[19]

Table 6 presents the results for 1966 and 1967 using the raw number of events for each of the six event types as the dependent variable. The findings of the single variable analysis are largely confirmed. Except for one of the aggregated categories, the three variables of accountability, size, and development, acting together, are no better in explaining the variance in the data than size is acting alone. The amount of variance accounted for, as indicated by the square of the multiple correlation coefficient is, in general, a quite modest 10 per cent. The principle exception is in the Verbal Conflict-Offensive category. Accountability remains quite potent in both years in the three variable model. This finding bears out earlier speculation about the use closed societies make of accusations, or, as we can now say, of offensive verbal conflict actions. Another pattern worth noting is that while size completely overwhelms the already meager effects of development in the conflict category, this effect is less pronounced in the cooperation and participation categories. This indicates that even after the effects of larger size are controlled for, developed states engage in more peaceful, nonconflictual behavior than less developed states. This pattern is possible, perhaps, only after a minimum level of affluence is achieved.

Table 7 gives the results of the multivariate analysis using percentages of the total number of a country's events as the dependent variable. Again, earlier findings are reinforced. With the effects of size removed, the multiple "*r*'s" are of even more modest proportions. Accountability and development once again emerge as somewhat more effective than size in explaining what variation is accounted for. And again the open-closed dimension proves to be highly salient in the case of Verbal Conflict-Offensive. Accountability is also significant in explaining Verbal Cooperation in 1967, and a similar pattern of deviations occurs in 1966 although the same level of significance is not achieved.

V. CONCLUSIONS

The findings of the analysis presented in this paper are at best inconclusive. Certainly, the small amount of the variance explained by the three genotypic variables, whether acting jointly or independently, must raise serious doubts about the Rosenau hypothesis. The three national attributes of accountability, size, and development are only weakly related to the foreign policy actions of nations as measured by the WEIS data. Nations in the eight genotypes do not follow very different foreign policies. Having said that, it is also necessary to observe that Rosenau's whole approach was not given a complete and thorough test. Accountability, size and development could be operationalized in ways which better

[19] The analysis presented in this paper assumed an additive model; that is, no interaction effects. For a fuller discussion of this point see the appendix (available from authors).

reflect the actual variation nations exhibit on these dimensions. Dichotomization of variables that can be measured by interval level data results in an unforgivable waste of information. It can be argued that accountability is not susceptible to interval level measurement, but surely finer distinctions than just open and closed can be made. By postulating a model that involves only dichotomized variables, Rosenau is not doing full justice to his theoretical insights.

Having acknowledged the rather small percentage of explained variation, we should emphasize that significant and interesting relationships did emerge. The findings about the effects of size are not quite earth shaking, but it is comforting to know that size does have the effect that theory and "common sense" postulate. What is more encouraging are the findings concerning accountability. Of the three genotypic variables this was the clearly political one. That it proved significant in explaining certain types of action is quite encouraging to those of us who place our research bets on the proposition that internal politics does make a difference in explaining external behavior. Considering that the open-closed distinction is a gross one, more effort in analyzing the effects of this and other political variables is certainly warranted.[20]

A final comment is in order about the WEIS data itself. As noted earlier, these data were collected by a group which is making quite different pre-theoretical assumptions than Rosenau proposes. In coding only the initiating actor McClelland *et al.* are operating on the postulate that the explanation for international interactions lies at the systemic level. The result of this assumption is that other information about interactions is "lost." One cannot tell from the WEIS data the domestic context of the encoded act, nor, from McClelland's viewpoint would one want to. To go beyond Rosenau's hypothesis concerning the genotypic nature of accountability, size and development and test the whole Rosenau model with the WEIS data would be unfair to both the theory and the data. What is called for is a data collection effort which incorporates and reflects the theoretical model it will be used to evaluate. Such a project is now being undertaken by the authors in collaboration with Professor Rosenau.[21] It will hopefully be more successful because of the preliminary analysis of the WEIS data.

[20] For an interesting example of how a simple political variable was used to explain differences among nations in foreign conflict behavior see Jonathan Wilkenfeld, "Domestic and Foreign Conflict Behavior in Nations," *Journal of Peace Research*, (1968, no. 1), pp. 56–59.

[21] For a preliminary description of this project see Salmore and Hermann, *op. cit.*

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