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UNITED STATES NAVAL OPERATIONS IN LOW LEVEL WARFARE (U)

FINAL REPORT
BSR 2453
DECEMBER 1968

VOLUME II
APPENDICES

Bendix Aerospace Systems Division

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APPENDICES

Research Sponsored by the Office of Naval Research and technically directed by the U.S. Naval Research Laboratory, Code 4020

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Bendix

AEROSPACE SYSTEMS DIVISION
OFFICE OF NATIONAL SECURITY STUDIES
ANN ARBOR, MICHIGAN

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PREFACE

This volume contains supplementary materials to the study of U.S. naval operations in low-level warfare. Appendix A explains the data-making procedures and supplies enough information on data-card formats so that the estimated 4250 data cards produced in the study can be used in subsequent research. Appendix B contains a brief explanation of the factor analytic procedures and contains reproductions of the principle outputs interpreted in Volume I. Appendix C, in response to Task IV of the second phase of the contract, provides systematic abstracts of relevant conflict research and is the basis for Section VI of Volume I of this report. Appendix D addresses some of the non-combat aspects of U.S. operation in low-level warfare and is reported here because of its minor role in the second phase of the study. Appendix E is a careful selection of documentary sources used and has its greatest value as a guide to those who might wish to verify or replicate this study or to perform related work.

The work on this study spanned the period from June 1966 through December 1968 and was under the supervision of Richard H. Cady and William G. Prince, Principal Investigators. Karen S. Tidwell and W.G. Prince prepared Appendix A. The data was obtained and coded by Mrs. Tidwell, W.G. Prince, F.J. Mogdis, W. Martin and R. Young. Appendices B and C were prepared by F. Pearson. Appendix D was prepared by Professor E.B. Glick, Temple University. Professor R.J. Rummel and Mr. W. Phillips, University of Hawaii, provided valuable advice on research design, analysis, and interpretation.

It is obvious from the sources cited in Appendices A and E that considerable access to official sources was obtained via the U.S. Naval Research Laboratory. The cooperation of the following offices is gratefully acknowledged:

CNO, Division of Naval History
Office of the Assistant Secretary of Defense
for International Security Affairs
Department of State, Bureau of Intelligence and Research
Agency for International Development
U.S. Information Agency

None of these agencies nor the sponsor are responsible for the validity or reliability of the data or for the findings and recommendations contained in this report.

The results of the first phase of the study, approximately a year's work, were reported to the U.S. Naval Research Laboratory in Bendix Aerospace Systems Division, BSR 2198, September, 1967 (SECRET - NO FOREIGN).

APPENDIX A

DEFINITIONS, METHODS OF MEASUREMENT, DATA SOURCES AND CARD FORMATING

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I. INTRODUCTION

The principal tasks in the second phase of this study were three: to develop an empirical description of post-World War II low-level conflict; to relate the kind and level of U.S. naval operations to conflict; and to examine major actor (United States, Soviet Union, Communist China, and Eastern Europe) influence in the less developed countries of the world. Even though the tasks are interrelated, each task has its own unit of observation, set of variables, definitions, methods of measurement and data sources. A brief overview of the program and the details on data collection and coding are presented in this section. A detailed description of the variables and data making procedures is presented in Sections II, III and IV. Section V contains a description of the data card formats.

A. Conflict Data

In order to describe low level conflict (the organized use of force within and between states at the low levels of actual or threatened violence), a quantitative investigation was made of post-World War II inter and intra-state conflict behavior. Data were collected on 37 characteristics (variables) of 309 cases of politically significant conflicts occurring between 1944 and 1966. (Table A-1, Page A-79 lists the conflicts.) The 37 characteristics are treated as the variables in a data matrix. The variables describe e.g., time, space, parties to the conflict, damage, type, fatalities and disruption, and outcomes. The criteria for selecting the conflicts were (1) the conflict was either deadly; and/or (2) it was somehow related to operations undertaken by the U.S. Navy; and/or (3) it involved a serious potential or actual challenge to internal security or was interstate in nature.

The conflict identifying data (the conflict name, start and end date, and data source) are recorded on data card #1. The characteristics of the conflicts are recorded on data card #2. Some transformations of data card #2 are recorded on data card #2-1. (Section V, data card #1 discusses the classification of the conflict data.) The sources of the conflicts and their characteristics selected for analysis in this study are as follows:

(1) A set used by Bendix in Air Force Contract AF(638)-1582 in an analysis of the effects of the spread of nuclear weapons.

(2) A set used by the Institute of Naval Studies in Annex B to its Study 14. These data were derived mostly from Keesing's Contemporary Archives.

(3) A set used by Bendix in ONR Contract Nonr 4601(00).

(4) The data and information provided by DIA and the State Dept. to the Office of the Assistant Secretary of Defense for International Security Affairs, entitled, Conflict Analysis, Significant Political Violence, 1946-1966.

(5) Deadline Data on World Affairs.

B. Navy Operations Data

Navy operations in conflict are described by 51 variables which contain information on threat perception, U.S. forces used, type of operation, time and spatial considerations. The population consists of the 309 conflicts described above in Section A, some added "high-level conflicts," such as the Korean War and the Chinese Civil War; and 28 naval incidents--a total of 352 conflicts and incidents in which the Navy could have operated (Table A-2, Page A-87 lists the conflicts). The U.S. Navy was found to have deviated from normal operations in 94 of the 352 conflicts and incidents. In these 94 cases there were discerned 121 cases of separately codeable periods of naval operations. Even though U.S. Navy operations were not undertaken in every conflict, all the conflicts were included for the purpose of obtaining data on their characteristics and potential operating naval environment.

Data card #3 contains the naval operations and relevant environmental data. There are 379 #3 cards, at least one card each for the 352 conflicts and incidents and additional cards for these conflicts where the Navy engaged in more than one set of operations.

During the analysis of Navy operations in low intensity conflict some extreme cases (the more intensive and the non-deadly conflicts and the minor naval incidents) were deleted to reduce the heterogeneity of the population. Some of the variables and methods of measurement were also

revised. The revised version of the naval data is designated data deck #3-1 and contains 336 cards. (See Section V below for the difference in format). It includes data on only the 309 conflicts described in Part A, (as opposed to the 352 conflicts in data deck #3). Of the 309 conflicts, there were 59 conflicts in which the Navy undertook 85 operations.

Some transformations of the card #3 data are on card #3-2.

Unless otherwise indicated the naval operation data were derived from records in the Navy History Division, Office of the Chief of Navy Operations. The data is classified SECRET NOFORN. For sources see the Navy documents listed in Appendix E, pp. E-27 through E-30.

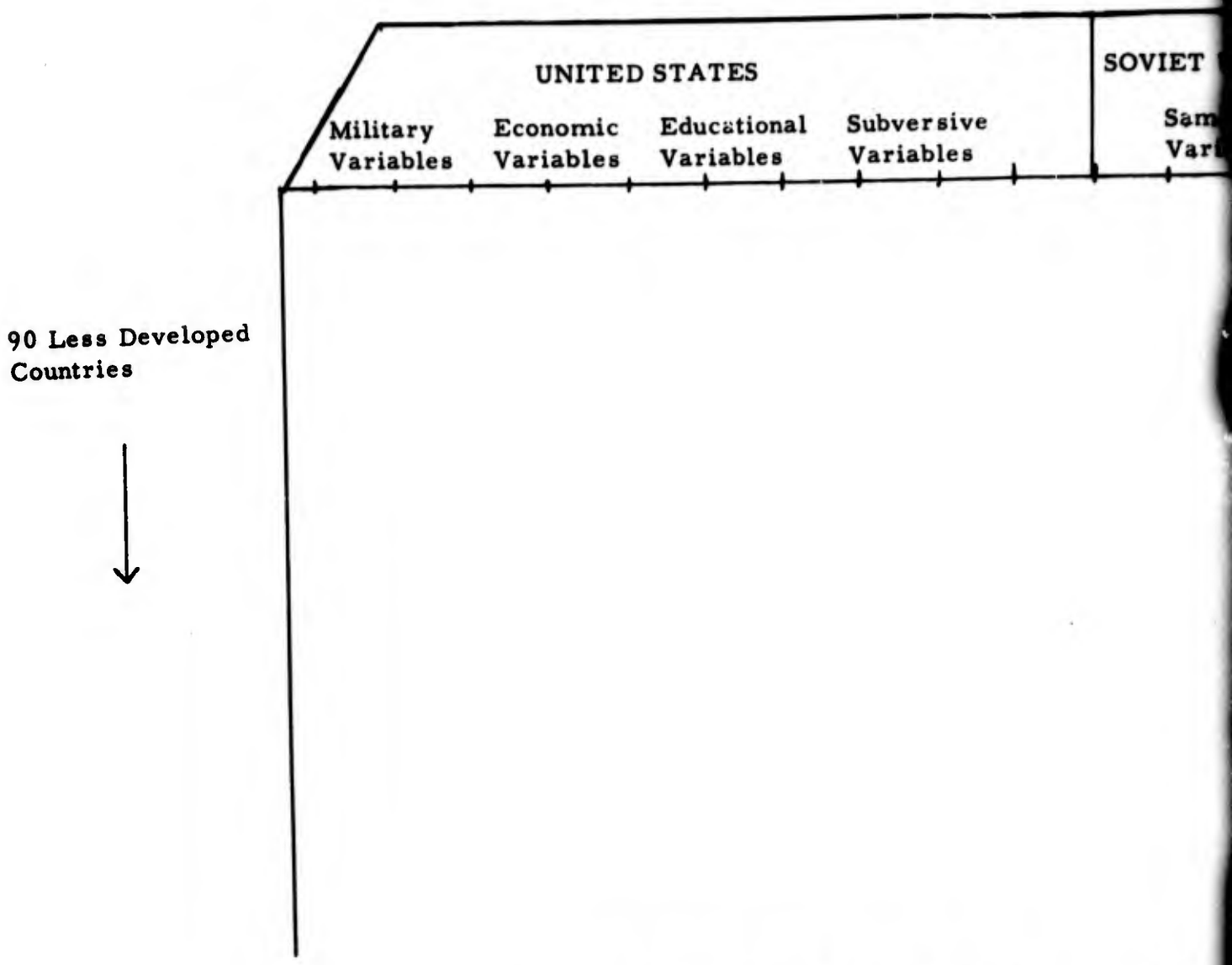
C. Foreign Influence Data

A major task in the study was an investigation of foreign influence in "less developed countries" (LDC's). This was performed by analysis of data matrices in which the observations were 90 LDC's (listed in Table A-3, Page A-97) and the variables were measures of presumed influence by four major actors (the United States, Soviet Union, Communist China, and the East European states aggregated) who interacted with the LDC's.

Twenty-five variables measuring this involvement were chosen and include measures of military, economic, political, educational influence and support to insurgents in the 90 countries. Collectively, the types of actor involvement chosen for this study are thought to be representative of the major dimensions of major actor interaction with LDC's. Data were collected for each indicator of each major actor's involvement in each LDC for the years 1959, 1961, 1963 and 1965. Figure A-1 illustrates the data matrices.

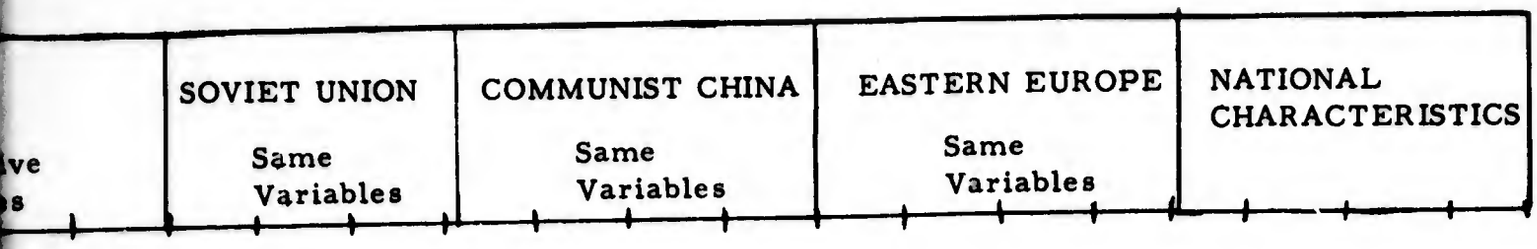
These data are derived from several sources which are listed in Section IV by variable. If one source or all the sources listed for a particular attribute are classified, all or part of the data for that variable are classified.

The data are recorded on data cards 7 and 8. Card 7 contains data which mainly describes certain characteristics of the less developed countries; e.g., size of Communist Party, population of state, and years in the U.N. Therefore, deck 7 has 4 sub-decks which contain this information for 1959, 1961, 1963, and 1965. Deck 8 contains most of the major



Data on the United States' military, economic, c
ment in each of the 90 LDC's were collected for
for the Soviet Union, Communist China and East
This scheme was then repeated for each major a
1961, 1963, and 1965.

Figure A-1 Data Matrices for Major Actor Foreign I



ilitary, economic, cultural and subversive involve-
s were collected for 1959. Data were then collected
unist China and Eastern Europe in the same manner.
ted for each major actor for three more years:

ajor Actor Foreign Influence and National Characteristics

2

actor interaction data with the LDC's; e.g., economic aid, military aid, and cultural data. Therefore, deck 8 has 16 sub-decks which contain this data for each actor for each year; i.e., United States - 1959, United States - 1961, United States - 1963, United States - 1965, Soviet Union - 1959, Soviet Union - 1961, Soviet Union - 1963, Soviet Union - 1965, Communist China - 1959, Communist China - 1961, Communist China - 1963, Communist China - 1965, Eastern Europe - 1959, Eastern Europe - 1961, Eastern Europe - 1963, Eastern Europe - 1965. (See Section V [Card Formats] for details).

The designators "state" and "country" are used interchangeably in this report. They are both defined here as a political entity occupying a definite territory: both dependencies as well as independent states are included under this definition.

D. Data Collection

It became apparent early in the efforts to acquire data that information was not readily available for all variables considered important. As with all data collections, a point is reached when additional time spent in reviewing records yields marginal gains. Not all conflicts involved significant political violence; those which were either insignificant or non-violent were included because some anticipatory action was taken by the Navy. In spite of our attempts to include all significant* conflicts, some may have been omitted. Similarly, despite a very careful search of Navy records, some operations may have been missed.

E. Variable Selection

The definitions included in Sections II, III and IV specify each variable and give the sources of the information. No single variable by itself is intended to describe the process of, or to explain low-level conflict or foreign involvement. The selection of variables was based upon their relevance to the assigned tasks in the study and their theoretical relevance. It was not possible to achieve complete mutual exclusiveness between all variables or to remove all ambiguity in coding all cases.

Because this was an attempt to determine what regularities exist in the phenomena of political violence, naval operations and foreign influence,

* Significant is defined as the use or threatened use of organized military or para-military force within and/or between states.

it was necessary to use a number of generalized definitions and to relax measurement precision to nominal or ordinal scales.

A number of other considerations also influenced the selection of variables and the methods of measurement. Resources for data coding and acquisition were limited. The availability of data in the most desirable form and inability to gain access to some sources imposed some limits. These influences have no doubt had some effect on both the accuracy and composition of the coded data on which the analysis is based. However, factor analysis is a method which is relatively insensitive to coding error, and the major results should not be distorted by coding problems.

F. Data Coding and Error. Much of the data employed is of a cross-national nature and subject to systematic or random error. Two error variables were introduced for the purpose of assessing the effects of random and systematic error. A four digit random number, and an ordinal 9 point scale of press censorship were included in the C' deck (Cards 7 and 8, Major Actor Influence in Less Developed Countries). The press freedom error variable is particularly appropriate for this study because most of the data on foreign influence and national attributes in the C' deck are based on national reporting. Rummel has shown that about 75% of the variation in error in cross-national economic-welfare data is related to degree of totalitarianism.*

G. Blank Spaces, Zeroes and Decimal Points

Blank spaces found in the columns of conflict or naval operations data cards indicate missing data. Blank spaces found in the columns of the major actor influence data indicates one of the following three situations: (1) data was not obtained; or (2) that a country did not exist as an identifiable political entity in a particular year (e.g., Burundi did not exist until 1962 and is therefore blank in 1959 and 1961); or (3) a particular country was not independent in a certain year. As pointed out under

* For an analysis of the effects of the two types of error in the bivariate and multivariate cases and an empirical derivation of patterns of error, see R.J. Rummel, "Dimensions of Error in Cross-National Data," (Yale University, Dimensionality of Nations Project, 21 December 1964, Mimeo).

the definitions of certain influence variables (see pp. A-41), dependencies do not usually receive economic or military aid from other than their colonial rulers. Therefore, these columns are left blank for the countries for the years in which they were dependencies. Instead of according zeroes because aid did not exist, it was better to leave the space blank because these dependencies were really ineligible to receive military and economic aid, as that aid is defined herein.

Zeroes always indicate zero values.

No decimal points are punched on the data cards. Values other than the integers themselves are designated on the format sheets.

II CONFLICT VARIABLES, DEFINITIONS AND SCALING

Card #1

1. Start Date The year, month and day on which organized force was first used in a conflict. (On Data Card #1)

Card #2

Nation and Force Involvement. The participation of certain important powers or groups of states have been coded on the following 7 point ordinal scale indicating their level of involvement in a conflict.

1. United States

   0 Uninvolved
   1 Propaganda and generalized threats only
   2 Planning or advisory participation
   3 Material (including financial) support
   4 Passive military support (e.g., overflight rights, sanctuary), explicit threats, or shows of force
   5 Unofficial, unconventional, unsubstantiated or covert military involvement or support
   6 Limited combatant force commitment or strategic military involvement or support (e.g., blockade, patrol, surveillance)
   7 Combat operations or large scale employment of combatant force in conflict situation

2. Soviet Union (same coding as for United States)

3. China (same coding as for United States)

4. Other Communist Nations (same coding as for United States)

5. United Nations

   0 Uninvolved
   1 Issue brought before the U.N. with no subsequent debate or action
   2 Issue debated in U.N. with no subsequent action
   3 U.N. issues some statement or opinion on situation
   4 U.N. requests some action of involved parties (e.g., cease fire, withdrawal)

5 U.N. authorizes on site investigation
6 U.N. observation of settlement (e.g., Suez War, Indochina)
7 U.N. military action (e.g., Korea, Congo).

6. Nations Involved. The total number of involved nations (only presence and not level of involvement is recorded).

The information for this variable is derived from INS Study 14 data (columns 57, 59-60, 77, and 79-80), OSD/ISA Conflict Data Collection, and Deadline Data on World Affairs.

Level of Military Activity. Another possible indicator of the size of a conflict is the gross level of sea, ground, and air operations in the conflict. The level of operations for sea, ground, and air forces is coded according to the following ordinal scales:

7. Sea Operations

1 No significant activity
2 Show of force
3 Blockade
4 Strategic or tactical attack

8. Ground Operations

1 No significant activity
2 Show of force
3 Terrorism, demonstrations
4 Physical attacks on persons or property resulting in either destruction or seizure

9. Air Operations

1 No significant activity
2 Show of force
3 Reconnaissance or air defense
4 Limited through full-range strategic attack

Data sources include INS Study 14 data (columns 49-57 and 69-71) US Navy Archives, the OSD/ISA Conflict Data Collection, and Deadline Data on World Affairs.

10. Duration The duration of conflicts is measured by the total number of days. In certain cases, the information is unambiguous and the exact number of days is easily identified, as in the case of a coup d'etat. In other cases where violence is sporadic and/or of long duration, the exact duration of a conflict is not always clear. We have relied on our information sources to give both the beginning and the ending dates of the conflicts. Withdrawal of forces or agreements to end conflicts have normally been used to identify the conclusion of a conflict. Conflicts which were not terminated by 31 December 1965, have been arbitrarily given that date of termination. Information sources include INS Study 14 data, columns 12-17, OSD/ISA Conflict Data Collection, and Deadline Data on World Affairs.

Fatalities. Damage in conflict should bear directly on the dimensions of low-level warfare. The conflict variables relating to fatalities selected for analysis include:

11. An interval measurement of the total absolute number of fatalities for all parties to the conflict, including civilians.

12. A ratio of the total number of fatalities (11 above) divided by the conflict's duration (10 above).

13. A ratio of the number of fatalities related to a conflict divided by the population (in millions) of the country where the conflict took place. In cases where foreign troops are present, these troops are counted as part of the population total. In a border conflict, the population most endangered by a conflict is considered the population. This may include one or more nations. Data on the number of deaths was drawn from the OSD/ISA Conflict Data Collection when available and from INS Study 14.

Conflict Typologies. Typologies of conflict can be important for describing both the general nature and the apparent level of disturbance. The following list identifies both international and internal conflict types. Conflicts which have manifested both internal and international aspects, have been coded in more than a single category. Each category is a variable which is coded on a nominal scale: 1 indicates that the conflict is described by the category, 0 indicates that it isn't.

Information concerning the typing of conflicts is from INS Study 14 data (columns 30 and 31), US Navy Archives, and the OSD/ISA Conflict Data Collection.

International Conflict. Situations that involve at least two nation states in some type of military engagement or confrontation as defined below.

14. Interstate Combat. Military engagements between nations which are more than a single military clash. This would include border conflicts and engagements such as the Korean War.

15. Incident. A single military engagement of short duration between two nations. For example, the shooting down of an American U-2 flight over the Soviet Union and a single border raid between Israel and Jordan would be incidents.

16. Blockade. The use of military sanctions (threat or use of force) to control passage of personnel or material goods between the blockaded nation and other nations.

17. Show of Force. A threatening military movement or demonstration by one nation towards another where no actual engagement of forces takes place.

Internal Conflict. Disorder that takes place within the national borders of a state with no direct involvement of other nations.

18. Overt Civil War. Prolonged (at least one week) combat with the use of organized military forces, de facto control of territory by each involved party, and usually involving conventional military weapons and tactics in a war of mobility.

19. Guerrilla War. Prolonged terrorism, sabotage, psychological operations, and the organized use of unconventional military forces and tactics.

20. Coup d'Etat. An organized direct action against the established political officeholders or leaders, normally of short duration with intention of replacing the principal leaders of a regime.

21. Military Revolt or Mutiny. A military uprising against the established authority other than a coup d'etat.

22. Insurrection. An organized, non-military uprising against the established authority other than a coup d'etat.

23. Civil Disorder. A spontaneous non-military uprising demonstrating dissatisfaction towards an authority, such as a riot.

Conflict Issue. Conflict issues which are general in nature and of particular interest to US foreign policy.

24. Colonial Conflict. A military combat between a colony and the metropolitan nation before independence.

25. East - West Conflict. A military confrontation between the United States and/or its allies, and the Soviet Union and/or Communist China and their allies.

Location. Intensities and types of conflicts may have significant relationships to geographic locations. The five location variables chosen are indicated by a nominal measurement: 1 indicates the conflict occurred in that particular geographic area, 0 indicates it did not. The world locations selected for analysis are:

26. Latin America (Central and South America)

27. Europe (Eastern and Western Europe including Greece, Turkey and European USSR)

28. Middle East and North Africa (Syria, Lebanon, Israel, Jordan, UAR, Saudi Arabia, Yemen, Aden, Omon, Kuwait, Iraq, Spanish Sahara, Iran, Morrocco, Algeria, Tunisia, Libya, Sudan, Ethiopia, and Somalia)

29. Asia (Burma, Afghanistan, Pakistan, India, Tibet, China, Mongolia, Taiwan, Japan, Korea, and Asian USSR)

30. Southeast Asia (Thailand, Laos, North and South Vietnam, Cambodia, Indonesia, Malaysia, and the Philippines)

31. Sub-Saharan Africa (the Southeast Atlantic from Mauritania through South Africa across Mali, Niger, Chad, Central African Republic, Uganda, Kenya south through Mozambique)

32. Disruptive Effects. The disruption of normal internal activity such as manufacturing, transportation, communication, and security may be related to conflict types. An ordinal measurement of three levels of internal disruption is employed to distinguish among (1) no major disruption (2) major disruption of communication, transportation, food supply, etc., in a localized area, and (3) major widespread disruption of normal activity. This information is found in INS Study 14 data (column 21) and the OSD/ISA Conflict Data Collection.

Outcome. The outcome of each conflict has been coded according to its estimated effect on US interests. Although some judgements are to a degree arbitrary, the measure may indicate if there is any general association between outcome and conflict type. The coding was nominal for each outcome possibility: 1 indicates yes, 0 indicates no.

33. Mostly Favorable to US Interest. Favorable outcomes were those in which the US was concerned and did not have a major adverse affect on US interests at the time.

34. Mostly Unfavorable to US Interest. Unfavorable outcomes were those in which the US had an interest and the US lost influence or a friendly government was overthrown.

35. Terminated by Military Victory. A conflict in which one party clearly gains its objective by use of military force at the expense of the opposing party or parties.

36. Conclusively Terminated. A conflict which is terminated by some resolution of the basic issued involved and does not continue to exist as a recurrent or potential conflict.

III. NAVAL OPERATION VARIABLES, DEFINITIONS AND SCALING

The variables and methods of measurement presented here describe the naval data recorded on data card #3-1. Fifty variables are used to describe the naval operations and environment. The earlier version used in Phase One (data card #3), does not contain the naval operations for as many variables as #3-1, and used slightly different methods of measurement. (See Sections IV and V for differences).

Naval Roles

Because specific operations by naval forces such as an evacuation, show of force, or surveillance frequently take place in support of a wide range of US objectives as well as within a variety of political, strategic, and local tactical situations, it is useful to indicate these differences in the purpose of employing naval forces by indicating different roles of naval forces in which the specific operations are carried out. Two approaches to defining these roles of naval forces were employed.

1, 2 Preventive/Reactive.

Although the distinction of preventive-reactive is made extremely difficult by the fact that nearly every action taken by the US has some antecedent to which the action may be a reaction, the operations of naval forces have been coded either as mostly preventive or mostly reactive with respect to the outbreak of combat. For example, the surveillance and show of force by the Sixth Fleet during the 1964 Cyprus fighting were preventive in terms of the potential interstate combat between Greece and Turkey. It should be noted that the preventive role assigned here is not the concept of long-term environmental change aimed at "immunizing" societies succeptible to insurgency. The two variables are each measured on a nominal scale: 1 indicates yes, 0 indicates no.

Stabilization/Deterrence/Conflict Control.

For low-level conflict the roles of naval forces may be classified as stabilization of conflict situations; deterrence of overt hostilities and/or outside military intervention in open hostilities; and control of these conflicts which involve overt hostilities to

limit their destructiveness, the number of parties involved, and to facilitate their resolution. The three variables are each measured on a nominal scale: 1 indicates yes, 0 indicates no.

3. Stabilization. The use of military forces in areas of unrest to promote the establishment or maintenance of a political environment in which needed changes may take place through non-violent means. For example, the presence of the Sixth Fleet interposed between Cyprus and Turkey in 1964 had a stabilizing effect on the Cyprus crisis by making the Turkish intervention option include confronting the US force. Surveillance operations to detect and prevent the infiltration of men and arms from Cuba, to Haiti, the Dominican Republic, etc., contributed to the stabilization of the Caribbean area.

4. Deterrence. The threatened use of military forces in relation to potential hostilities to discourage the employment of force to resolve conflicts; or during hostilities to discourage escalation; or in relation to local hostilities to discourage outside parties from intervening in these hostilities out of fear of the consequences. For example, escorting Chinese Nationalist supply convoys to Quemoy in 1958 contributed to the deterrence of Chinese Communist efforts to seize the off-shore islands or to attack the Nationalists' sea lift.

5. Conflict Control. The use of military forces in hostilities to influence the conduct and termination of fighting. For example, the 1965 Dominican Republic operations represent a case of conflict control. These operations are sometimes called interposition or intervention.

6. Perception of Threat to US Interests

The following scale is an ordinal measurement (1-10) of why the US decided to take action, expressed in terms of the nature of the perceived threat to US interests:

Incident. (1)

A sudden, possibly accidental, usually brief, and occasionally violent interaction between US military forces or citizens and another state's military forces or citizens. For example, the attack by Cuban jets on a US patrol aircraft north of Cuba is a case of an incident.

"Cold War" Competition. (2)

The psychological conduct of non-violent political, economic, technological, cultural, and military activity to gain support for US policies and programs while seeking to degrade and undermine those of the Communist states. For example, the good-will cruises of naval forces and their "People to People" program activities represent operations in the "cold war" competition.

Revolutionary Movement. (3)

An organized internal movement seeking to force fundamental changes in political organization, in government, constitution, and social structure by the use, or threatened use of force against the incumbent government. For example, the 1957 Jordan Crisis was caused by a threatened overthrow of King Hussein.

Subversion. (4)

Activity planned or supported by a party or parties outside a state designed to undermine the military, economic, psychological, moral, or political strength of a regime by influencing, dominating, or displacing individuals or groups who are so placed so as to affect the decisions and actions of the regime. Example: Externally-supported subversive activity has been employed in the efforts to establish a Communist regime in Guyana.

Covert Threat to Non-Aligned Party. (5)

Activity of a subversive or paramilitary nature directed against a state having no alignment with the US. For example, the Congolese Civil War and activity of other African states such as Uganda in support of rebels represents a covert threat to a non-aligned state.

Covert Threat to US Ally. (6)

Activity of a subversive or paramilitary nature directed against a state aligned with the US. For example, the insurgent activity in northeast Thailand represents such a threat.

Overt Threat to Non-Aligned Party. (7)

Open use of military force directed at a state having no alignment with the US. For example, the Chinese Communist attack along the Indian border in 1962 was an overt threat to India.

Overt Threat to US Ally. (8)

Open use of military force directed at a state aligned with the US. The 1958 Quemoy-Matsu crisis involved such an overt threat.

Conflict Between US Allies. (9)

Activity of a subversive, paramilitary, or open nature involving conflict between two parties, both aligned with the US. For example, the recurrent Cyprus crisis included a threat of war between two US allies, Greece and Turkey.

General War. (10)

A conflictual situation in which national alignments and commitments are such that a total resource of the major world powers are employed placing the national survival of one or more parties in jeopardy. For example, during the 1962 Cuban missile crisis the possibility of general war was perceived by the US and was conveyed to the Soviet Union.

Naval Operations Conducted

The type of operation carried out by the US Navy was coded according to the following categories. The variables were each measured on a nominal scale: 1 indicates yes, 0 indicates no.

7. Evacuation

The use of military forces to remove personnel and material endangered by potential or actual hostilities from a conflict area. For example, the evacuation of US nationals from Nicaro, Cuba during the Cuban civil war was such an operation.

8. Anticipatory Redeployment

Redeployment of naval units in anticipation of possible contingencies in which their presence in an area is not clearly demonstrated as in show of force.

9. Show of Force

The use of military forces to serve notice of capability to enforce a specified course of action (including inaction) upon belligerents or potential belligerents by means of a symbolic military demonstration (including mere presence of military forces). For example, the deployment of the Seventh Fleet to the vicinity of Formosa and air activity designed to be visible to the mainland served notice that any attempt to "liberate" the Nationalist held islands would have to contend with the Seventh Fleet.

10. Intervention

The use of third party military forces to participate in armed conflict between opposing factions by joining the side of one of the contenders either by threatening its adversary (also a show of force) or by combat operations supporting the favored party. The US landings in Lebanon in 1958 in support of the Chamoun Government represented intervention as defined here.

11. Interposition

The use of naval forces to act as a buffer force between two opposing factions. As with intervention, interposition operations may also involve a show of force. For example, the redeployment of the Sixth Fleet to the Eastern Mediterranean when Turkey made moves toward intervening in the Cyprus conflict was a case of interposition as well as a show of force.

12. Surveillance

The use of naval units to detect and, if ordered, prevent specified actions from taking place in a specified area. In its preventive sense a surveillance operation could also be considered to be either intervention or interposition. For example, the sea and air patrol activity in the Windward Passage between Cuba and Hispaniola to counter Cuban infiltration into Haiti or the Dominican Republic since early in 1960 is representative of surveillance operations.

13. Military Assistance

The use of US military forces to provide advice, training, and logistic support for friendly military forces. For example, the operations of the navy section of the US Military Advisory and Assistance Group in Vietnam since 1954 would be considered military assistance as defined here.

14. Combat

The use of military forces employing their conventional combat capabilities in any of the previously defined operations which are characterized by the use of violence by one or more parties. For example, the 1964 Tonkin Gulf incident involved naval units on a surveillance operation which turned into combat when they were challenged by North Vietnamese torpedo boats.

15. Readiness Measures

When the US Navy has been involved in various conflict situations, several levels of readiness within the naval establishment have been assumed which are briefly noted according to the following ordinal scale (1-5):

Theater Alert Only. (1)

As in the case of the August 1964 Haiti disorders.

Intratheater Redeployment. (2)

As in the case of the 1957 Jordan crisis.

Intertheater Redeployment. (3)

As in the case of the 1960 Congo crisis.

General Alert with Intratheater Redeployment. (4)

As in the case of the 1959 Berlin Crisis.

General Alert with Intertheater Redeployment. (5)

As in the case of the 1956 Suez Crisis.

Potential Opposition Variables

When the US Navy has been employed in a conflict or crisis situation, the potential opposition to the presence of the US Navy and its operations has ranged from nothing at all to local tactical superiority. This capacity of potentially hostile forces to damage and interfere with the US Navy is rated on an ordinal scale (1-4) as follows:

Scale

No Threat. (1)

As in the case of submarines during the Cuban civil war.

Minor Acts of Possible Violence. (2)

As in the case of Castro's irregular ground forces during the Cuban civil war.

Threat, Not a Challenge, to the US Navy in the Area. (3)

As in the case of Soviet submarines during the landings in Lebanon.

Threat Capable of Challenging Local US Navy Forces. (4)

As in the case of shore batteries and the Chinese conventional ground force strength during the Quemoy-Matsu crisis.

Threat Level of Potential Opposition by Type of Threat

The level of threat capability assigned for adversaries or potential adversaries follows, using the above ordinal scale:

16. Terrorism

Terrorism is characterized by clandestine acts of violence usually planned to intimidate and in which, for this analysis, any damage done to US naval personnel or units is not the result of their being the direct objects of the violence.

17. Sabotage

Sabotage is characterized by clandestine acts of violence against property in which, for this analysis, any harm done to US naval forces is the result of actions planned against these forces to reduce their combat effectiveness.

18. Unconventional Ground Forces

Lightly armed irregular forces which may carry out guerrilla operations to oppose the mission landing forces or other contingents of US naval forces which might be in the area of conflict.

19. Non-Nuclear Regular Ground Forces

Conventionally armed regular ground troops which might oppose US landing forces and naval units with a variety of landbased firepower including armor, artillery, and missiles.

20. Nuclear Backed Ground Forces

Regular ground forces which might oppose US landing forces and naval units with tactical nuclear weapons delivered by either missiles or aircraft. In addition, also included are those cases in which strategic nuclear strikes are threatened in a confrontation between the US and the Soviet Union which should be interpreted as a threat capable of challenging local US Navy forces.

21. Aircraft

Air forces which might oppose US naval forces at sea and landing forces.

22. Anti-Aircraft Defenses

Gun and missile defenses which might oppose overflights, reconnaissance, or combat missions of US naval aircraft.

23. Small Craft

Torpedo boats, gun boats, missile-armed motor boats, patrol craft, mine craft, landing craft, and other armed small craft or gun runners which might engage with US naval forces in the conflict area.

24. Medium Combatants

Escorts, destroyers, and armed amphibious or auxiliary vessels which might become engaged with US naval forces in the conflict area.

25. Large Combatants

Naval combatant vessels other than amphibious types of more than 5000 tons displacement which might become engaged with US naval forces in the conflict area.

26. Submarines

Submarine forces of the belligerents or other interested parties deployed in the operating areas of US naval forces involved in the conflict.

27. Mine Warfare

The ability to carry out a mining campaign on the high seas in operating areas of US naval forces, restricted international and territorial waters, and inland waterways to impede the operations and transit of US naval and maritime forces.

28. Access to Sea

An interval measure of the distance in miles from the approximate center of conflict/crisis activity to the port landing beach, or naval operating area from which naval forces could or would gain access to the conflict. Operations on the high seas exclusively are coded "000" and no access is coded "999".

29. Duration

An interval measure of the duration of naval operations in days from the first activity involving US naval forces or the ordering of US naval forces to the conflict area until the resumption of normal scheduled operations.

Naval Force Type Employed

A nominal measurement of the naval force type employed: 1 indicates yes, 0 indicates no. Each force type constitutes a variable.

30. Attack Carrier Force

31. Surface Action Force

32. Anti-submarine Force

33. Aircraft Patrol Force

34. Surface Patrol Force

35. Amphibious and Landing Force

36. Service Force

37. Mine Force

38. Submarine Force

Conflict Typologies

Typologies of conflict can be important for describing both the general nature and the apparent level of disturbance. The following list identifies both international and internal conflict types. Conflicts which have manifested both internal and international aspects, have been coded in more than one category.

Information concerning the typing of conflicts is from INS Study 14 data (columns 30 and 31), US Navy Archives, and the OSD/ISA Conflict Data Collection.

40. Overt Interstate Combat

Warfare waged between regular military forces of two or more states, not restricted solely to border clashes or incidents.

41. Border Clashes

Brief combat between regular military forces of two or more states without large-scale mobilization or redeployment of forces. No long standing occupation or territorial change takes place.

42. Incident

Unexpected single military engagement of short duration between regular or irregular military forces of two states. Participants may include civil ships, civil aircraft, or civilians belonging to the parties.

43. Covert Interstate Operations

Combat, espionage, subversion, sabotage, or escape performed by clandestine forces of one state on the territory, property, governmental structure, personnel, military or police forces of another state.

44. Interstate Crisis

A short, intense period of high tensions in which military threats are made and in which the resort to the use of force to resolve a conflict has a higher probability than during non-crisis.

45. Unilateral Negative Action Responses

Responses to a crisis or provocation, not military in nature, e.g., embargos, freezing of assets, expropriation, expulsion of diplomats or other aliens, withdrawal of diplomats.

46. Civil War

Overt military engagement between forces of an incumbent government and the forces of a party or coalition of parties seeking to overthrow the authority of the incumbent government in all or part of a sovereign nation state. The military operations are characterized by the seizure and holding by force of territory, however, operations by guerrilla units within territory nominally under the control of the adversary may be carried out by either party.

47. Guerrilla War

Organized irregular warfare by the para-military forces of a revolutionary party or group seeking to overthrow an incumbent government.

48. Revolutionary Coup

Short to moderate duration of low to moderate levels of fighting between forces of an incumbent government and forces of a party or coalition of parties seeking fundamental changes in the structure of a political authority and some changes in the social system of a sovereign nation state.

49. Reform Coup

Short duration of low levels of fighting between forces of an incumbent government and forces of a party or coalition of parties seeking moderate changes in the structure of political authority in a state.

50. Palace Revolution

Very brief fighting at very low levels of violence between forces of an incumbent government and forces of a party or a coalition of parties seeking to overthrow the government with virtually no changes in political or social structures of a state.

51. Domestic Turmoil

Acts of civil strife such as widespread or violent strikes, riots, terror, or assassinations which are politically motivated.

IV. MAJOR ACTOR (SOVIET UNION, COMMUNIST CHINA, EASTERN EUROPE, AND THE UNITED STATES INFLUENCE IN THE LESS DEVELOPED COUNTRIES) VARIABLES, DEFINITIONS AND SCALING

1,2 Training of Cadre

The instruction and training in the Actor (only Soviet and Communist Chinese data available) of nationals of a target state as subversives or insurgents, in order to develop a framework of a unit around which newly enlisted men would be formed. Insurgents were counted for a particular year if they were present in the Actor country for any part of that calendar year. Measurement is on a nominal scale, 1 indicating presence, 0 indicating absence.

The data are derived from: Political Indoctrination Programs in Communist Countries for Nationals from Less-Developed Countries of the Free World, (U), Intelligence Memorandum, CIA/RR EM No. 81, 65-17, June 1965 (SECRET): Department of State Airgrams (U) from the American Embassy in each country concerning politico-economic relations of that country with communist countries, issued semiannually (SECRET); and "Review of Insurgency in Latin America," Current Intelligence Weekly Summary, (U) No. 0301/65, 6 August 1965, (SECRET).

3,4,5* Support To Insurgents

Assistance to insurgent groups in the form of money, material, advisors or training from the Actor country. Such assistance is considered to span the year in which it is made. Measurement is on a nominal scale, 1 indicating presence, 0 indicating absence.

The data are derived from: Aid and Trade Activities of Communist Countries in the Less Developed Areas of the Free World, (U) (State and CIA Publication), (SECRET), Annual Reports 1959 through 1965; Conflict Analysis Significant Political Violence 1947-1966. (U) prepared for OSD/ISA, (SECRET) NR; Review of Insurgency in Latin America Current Intelligence Weekly Summary, (U) No. 0301/65, 6 August 1965 (SECRET); and Peiping's Gauge of the Revolutions in Africa, Department of State, Research Memorandum RFE-2, 13 January 1965.

* There is no variable 6.

Indigenous Communist Party

The nature of the indigenous Communist party is coded by identifying the legal status of the party if it exists, its orientation with respect to the Soviet Union or CPR, and its total strength.

Measurements:

7 Ordinal scale measurement of the status of the Communist party in a state per year. Differentiation is made between a party with legal status and the existence of an illegal party. 0 = no party, 1 = legal party, and 2 = illegal party. (This variable has no underlying scale because it mixes legality of the C. P. with its existence. In correlational or factor analyses, this variable should be disregarded. The data cards do, however, contain information of possible utility for other purposes.)

8, 9, 10, 11 Nominal scale measurement of the orientation of the Communist party in a state per year. Four variables are used to measure whether the Communist party is oriented towards the Soviet Union, oriented towards the CPR, involved in an open split, or maintaining a neutral position; 1 indicates yes, 0 indicates no.

12 Interval measurement of the total Communist party membership in a state per year.

The data are derived from: World Strength of the Communist Party Organization, Bureau of Intelligence and Research, State Department, annual reports 1959-1966.

13 Population

An interval measurement of the population of a country in a given year. The data are taken from the United Nations Statistical Yearbook.

14, 32 Years of Membership in the United Nations

Measured by two variables. The first variable is the last two digits of the date of admission of a country to the United Nations

(card 7). The second variable is the number of years of United Nations membership as of 1959, 1961, 1963, 1965 (card 8). Dependencies and non-members are accorded zeroes.

15 Degree of Freedom of Press

Expert's ranking of the degree of freedom of the press in 117 countries on a 9-point scale. The data are taken from "Freedom in the World's Press: A Fresh Appraisal with New Data," Raymond Nixon, Journalism Quarterly, Winter-1965.

This variable was added to the study in order to check for systematic error in the data.

Scale for Classifying Press Freedom

Index	
1	Free press system; no qualifications.
2	Free press system, but for shorter period or with less evidence of stability.
3	Free press system, but with even less evidence of stability and/or more tendency toward controls than 2.
4	Intermediate or mixed system, with tendencies appearing to favor free-press system at present time.
5	Intermediate or mixed system with no clear tendencies toward either more freedom or more control at present time.
6	Intermediate or mixed system, with tendencies appearing to favor controlled-press system at present time.
7	Controlled press system, but with even less rigid controls and/or more opportunity for debate within system than 8.
8	Controlled press system, but with less rigid controls and/or some opportunity for debate within system.
9	Controlled press system; no qualifications.

16 Regular Military Personnel of Target States Trained in the Actor Country

An interval measurement of the regular military personnel from a state instructed or disciplined in the Actor country. Military personnel are counted for a particular year if they were present in the

Actor country for any part of that calendar year. Because a dependency does not usually receive foreign military training (from other than its colonial ruler) no data were obtained for dependent countries for this variable.

The data are taken from Soviet and Chinese Communist Aid Activities in Africa, (U) Central Intelligence Agency, Office of Research and Reports, 64-17, June 1964. (SECRET); and Foreign Military Trainees, (U), Directorate of Military Assistance, OSD/ISA, (CONFIDENTIAL).

17 Actor Military Personnel in State

An interval measurement of actor military personnel in a state. Military personnel are counted for a particular year if they were present in the state for any part of that calendar year. Because a dependency does not usually receive foreign military aid (from other than its colonial ruler) no data were obtained for dependent countries for this variable.

The data are derived from Soviet and Chinese Communist Aid Activities in Africa, (U) Central Intelligence Agency, Office of Research and Reports, 64-17, June 1964 (SECRET), and Aid and Trade Activities of Communist Countries in the Less Developed Areas of the Free World (U) (SECRET), (A State and CIA Publication) Annual Reports 1959 through 1965; and files and records of OSD/ISA, Directorate of Military Assistance, (CONFIDENTIAL).

18 Actor Civil Technicians in a State

An interval measurement of actor personnel assisting in a technical capacity in the civil development of a state. A technician is counted for a particular year if he were present in the state for any part of that calendar year. In cases where data extends over a period of more than one year the number of technicians are divided equally per year of that period. Persons engaged solely in commercial or military activities are excluded. Because a dependency does not usually receive technical aid (from other than its colonial ruler), dependent countries are not included under this variable.

The data are derived from: Soviet and Chinese Communist Aid Activities in Africa, (U) Central Intelligence Agency, Office of Research and Reports, 64-17, June 1964. (SECRET); Aid and Trade Activities of Communist Countries in the Less Developed Areas of the Free World, (U) (SECRET) Annual Reports 1956 through 1965; and Operations Report, Statistics and Reports Division, Office of Program Coordination, Agency for International Development, 1959, 1961, 1963 and 1965.

19 Military Grants

An interval measurement in tens of thousands of US dollars of military assistance grants in the form of money, material or supplies from the Actor country to the government of a state. A grant is considered to span the year in which it is made. Because a dependency does not usually receive foreign military aid (from other than its colonial ruler), no data were obtained for dependent countries for this variable.

When military aid was listed as existing but only designated as being less than $50,000, an arbitrary figure of $10,000 was recorded.

The data are derived from U.S. Overseas Loans and Grants, Obligations and Loan Authorizations July 1, 1945 - June 30, 1966, Statistics and Reports Division, Office of Program Coordination, Agency for International Development, March 17, 1967; and Aid and Trade Activities of Communist Countries in the Less Developed Areas of the Free World (U) (SECRET), (A State and CIA publication) Annual Report, 1959 through 1965.

20 Civil Technicians Trained in the Actor Country

An interval measurement of civil personnel from a state receiving technical training in the Actor country. A technician is counted for a particular year if he were present in the Actor country for any part of that calendar year. In cases where the data extended over a period of more than one year the number of technicians are divided equally per year of that period. Some of the sources round numbers of technicians to the nearest five, others do not. Persons engaged solely in commercial or military activities are excluded. Because a dependency does not usually received technical aid (from other than its colonial ruler) no data were obtained for dependent countries for this variable.

The data are taken from: Aid and Trade Activities of Communist Countries in the Less Developed Areas of the Free World, (U) Reports 1959 through 1965 (SECRET) (A State and CIA Publication); Communist Propaganda Around the World, Apparatus and Activities-1961, United States Information Agency; Soviet and Chinese Communist Aid Activities in Africa, (U) Economic Intelligence Memorandum, (SECRET), Central Intelligence Agency, Office of Research and Reports, 64-17, June 1964; and Operations Report, AID, 1959, 1961, 1963, 1965.

Trade

Exchange of goods and services in the transaction of commerce between countries. Four variables measure imports and exports including transportation and insurance costs.

When trade was listed as existing but only designated as "less than $1,000", a nominal sum of $1,000 was recorded.

21 Ratio: a state's imports from the Actor country divided by the total imports of the state per year.

22 Ratio: a state's exports to the Actor country divided by total exports of the state per year.

30 Amount of a states imports from the Actor country in thousands of US dollars.

31 Amount of a states exports from the Actor country in thousands of US dollars.

The data are derived from: Value Series, Free World Exports and Imports, International Trade Analysis Division, Bureau of International Commerce, United States Department of Commerce; Battle Act Reports, General Foreign Policy Series 210, Department of State; United Nations International Trade Statistics Yearbook; and Direction of International Trade, Joint Publication - United Nations International Monetary Fund, International Bank for Reconstruction and Development.

23 Actor News Services in State

The establishment of an Actor teleprinter facility or the existence of a resident correspondent in a State for the purpose of distributing or collecting news in that state. Measurement is on a nominal scale, 1 indicating presence, 0 indicating absence.

The data are derived from: Communist Propaganda Around the World, 1961. United States Information Agency, 1962; Communist Propaganda Activities in the Near East and South Asia 1963, R-1612-64, October 20, 1964, United States Information Agency; Communist Propaganda Activities Africa-1962, United States Information Agency, R-55-63 (AA), March 29, 1963; and Communist Propaganda Activities in Africa, January 1963 - June 1964, R-186-64, November 1964, United States Information Agency.

24 Diplomatic Recognition of the Major Actor by a Country

The official statement of a state of the existence of diplomatic relations with the Actor country. Diplomatic relations exist for a particular calendar year if relations were established at any point in the year. Diplomatic relations are not considered as existing for a particular calendar year if relations were broken at any point during the year. Since dependent countries do not establish diplomatic relations, dependent countries are not included under this variable. Measurement is on a nominal scale, 1 indicating presence, 0 indicating absence.

The data are derived from: Europa Year Book Volumes I and II, 1959, 1961, 1963 and 1965; United States Foreign Service List; and Research Memorandum RAR-33, Department of State, Bureau of Intelligence and Research, July 16, 1963.

25 Contiguous Border

A nominal measurement of the existence of a common border between a state and the Actor country, 1 indicating presence, 0 indicating absence.

26 Distance Between State and Actor

An ordinal measurement (0-9) of the air distance between the capitals of the state and the Actor.

Measurement:

0 = 0-999 miles

1 = 1,000 - 1,999 miles

2 = 2,000 - 2,999 miles

3 = 3,000 - 3,999 miles

4 = 4,000 - 4,999 miles

5 = 5,000 - 5,999 miles

6 = 6,000 - 6,999 miles

7 = 7,000 - 7,999 miles

8 = 8,000 - 8,999 miles

9 = 9,000 or more miles

27, 28 Economic Aid

An interval measurement of the dollar amount of loans and grants for economic purposes made by an Actor to a state. Measurement is in tens of thousands of US dollars. A credit agreement or grant is considered to span the year in which it is made. One economic aid variable is aid extended and is indicated by Actor declaration of intent to provide credit or grant to a state. Another variable is percent of that aid actually withdrawn or used by a state (data available for 1965 only). Because a dependency does not usually receive foreign economic aid (from other than its colonial ruler), no data were obtained for dependent countries for this variable.

In a few cases, United States aid extended has a minus sign. The sign indicates deobligations in excess of new obligations of that year.

The data are taken from U.S. Department of State, Director of Intelligence and Research, Research Memorandum, RSB, June 17, 1966; Aid and Trade Activities of Communist China in Less Developed Countries of the Free World, 1959, 1961, 1963, and 1965, (U) CIA/RR, (SECRET) 1960, 1962, 1964, and 1966; Sino-Soviet Bloc Postwar Economic Activities in Underdeveloped Areas: Economic Intelligence Report (U) February 1960, (SECRET) EIC-R14-S8; Sino-Soviet Bloc Postwar Economic Activities to Underdeveloped Areas: Economic Intelligence Report (U) February 1962, (SECRET) EIC-R14-S12; US Overseas Loans and Grants, Obligations and Loan Authorizations July 1, 1945 - June 30, 1966, Statistics and Reports Division, Office of Program Coordination, Agency for International Development, March 17, 1967; and Deadline Data.

29 Students Trained in Actor Country

A student is defined as any person from a state receiving all or part of their academic training in the Actor country. An interval scale is used. A student is counted for a particular year if he were present in the Actor country for any part of that calendar year.

The data are taken from: Soviet and Chinese Communist Aid Activities in Africa, (U) Central Intelligence Agency, Office of Research and Reports, 64-17, June 1964. (SECRET): Aid and Trade Activities of Communist Countries in the Less Developed Areas of the Free World, (U) (SECRET) (A State and CIA Publication) Annual Reports 1959 through 1965; and Open Doors, 1959, 1961, 1963, 1965, Report on the International Exchange Institute of International Education.

33 Random Number

Four digit random number. The variable is included for every major actor for every year of the study.

The random number variable is used to assess random error in the bivariate case, e.g., the degree to which Soviet trade is correlated with a random distribution.

V. DATA CARD FORMATS

This section lists the card formats of the 8 data cards used in this study. Included for each card are: the name of each variable, its scale of measurement, the number of digits required to code each variable, and the column number on the card where the data for each variable is recorded. In addition, the six character and eight character computer print out names used for each variable are listed along with the analyses in which the variable was used and the identification number given to the variable in those analyses.

DATA CARD #1 (CONFLI

Variable	Measurement	No. of Digits	Column No.	Compu 6 Cha
Conflict I. D. #:	(See Table A-1)	3	1-3	
Blank Space	N/A	2	4-5	
Conflict Data Card #:	"1"	1	6	
Blank Space	N/A	1	7	
1. Start Date:	Year-Month-Day	6	8-13	START
Blank Space	N/A	1	14	
End Date:	Year-Month-Day	6	15-20	
Blank Space	N/A	1	21	
Conflict Name:	Verbal Identification	51	22-72	
Blank Space	N/A	5	73-77	
Data Source:	1-7 in 1st, 2nd, 3rd order of importance	3	78-80	
	1st	1	78	
	2nd	1	79	
	3rd	1	80	

(1) INS Study 14 data
(2) CSD/ISA Conflict Data Collection
(3) State Department Data
(4) Deadline Data on World Affairs
(5) Statesman's Yearbook, 1964-65
(6) Europa Yearbook, 1964-65
(7) U. S. Navy Operational Archives

When data sources (2), (3), or (7) are listed 1st in order of importance, the data for that particular conflict is classified SECRET NOFORN

ONFLICT IDENTIFYING DATA)

Computer Print Out Names		Variable Numbers *			
6 Character	8 Character	A Analyses	A'Analyses	A'B'Analyses	AB Analyses
START		A-1			AB-1

* These refer to variable designators in the factor analyses discussed in the main body of the report and printed in Appendix B.

DATA CARD #2 (CONFL

Variable	Measurement	No. of Digits	Column No.	(Phase I)	Com 6 Ch (Pha
Conflict I. D. #:	(See Table A-1)	3	1-3		
Blank Space	N/A	2	4-5		
Data Card #:	"2"	1	6		
Blank Space	N/A	1	7		
Nation and Involvement:	Ordinal (see definitions)				
1. US	0-7	1	8	US	US I
2. Soviet Union	0-7	1	9	USSR	SU I
3. Communist China	0-7	1	10	CCHINA	CC I
4. Other Communist	0-7	1	11	COMM	OC I
5. UN	0-7	1	12	UN	UN I
6. Total # of Involved Nations	No. of States	2	13-14	NO. INV	TL I
Military Activity:					
7. Sea Operations	1-4	1	15	SEA	SE. I
8. Ground Operations	1-4	1	16	GROUND	GR.
9. Air Operations	1-4	1	17	AIR	AI. I
Blank Space	N/A	1	18		
10 Duration of Conflict:	Interval: # of days	4	19-22	LENGTH	DUR
Blank Space	N/A	1	23		
Fatalities:					
11. Total deaths	Interval: # of deaths	6	24-29	DEATHS	NO.
12. Ratio of # of Conflict deaths to the population in millions	Ratio: as described	4	30-33	RATIO	DE/
13. Ratio of # of deaths in a conflict to the conflict duration in days	Ratio: as described	5	34-38	INTENS	DE/
Blank Space	N/A	1	39		
Conflict Type:	Nominal (14-25 not used in Phase II)				
14. Overt Interstate Combat	1 or 0	1	40	COMBAT	
15. Incident	1 or 0	1	41	INCID	
16. Blockade	1 or 0	1	42	BLOCK	
17. Show of Force	1 or 0	1	43	FORCE	
18. Overt Civil War	1 or 0	1	44	CIVIL	
19. Guerrilla War	1 or 0	1	45	GUERR	
20. Coup d'Etat	1 or 0	1	46	COUP	

D #2 (CONFLICT DATA)

hase I)	Computer Print Out Names 6 Character (Phase II)	8 Character	Variable Numbers A Analyses	A' Analyses	A'B' Analyses	AB Analyses
S	US INV	US INVOL	A-2	A'-1	A'B'-1	AB-2
SSR	SU INV	SU INVOL	A-3	A'-2	A'B'-2	AB-3
CHINA	CC INV	CC INVOL	A-4	A'-3	A'B'-3	AB-4
OMM	OC INV	OC INVOL	A-5	A'-4	A'B'-4	AB-5
N	UN INV	UN INVOL	A-6	A'-5	A'B'-5	AB-6
O. INV	TL INV	TOTL INV	A-7	A'-6	A'B'-6	AB-7
CA	SE. INV	SEA INVO	A-8	A'-7	A'B'-7	AB-8
ROUND	GR. INV	GRD. INVO	A-9	A'-8	A'B'-8	AB-9
IR	AI. INV	AIR INVO	A-10	A'-9	A'B'-9	AB-10
ENGTH	DUR.	DURATION	A-11	A'-10	A'B'-10	AB-11
EATHS	NO. DE.	NO. DEAD	A-12	A'-11	A'B'-11	AB-12
ATIO	DE/POP	DEAD/POP	A-13	A'-12	A'B'-12	AB-13
ITENS	DE/DAY	DEAD/DAY	A-14	A'-13	A'B'-13	AB-14
OMBAT			A-15			AB-15
NCID			A-16			AB-16
LOCK			A-17			AB-17
ORCE			A-18			AB-18
IVIL			A-19			AB-19
UERR			A-20			AB-20
OUP			A-21			AB-21

Variable	Measurement	No. of Digits	Column No.	(Phase I)
21. Military Revolt/ Mutiny	1 or 0	1	47	MILIT
22. Insurrection	1 or 0	1	48	INSURR
23. Civil Disorder	1 or 0	1	49	CIVDIS
24. Colonial Conflict	1 or 0	1	50	COLON
25. East-West Conflict	1 or 0	1	51	E-W
Blank Space	N/A	1	52	
Location:	nominal			
26. Latin America	1 or 0	1	53	L. AMER
27. Europe	1 or 0	1	54	EUROPE
28. Middle East	1 or 0	1	55	M. EAST
29. Asia	1 or 0	1	56	ASIA
30. Southeast Asia	1 or 0	1	57	SEASIA
31. Africa	1 or 0	1	58	AFRICA
Blank Space	N/A	1	59	
32. Disruptive Effects:	ordinal: 1-3 (see definitions)	1	60	DISRUP
Blank Space	N/A	1	61	
Outcome:	nominal			
33. Mostly favorable to the US	1 - 0	1	62	FAV US
34. Mostly unfavorable to the US	1 - 0	1	63	UNFAV.
35. Terminated by Military Victory	1 - 0	1	64	TERM
36. Stopped Conclusively	1 - 0	1	65	STOP
Blank Space	N/A	15	66-80	

CARD #2 (continued)

(Phase I)	Computer Print Out Names 6 Character (Phase II)	8 Character	Variable Numbers A Analyses	A' Analyses	A'B' Analyses	AB Analyses
MILIT			A-22			AB-22
INSURR			A-23			AB-23
CIVDIS			A-24			AB-24
COLON	COL	COLONIAL	A-25	A'-14	A'B'-14	AB-25
E-W	E-W	EASTWEST	A-26	A'-15	A'B'-15	AB-26
L. AMER	L. AMER	LT. AMER	A-27	A'-16	A'B'-16	AB-27
EUROPE	EUR.	EUROPE	A-28	A'-17	A'B'-17	AB-28
M. EAST	M. EAST	MID EAST	A-29	A'-18	A'B'-18	AB-29
ASIA	ASIA	ASIA	A-30	A'-19	A'B'-19	AB-30
SEASIA	SEASIA	S. E. ASIA	A-31	A'-20	A'B'-20	AB-31
AFRICA	AFR.	AFRICA	A-32	A'-21	A'B'-21	AB-32
DISRUP	DIS.	DISRUPT.	A-33	A'-22	A'B'-22	AB-33
FAV US	FAV US	FAV US	A-34	A'-23	A'B'-23	AB-34
UNFAV.	UNFAV.	UNFAV US	A-35	A'-24	A'B'-24	AB-35
TERM	MILVIC	MIL VICT	A-36	A'-25	A'B'-25	AB-36
STOP	STOP	STOP CON	A-37	A'-26	A'B'-26	AB-37

DATA CARD #2-1 (TRANSFORMED CONFLICT DATA - 2 CARD FUNCH
FORMAT IS (F5.0, F10.0, F3.0, 9

	Variable	Measurement	No. of Digits	Col
	Conflict I.D. #:	(See Table A-1)	5	
1.	Start Date:	Year - Month - Day	10	
	Nation and Involvement	Ordinal (see definitions)		
2.	US	0-7	3	
3.	Soviet Union	0-7 log (x + 1)	6	
4.	Communist China	0-7 log (x + 1)	6	
5.	Other Communists	0-7 log (x + 1)	6	
6.	UN	0-7 log (x + 1)	6	
7.	Total # of Involved Nations	0-7 log [(log x) + 1]	6	
8.	Duration of Conflict	Interval - no. of days, log (x + 1)	6	
	Fatalities:			
9.	Total Deaths	Interval - no. of deaths, log (x + 1)	6	
10.	Ratio of # of Conflict Deaths to the Population in Millions	Ratio - as described, log (x + 1)	6	
11.	Ratio of # of Conflict Deaths to the Conflict Duration in Days	Ratio - as described, log (x + 1)	6	
	Conflict Type:	Nominal		
12.	Overt Interstate Combat	1 or 0	4	
13.	Incident	1 or 0	4	
14.	Show of Force	1 or 0	4	
15.	Guerrilla War	1 or 0	4	
16.	Coup d'Etat	1 or 0	4	
17.	Military Revolt/Mutiny	1 or 0	4	
18.	Insurrection	1 or 0	4	
19.	Civil Disorder	1 or 0	4	
20.	Colonial Conflict	1 or 0	4	
21.	East-West Conflict	1 or 0	4	
	Location	Nominal		
22.	Latin America	1 or 0	4	
23.	Middle East	1 or 0	4	
24.	Asia	1 or 0	4	
25.	Southeast Asia	1 or 0	4	
26.	Africa	1 or 0	4	
27.	Disruptive Effects:	Ordinal (see definitions) 1-3	4	
	Outcome:	Nominal		
28.	Mostly favorable to US	1 or 0	4	
29.	Mostly unfavorable to US	1 or 0	4	
30.	Terminated by military victory	1 or 0	4	
31.	Stopped Conclusively	1 or 0	4	

- 2 CARD PUNCHED OUTPUT OF TRANSGENERATION PROGRAM)
0, F10.0, F3.0, 9F6.3/20F4.0)

f Digits	Column No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers TA Analyses
5	1-5			
0	6-15	START	START	TA-1
3	16-18	US	US	TA-2
6	19-24	USSR	USSR	TA-3
6	25-30	CCHINA	C CHINA	TA-4
6	31-36	COMM	COMM	TA-5
6	37-42	UN	UN	TA-6
6	43-48	NO INV	NO INV	TA-7
6	49-54	LENGTH	LENGTH	TA-8
6	55-60	DEATHS	DEATHS	TA-9
6	61-66	RATIO	RATIO	TA-10
6	67-72	INTENS	IN TENS	TA-11
4	1-4	COMBAT	COMBAT	TA-12
4	5-8	INCID.	INCID.	TA-13
4	9-12	FORCE	FORCE	TA-14
4	13-16	GUERR	GUERR	TA-15
4	17-20	COUP	COUP	TA-16
4	21-24	MILIT.	MILIT.	TA-17
4	25-28	INSURR	INSURR	TA-18
4	29-32	CIV DIS	CIV DIS	TA-19
4	33-36	COLON	COLON	TA-20
4	37-40	E-W	E-W	TA-21
4	41-44	L. AMER	L. AMER	TA-22
4	45-48	M. EAST	M. EAST	TA-23
4	49-52	ASIA	ASIA	TA-24
4	53-56	SE ASIA	SE ASIA	TA-25
4	57-60	AFRICA	AFRICA	TA-26
4	61-64	DISRUP	DISRUP	TA-27
4	65-68	FAV US	FAV US	TA-28
4	69-72	UNFAV.	UNFAV.	TA-29
4	73-76	TERM.	TERM.	TA-30
4	77-80	STOP	STOP	TA-31

	Variable	Measurement	No. of Digits	Column No.	Co 6
	Conflict I. D. #:	(See Table A-2)	3	1-3	
	Blank Space	N/A	1	4	
	Navy Operation Case #:	1, 2, 3, . . . , n	1	5	
	Data Card #:	3	1	6	
	Blank Space	N/A	1	7	
	Naval Roles:				
1.	Preventive/ Reactive	1 or 0	1	8	PI
2.	Stabilization(1) Deterrence (2) Conflict Control(3)	1, 2, or 3	1	9	S/
	Blank Space	N/A	1	10	
3.	Threat Perceived: Incident (0) "Cold War" Competition(1) Revolutionary Movement (2) Subversion (3) Covert Against Non-Aligned Party (4) Covert Against US Ally (5) Overt Against Non-Aligned Party(6) Overt Against US Ally (7) Conflict Between US Allies (8) General War (9)	0-9	1	11	TI
	Blank Space	N/A	1	12	
	Naval Operations:				
4.	Evacuation	1 or 0	1	13	EV
5.	Show of Force	1 or 0	1	14	S
6.	Intervention	1 or 0	1	15	IN
7.	Interposition	1 or 0	1	16	IN
8.	Surveillance	1 or 0	1	17	SU
9.	Military Assist ance	1 or 0	1	18	M
10.	Combat	1 or 0	1	19	C
	Blank Space	N/A	1	20	

IONS AND RELEVANT CONFLICT DATA)

ıın No.	Computer Print Out Names		Variable Numbers	
3	6 Character	8 Character	AB Analyses	B Analyses
	PREREA		AB-38	B-1
	S/D/CC		AB-39	B-2
	THREAT		AB-40	B-3
	EVAC		AB-41	B-4
	S OF F		AB-42	B-5
	INTV		AB-43	B-6
	INTP		AB-44	B-7
	SURV		AB-45	B-8
	MIL		AB-46	B-9
	COMBAT		AB-47	B-10

	Variable	Measurement	No. of Digits	Column No.	Cor 6 C R M
11.	Readiness Measures: Theatre Alert only (1) Intratheater Redeployment (2) Intertheater Redeployment (3) General Alert with Intratheater Redeployment (4) General Alert with Intertheater Redeployment (5)	1-5	1	21	
	Blank Space	N/A	1	22	
	Potential Opposition:	0, 1, 2, or 3 (0) - No Threat (1) - Minor acts of violence possible (2) - Threat not challenge to USN in area (3) - Threat capable of challenging local USN forces			
12.	Terrorism (indiscriminate violence)		1	23	TE
13.	Sabotage (coordinated violence)		1	24	SA
14.	Unconventional Ground Forces		1	25	UN
15.	Non-nuclear Regular Ground Forces		1	26	NN
16.	Nuclear Armed Ground Forces		1	27	NA
17.	Aircraft		1	28	A/
18.	Anti-aircraft Defenses		1	29	AA
19.	Small Craft & Torpedo/Missile/ Gun Boats		1	30	SM
20.	Medium Combatants		1	31	MI
21.	Large Combatants		1	32	LC
22.	Submarines		1	33	SU
23.	Mine Warfare		1	34	MI
	Blank Space	N/A	1	35	
24.	Access to Sea; No. of miles		3	36-38	AC
	Blank Space	N/A	1	39	
25.	Duration of Navy Operations: No. of Days		4	40-43	DU

TA CARD #3 (continued)

umn No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers AB Analyses	B Analyses
1	R MEAS		AB-48	B-11
2				
rea al				
3	TERROR		AB-49	B-12
4	SAB		AB-50	B-13
5	UNCGRD		AB-51	B-14
6	NNGRD		AB-52	B-15
7	NAGRD		AB-53	B-16
8	A/C		AB-54	B-17
9	AAA		AB-55	B-18
0	SMLCBT		AB-56	B-19
1	MEDCBT		AB-57	B-20
2	LGCBT		AB-58	B-21
3	SUB		AB-59	B-22
4	MINES		AB-60	B-23
5				
6-38	ACCESS		AB-61	B-24
9				
0-43	DUR		AB-62	B-25

DATA CARD #3-1 (REVISED USN C

Variable	Measurement	No. of Digits	Column No.	Comput 6 Chara
Conflict I.D. #:	(See Table A-1)	3	1-3	
Data Card Revision #:	"1"	1	4	
Navy Operation Case #:	0-9	1	5	
No Navy Involvement (0)				
First Navy Operation in Conflict (1)				
Second Navy Operation in Conflict (2)				
Ninth Navy Operation in Conflict (9)				
Data Card #:	"3"	1	6	
Blank Space	N/A	1	7	
Naval Roles:	nominal			
1. Preventive	1 or 0	1	8	PRE.
2. Reactive	1 or 0	1	9	REA.
3. Stabilization	1 or 0	1	10	STAB.
4. Deterrence	1 or 0	1	11	DETE
5. Conflict Control	1 or 0	1	12	CONC
6. Threat Perceived:	1-10	2	13-14	TH. PE
Incident (1)				
"Cold War" Competition (2)				
Revolutionary Movement (3)				
Subversion (4)				
Covert Against Nonaligned Party (5)				
Covert Against US Ally (6)				
Overt Against Nonaligned Party (7)				
Overt Against US Ally (8)				
Conflict Between US Allies (9)				
General War (10)				
Blank Space	N/A	1	15	

1

(REVISED USN OPERATIONS AND RELEVANT CONFLICT DATA)

Computer Print Out Names		Variable Numbers		
6 Character	8 Character	A'Analyses	A'B'Analyses	B'Analyses
PRE.	PREVENT		A'B'-27	B'-1
REA.	REACTIVE		A'B'-28	B'-2
STAB.	STAB		A'B'-29	B'-3
DETER.	DETER		A'B'-30	B'-4
CONCTL	CONFCONT		A'B'-31	B'-5
TH. PER	THR. PER.	A'-27	A'B'-32	B'-6

Variable	Measurement	No. of Digits	Column No.	Computer 6 Characte
Naval Operations:	nominal			
7. Evacuation	1 or 0	1	16	EVAC.
8. Anticipatory Redeployment	1 or 0	1	17	ANT.RE
9. Show of Force	1 or 0	1	18	S of F
10. Intervention	1 or 0	1	19	INTV
11. Interposition	1 or 0	1	20	INTP
12. Surveillance	1 or 0	1	21	SURV
13. Military Assistance	1 or 0	1	22	MIL. AS
14. Combat	1 or 0	1	23	COMBAT
Blank Space	N/A	1	24	
15. Readiness Measures: Theater Alert Only (1) Intratheater Redeployment (2) Intertheater Redeployment (3) General Alert with Intratheater Redeployment (4) General Alert with Intertheater Redeployment (5)	1-5	1	25	RE. MEA
Blank Space	N/A	1	26	
Potential Opposition:	1-4 No threat (1) Minor acts of possible violence (2) No significant challenge to USN forces in area (3) Threat a challenge to USN forces in area (4)			
16. Terrorism		1	27	TERROR
17. Sabotage		1	28	SABOT.
18. Unconventional Ground Forces		1	29	UNC. GR
19. Non-nuclear Ground Forces		1	30	REG. GR.
20. Nuclear Backed Ground Forces		1	31	NUC. FR
21. Aircraft		1	32	A/C
22. Anti-aircraft Defenses		1	33	AAA

CARD #3-1 (continued)

Computer Print Out Names		Variable Numbers		
6 Character	8 Character	A'Analyses	A'B'Analyses	B'Analyses
EVAC.	EVACUATE		A'B'-33	B'-7
ANT.RE	ANT.REDP		A'B'-34	B'-8
S of F	S of F		A'B'-35	B'-9
INTV	INTV		A'B'-36	B'-10
INTP	INTP		A'B'-37	B'-11
SURV	SURV		A'B'-38	B'-12
MIL.AS	MIL.AST.		A'B'-39	B'-13
COMBAT	COMBAT		A'B'-40	B'-14
RE.MEA	RED.MEA.		A'B'-41	B'-15
TERROR	TERROR	A'-28	A'B'-42	B'-16
SABOT.	SABOTAGE	A'-29	A'B'-43	B'-17
UNC.GR	UNC.GRD.	A'-30	A'B'-44	B'-18
REG.GR.	REG.GRD.	A'-31	A'B'-45	B'-19
NUC.FR.	NUC.FOR.	A'-32	A'B'-46	B'-20
A/C	AIRCRAFT	A'-33	A'B'-47	B'-21
AAA	ANTI-AIR Or AAA	A'-34	A'B'-48	B'-22

Variable	Measurement	No. of Digits	Column No.	Con 6 Ch
23. Small Craft & Torpedo/ Missile/Gun Boats		1	34	SML
24. Medium Combatants		1	35	MED
25. Large Combatants		1	36	LGE
26. Submarines		1	37	SUBS
27. Mine Warfare		1	38	MINE
Blank Space	N/A	1	39	
28. Access to Sea:	Interval: No. of miles	3	40-42	ACC
Blank Space	N/A	1	43	
29. Duration of Navy Operations:	Interval: No. of days	4	44-47	DUR
Blank Space	N/A	1	48	
Naval Force Type Employed:	nominal			
30. Attack Carrier Force	1 or 0	1	49	CVA
31. Surface Action Force	1 or 0	1	50	SUR
32. Anti-Submarine Force	1 or 0	1	51	ASW
33. Aircraft Patrol Force	1 or 0	1	52	A/C
34. Surface Patrol Force	1 or 0	1	53	SUR
35. Amphibious and Landing Force	1 or 0	1	54	AMF
36. Service Force	1 or 0	1	55	SER
37. Mine Force	1 or 0	1	56	MIN
38. Submarine Force	1 or 0	1	57	SUB
Blank Space	N/A	1	58	
Conflict Type:	nominal			
40. Overt Interstate Combat	1 or 0	1	59	OVE
41. Border Clash	1 or 0	1	60	BOR
42. Incident	1 or 0	1	61	INC
43. Covert Interstate Operations	1 or 0	1	62	COV
44. Interstate Crisis	1 or 0	1	63	CRI
45. Unilateral Negative Action Responses	1 or 0	1	64	UNA

CARD #3-1 (continued)

mn No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers A'Analyses	A'B'Analyses	B'Analyses
4	SML. CF	SML. CFT.	A'-35	A'B'-49	B'-23
5	MED. CB	MED. CBT.	A'-36	A'B'-50	B'-24
6	LGE. CB	LGE. CBT.	A'-37	A'B'-51	B'-25
7	SUBS	SUBS	A'-38	A'B'-52	B'-26
8	MINE	MINE	A'-39	A'B'-53	B'-27
9					
0-42	ACCESS	ACCESS	A'-40	A'B'-54	B'-28
3					
4-47	DURUSN	DUR. NAVY		A'B'-55	B'-29
8					
9	CVA	CVA		A'B'-56	B'-30
0	SUR. A.	SUR. ACT.		A'B'-57	B'-31
1	ASW	ASW		A'B'-58	B'-33
2	A/C PT	A/C PAT.		A'B'-59	B'-33
3	SUR. PT	SUR. PAT.		A'B'-60	B'-34
4	AMPHIB.	AMPHIB.		A'B'-61	B'-35
5	SERV.	SERVICE		A'B'-62	B'-36
6	MINE F	MINE FOR		A'B'-63	B'-37
7	SUB. F	SUB. FOR		A'B'-64	B'-38
8					
9	OVERT	OVERT	A'-41	A'B'-65	
0	BORDER	BORDER	A'-42	A'B'-66	
1	INCID.	INCIDENT	A'-43	A'B'-67	
2	COVERT	COVERT	A'-44	A'B'-68	
3	CRISIS	CRISIS	A'-45	A'B'-69	
4	UNAR	U.N.A.R.	A'-46	A'B'-70	

DATA CARD #3-1 (continued)

Variable	Measurement	No. of Digits	Column No.	Comp 6 Char
46. Civil War	1 or 0	1	65	CIV. W
47. Guerrilla War	1 or 0	1	66	GUER. W
48. Revolutionary Coup	1 or 0	1	67	REV. CP
49. Reform Coup	1 or 0	1	68	REF. CP
50. Palace Revolution	1 or 0	1	69	PAL. R
51. Domestic Turmoil	1 or 0	1	70	DOMTU
Blank Space	N/A	10	71-80	

ARD #3-1 (continued)

No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers A'Analyses	A'B'Analyses	B'Analyses
	CIV. W	CIV. WAR	A'-47	A'B'-71	
	GUER. W	GUER. WAR	A'-48	A'B'-72	
	REV. CP	REV. COUP	A'-49	A'B'-73	
	REF. CP	REF. COUP	A'-50	A'B'-74	
	PAL. R	PAL. REV.	A'-51	A'B'-75	
	DOMTUR	DOM. TUR.	A'-52	A'B'-76	

80

DATA CARD #3-2 (TRANSFORMED USN O

	Variable	Measurement	No. of Digits	Column No
	Conflict I. D. #	(See Table A-2)	3	1-3
	Data Card Revision #	"2"	1	4
	Navy Operation Case #	0-9	1	5
	No Navy Involvement (0) First Navy Involvement in Conflict (1) Second Navy Operation in Conflict (2) ..... Ninth Navy Operation in Conflict (9)			
	Data Card #:	"3"	1	6
	Naval Roles:			
1.	Preventive/Reactive	1 or 0	1	7
2.	Stabilization/Deterrence/ Conflict Control	1, 2, 3	1	8
3.	Threat Perceived: Incident (0) "Cold War" Competition (1) Revolutionary Movement (2) Subversion (3) Covert Against Non-Aligned Party (4) Covert Against US Ally (5) Overt Against Non-Aligned Party (6) Overt Against US Ally (7) Conflict Between US Allies (8) General War (9)	0-9	1	9
	Naval Operations:			
4.	Evacuation	1 or 0	1	10
5.	Show of Force	1 or 0	1	11
6.	Intervention	1 or 0	1	12
7.	Surveillance	1 or 0	1	13
8.	Military Assistance	1 or 0	1	14
9.	Combat	1 or 0	1	15
10.	Readiness Measures: Theatre Alert Only ($\sqrt{1}$) Intratheater Redeployment ($\sqrt{2}$) Intertheater Redeployment ($\sqrt{3}$) General Alert with Intra-theater Redeployment ($\sqrt{4}$) General Alert with Inter-theater Redeployment ($\sqrt{5}$)	$\sqrt{x}$, (i. e., $\sqrt{1}, \sqrt{2}, \sqrt{3}, \sqrt{4}$, or $\sqrt{5}$)	5 to nearest 10^{-3}	16-20

1

TRANSFORMED USN OPERATIONS DATA)

of Digits	Column No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers TB Analyses
3	1-3			
1	4			
1	5			
1	6			
1	7	PREREA	PRE/REA	TB-1
1	8	S/D/CC	S/D/CC	TB-2
1	9	THREAT	THREAT	TB-3
1	10	EVAC	EVAC	TB-4
1	11	S. OFF.	S. OF F.	TB-5
1	12	INTV	INTV	TB-6
1	13	SURV	SURV	TB-7
1	14	MIL	MIL	TB-8
1	15	COMBAT	COMBAT	TB-9
5	16-20	R. MEAS	R. MEAS	TB-10

arest 10^{-3}

Variable	Measurement	No. of Digits	Colu
Potential Opposition: (Variables 11 through 20)	0, 1, 2 or 3 (0) - No Threat (1) - Minor Acts of Violence Possible (2) - Threat Not Challenge to USN in Area (3) - Threat Capable of Challenging Local USN Forces		
11. Terrorism (Indiscriminate Violence)	$\sqrt{x}$	1	21
12. Sabotage (Coordinated Violence)	$\sqrt{x}$	1	22
13. Unconventional Ground Forces		1	23
14. Non-Nuclear Regular Ground Forces		1	24
15. Aircraft		1	25
16. Anti-Aircraft Defenses		1	26
17. Smallcraft and Torpedo/Missile/ Gunboats	$\log(x+1)$	5 to nearest 10^{-3}	27-
18. Medium Combatants	$\log(x+1)$	5 to nearest 10^{-3}	32-
19. Submarines	$\log(x+1)$	5 to nearest 10^{-3}	37-
20. Mine Warfare	$\log(x+1)$	5 to nearest 10^{-3}	42-
21. Access to Sea; No. of Miles	$\log(x+1)$	5 to nearest 10^{-3}	47-
22. Duration of Navy Operations	$\log(x+1)$	5 to nearest 10^{-3}	52-

ARD #3-2 (continued)

Digits	Column No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers TB Analyses
	21	TERROR		TB-11
	22	SAB		TB-12
	23	UNCGRD		TB-13
	24	NNGRD		TB-14
	25	A/C		TB-15
	26	AAA		TB-16
est 10^{-3}	27-31	SMLCBT		TB-17
est 10^{-3}	32-36	MEDCBT		TB-18
est 10^{-3}	37-41	SUB		TB-19
est 10^{-3}	42-46	MINES		TB-20
est 10^{-3}	47-51	ACCESS		TB-21
est 10^{-3}	52-56	DUR		TB-22

DATA CARD #7 (MAJOR ACTOR INTERACTION IN L

	Variable	Measurement	No. of Digits	Column No.	Computer Pr 6 Character
	Country ID#:	(See Table A-3)	2	1-2	
	Data Year:	"59, 61, 63, or 65"	2	3-4	
	Blank Space	N/A	1	5	
	Data Card #:	"7"	1	6	
	Blank Space	N/A	25	7-31	
	Cadre Trained:	Nominal			
1.	Cadre from a country trained in the Soviet Union in a given year	1 or 0	1	32	CAD.SU
2.	Cadre from a country trained in the CPR in a given year	1 or 0	1	33	CAD.CC
	Cadre from a country trained in Eastern Europe in a given year	(no reliable data available)			
	Cadre from a country trained in the United States in a given year	(not applicable/available)			
	Support to Insurgents:	Nominal			
3.	Insurgents in a country supported by the Soviet Union in a given year	1 or 0		34	AIN.SU
4.	Insurgents in a country supported by the CPR in a given year	1 or 0		35	AIN.CC
5.	Insurgents in a country supported by Eastern Europe in a given year	1 or 0		36	AIN.EE
6.	Do not use data in this column.			37	

INTERACTION IN LESS DEVELOPED COUNTRIES AND SELECTED NATIONAL ATTRIBUTES)

No.	Computer Print Out Names 6 Character	8 Character	Variable Numbers C'59 Analyses	C'61 Analyses	C'63 Analyses	C'65 Analyses
	CAD.SU	CADRE SU	1	1	1	1
	CAD.CC	CADRE CC	2	2	2	2
	AIN.SU	AIDIN SU	3	3	3	3
	AIN.CC	AIDIN CC	4	4	4	4
	AIN.EE	AIDIN EE	5	5	5	5

	Variable	Measurement	No. of Digits	Column No.	Computer 6 Characte
	Blank Space	N/A	11	38-48	
*7.	Status of Communist Party in a country: No organized party(0) Legally organized party (1) Party illegal (2)	0, 1, or 2	1	49	CP LST
	Orientation of Communist Party in a country:	Nominal			
8.	Party oriented toward the Soviet Union in a given year	1 or 0	1	50	SU CPO
9.	Party oriented toward the CPR in a given year	1 or 0	1	51	CC CPO
10.	Party contains an open-split between Soviet Union and CPR factions in a given year	1 or 0	1	52	CP SPL
11.	Party orientation is toward neutrality over Soviet-CPR differences in a given year	1 or 0	1	53	CP NEU
	Blank Space	N/A	2	54-55	
12.	Communist Party Membership in a given year:	Interval	6	56-61	CP MEM
13.	Population of a country in a given year	Interval	9	62-70	POP.
14.	Date of Admission of Country to United Nations:	Year	2	71-72	
	Blank Space	N/A	1	73	
15.	Degree of Freedom of Press in a country:	Ordinal: 1-9	1	74	PR. FR.

*(This variable has no underlying scale because it mixes legality of the C. P. with its existence. In correlational or factor analyses, this variable should be disregarded. The data cards do, however, contain information of possible utility for other purposes.)

RD #7 (continued)

Computer Print Out Names		Variable Numbers			
6 Character	8 Character	C'59Analyses	C'61Analyses	C'63Analyses	C'65Analyses
CP LST	CP LSTAT	6	7	6	7
SU CPO	SU CP OR	7	8	7	8
CC CPO	CC CP OR	8	9	8	9
CP SPL	CP SPLIT	9	10	9	10
CP NEU	CP NEUT		11	10	11
CP MEM	CP MEMB	10	12	11	12
POP.	POPULAT.	11	13	12	13
PR. FR.	PRESS FR	12	14	13	14

DATA CARD #8 (MAJOR ACTOR INTERACTI

	Variable	Measurement	No. of Digits	Column No.	Computer Print Out Nam 6 Character	
	Country I. D. #:	(See Table A-3)	2	1-2		
	Data Year:	"59, 61, 63, or 65"	2	3-4		
	Data Card#:	"8"	1	5		
	Major Actor I. D. #: Soviet Union (1) Communist China (2) Eastern Europe (3) United States (4)	1-4	1	6		
16.	Regular military personnel from a country trained in the major actor in a given year:	Interval	4	7-10	MPTRSU, MPTRCC MPTREE, MPTRUS	MP MP
17.	Regular military personnel from the major actor in a country in a given year:	Interval	5	11-15	SUMPCY, CCMPCY, EEMPCY, USMPCY	SU EE
18.	Civil technicians from the major actor in a country in a given year:	Interval	4	16-19	SUCTCY, CCCTCY EECTCY, USCTCY	SU EE
	Blank Space	N/A	2	20-21		
19.	Military grants from the major actor extended to a country in a given year:	Interval: 10^4U.S.$	6	22-27	SU MGR, CC MGR EE. MGR, US. MGR	SU EE
20.	Civil technicians from a country trained in the major actor in a given year:	Interval	3	28-30	CTTRSU, CTTRCC, CTTREE, CTTRUS	CT CT
21.	Percentage of a country's imports that came from the major actor in a given year:	Ratio to the nearest 10^{-4}	4	31-34	R-IMSU, R-IMCC, R-IMEE, R-IMUS	R- R-

TOR INTERACTION IN LESS DEVELOPED COUNTRIES)

er Print Out Names r	8 Character	Variable Numbers C'59 Analyses	C'61 Analyses	C'63 Analyses	C'65 Analyses
PTRCC MPTRUS	MP TR.SU, MP TR.CC MP TR.EE, MP TR.US	13, 43, 59	15, 32, 47, 62	14, 31, 46, 60	15, 33, 49, 65
CMPCY, SMPCY	SU MP CY, CC MP CY, EE MP CY, US MP CY	14, 44, 60	16, 33 48, 63	15, 32, 47, 61	16, 34, 50, 66
CCTCY SCTCY	SU CT CY, CC CT CY EE CT CY, US CT CY	15, 30, 45, 61	17, 34 49, 64	16, 33, 48, 62	17, 35, 51, 67
C MGR S.MGR	SU MILGR, CCMILGR, EE MILGR, US MILGR	16, 46, 62	18, 35, 50, 65	17, 34, 63	18, 36, 52, 68
TTRCC, CTTRUS	CT TR.SU, CT TR.CC CT TR.EE, CT TR.US	17, 31, 47, 63	19, 36 51, 66	18, 35, 49, 64	19, 37, 53, 69
IMCC, IMUS	R-IMP.SU, R-IMP.CC R-IMP.EE, R-IMP.US	18, 32 48, 64	20, 37, 52, 67	19, 36, 50, 65	20, 38, 54, 70

Variable	Measurement	No. of Digits	Column No.	Computer Print Out Nam 6 Character	8 Ch
22. Percentage of a country's exports that went to the major actor in a given year:	Ratio to the nearest 10^{-4}	4	35-38	R-EXSU, R-EXCC, R-EXEE, R-EXUS	R-E R-E
Blank		1	39		
Blank		1	40		
23. Major actor news service operations in a country in a given year:	Nominal:1 or 0	1	41	NEWSSU, NEWSCC NEWSEE, NEWSUS	NEW NEW
24. Diplomatic recognition of the major actor by a country in a given year:	Nominal:1 or 0	1	42	DIP.SU, DIP.CC, DIP.EE, DIP.US	DIP DIP
25. Contiguous border between the major actor and a country:	Nominal:1 or 0	1	43	BOR.SU, BOR.CC, BOR.EE, BOR.US	BOR BOR
26. Distance between capital of the major actor and capital of a country: a. 0-999 miles (0) b. 1,000-1,999 miles (1) c. 2,000-2,999 miles (2) d. 3,000-3,999 miles (3) e. 4,000-4,999 miles (4) f. 5,000-5,999 miles (5)	Ordinal:0-9	1	44	DIS.SU, DIS.CC, DIS.EE, DIS.US	DIS DIS

RD #8 (continued)

r Print Out Names	8 Character	Variable Numbers C'59 Analyses	C'61 Analyses	C'63 Analyses	C'65 Analyses
CC, US	R-EXP. SU, R-EXP. CC, R-EXP. EE, R-EXP. US	19, 33, 49, 65	21, 38, 53, 68	20, 37, 51, 66	21, 39, 55, 71
SCC SUS	NEWS SU, NEWS CC, NEWS EE, NEWS US	20, 34, 50, 66	22, 39, 54, 69	21, 38 52, 67	22, 40, 56, 72
C, JS	DIP. SU, DIP. CC, DIP. EE, DIP. US	21, 35, 51, 67	23, 40, 55, 70	22, 39, 53, 68	23, 41 57, 73
CC, .US	BORD. SU, BORD. CC, BORD. EE, BORD. US	22, 36, 52, 68	24, 41, 56, 71	23, 40, 54, 69	24, 42 58, 74
C, S	DIST. SU, DIST. CC, DIST. EE, DIST. US	23, 37, 53, 69	25, 42 57, 72	24, 41 55, 70	25, 43, 59, 75

Variable	Measurement	No. of Digits	Column No.	Computer Print Out 6 Character	8
g. 6,000-6,999 miles (6) h. 7,000-7,999 miles (7) i. 8,000-8,999 miles (8) j. 9,000 or more miles (9)					
27. Economic aid from the major actor extended to a country in a given year:	Interval: 10^4U.S.$	7 (first digit denotes sign)	45-51	EAI.SU, EAI.CC, EAI.EE, EAI.US	E E
28. Percentage of cumulative economic aid extended by the major actor to a country which has been drawn:	Ratio: (Data for only 1965)	2	52-53	SU ADR CC ADR, EE ADR	S C
Blank Space	N/A	1	54		
29. Students from a country enrolled in the major actor in a given year:	Interval	4	55-58	STU.SU, STU.CC, STU.EE, STU.US	S S
30. Total imports of a country from the major actor in a given year:	Interval 10^3 U.S. $	7	59-65	T-IMSU, T-IMCC T-IMEE, T-IMUS	T T
31. Total exports of a country to the major actor in a given year:	Interval 10^3 U.S. $	7	66-72	T-EXSU, T-EXCC, T-EXEE, T-EXUS	T T
32. Years a country has been in UN:	Interval	2	73-74	YE.IN.	Y
Blank Space	N/A	2	75-76		
33. Random Number:	N/A	4	77-80	RAND.1, 2, 3 or 4	R

CARD #8 (continued)

ıter Print Out Names	8 Character	Variable Numbers C'59 Analyses	C'61 Analyses	C'63 Analyses	C'65 Analyses
CC, .US	E.AID SU, E.AID CC, E.AID EE, E.AID US	24, 38 54, 70	26, 43 58, 73	25, 42 56, 71	26, 44, 60, 76
ADR	SU EA.DR, CC EA.DR, EE EA.DR				27, 45, 61
.CC, .US	STUD. SU, STUD. CC, STUD. EE, STUD. US	25, 39, 55, 71	27, 44, 59, 74	26, 43 57, 72	28, 46 62, 77
MCC MUS	T-IMP.SU, T-IMP.CC, T-IMP.EE, T-IMP.US	26, 40, 56, 72	28, 45, 60, 75	27, 44, 58, 73	29, 47, 63, 78
EXCC, EXUS	T-EXP.SU, T-EXP.CC, T-EXP.EE, T-EXP.US	27, 41, 57, 73	29, 46, 61, 76	28, 45, 59, 74	30, 48, 64, 79
	YEARS IN	28	30	29	31
or 4	RANDOM 1, 2, 3 or 4	29, 42, 58, 74	31	30	32

TABLE A-1

309 Politically Significant Violent Conflicts, 1944-66 (Temporal Listing)

I.D. No.	Start Date	Stop Date	Conflict Short Title
007	441018	491115	GREEK CIVIL WAR - ROYALISTS VS. ELAS
015	450622	470605	SOVIET DEMANDS FOR BASES IN TURKISH STRAITS
122	450926	491227	INDONESIAN ANTI-DUTCH REBELLION
041	460101	490720	ISRAELI INDEPENDENCE AND ARAB LEAGUE PALESTINE WAR
165	460101	551114	PHILIPPINE HUKBALAHAP REBELLION
259	460111	460115	HAITIAN COUP AND DISORDERS
103	460211	460215	INDIAN INA RIOTING
104	460219	460226	INDIAN NAVY MUTINY
170	460524	460526	THAI-FRENCH INDOCHINA (CAMBODIA) BORDER INCIDENT
121	460602	460608	INDONESIAN ANTI-CHINESE TERRORISM
009	460615	460715	ITALY-YUGOSLAVIA DISPUTE OVER TRIESTE
209	460718	460722	BOLIVIAN INSURRECTION BY STUDENTS AND UNIONS
106	460816	460819	INDIAN RELIGIOUS RIOTING
033	461016	461206	SOVIET SUPPORTED REBELLION IN AZERBAIJAN, IRAN
183	461120	540727	VIETNAMESE-FRENCH INDOCHINA WAR
280	470307	470821	PARAGUAYAN ARMY REVOLT AND CIVIL WAR
329	470329	470729	MADAGASCAR ANTI-FRENCH REVOLT
097	470605	470620	CHINA-MONGOLIA FRONTIER INCIDENT
083	470719	470720	BURMESE EXECUTIVE COUNCIL ASSASSINATIONS
243	470823	470903	ECUADORIAN MILITARY COUP AND COUNTER-REVOLT
105	471001	491101	INDIA-PAKISTAN KASHMIR DISPUTE
171	471109	471110	THAI COUP
162	480106	480111	PAKISTANI COMMUNAL RIOTING IN KARACHI
347	480113	480114	SOMALIAN ANTI-INDIAN RIOTING
084	480201	CONT.	BURMESE RED FLAG AND WHITE FLAG COMMUNIST INSURRECTION
076	480217	480310	ASSASSINATION OF IMAN OF YEMEN
322	480228	480308	GHANA (GOLDCOAST) ACCRA RIOTS
228	480312	480419	COSTA RICAN REBELLION
225	480409	570512	COLOMBIAN TERRORIST AND BANDIT ACTIVITY
217	480415	480424	BRAZILIAN TERRORIST ACTS LEAD TO COMMUNIST ARRESTS
154	480615	600731	MALAYA COMMUNIST TERRORIST CAMPAIGN
010	480714	480716	ITALIAN COMMUNIST UPRISINGS
107	480912	480917	HYDERABAD FIGHTING
123	480919	481027	INDONESIAN COMMUNIST REVOLT
139	481020	481022	REPUBLIC OF KOREA ARMY REVOLT
108	481022	481028	INDIAN MAHE INVASION
248	481214	481215	EL SALVADOR ARMY COUP
089	4901	6403	BURMESE KAREN DISSIDENT ACTIVITY
348	490113	490115	SOUTH AFRICAN DURBAN RACE RIOTS

TABLE A-1 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
172	490227	490228	THAI INSURRECTION
358	490425	490502	UGANDAN DISORDERS IN BUGANDA
140	490515	490815	KOREAN BORDER INCIDENTS
210	490528	490917	BOLIVIAN MINERS REVOLT AND ITS SUPPRESSION
164	4906	CONT.	PAKISTANI INSURRECTION BY PATHAN TRIBES
081	490617	491005	AFGHANISTAN DEMANDS FOR INDEPENDEENT -PATHANISTAN-
251	490718	490720	GUATEMALAN ABORTIVE ARMY COUP
029	491001	520915	PRO-ETHIOPIAN TERRORISM IN ERITREA
334	491115	491127	NIGERIAN MINE DISPUTE
166	491119	CONT.	PHILIPPINE REVOLT AND SPORADIC GUERRILLA ACTIVITY
168	491203	491204	SARAWAK GOVERNOR (BRITISH) ASSASSINATED
229	491211	491218	COSTA RICA INVADED BY CALDERONISTAS FROM NICARAGUA
085	500101	540101	BURMESE GOVERNMENT VS KOUMINTANG GUERRILLAS
124	500123	500518	INDONESIAN WEST JAVA AND MACASSAR MILITARY UPRISING
109	500124	500424	INDIAN-PAKISTANI COMMUNAL RIOTING
048	500130	500202	IVORY COAST UPRISINGS
211	500518	500521	BOLIVIAN NRM UPRISING
091	500521	540807	CAMBODIAN CAMPAIGNS OF INDOCHINA WAR
130	500714	500728	INDONESIAN OCCUPATION OF BURU AND CERAM (RSM)
128	500805	500808	INDONESIAN FIGHTING AT MACASSAR
126	500928	501102	INDONESIAN OCCUPATION OF AMBONIA
180	501024	510824	TIBET INVADED BY COMMUNIST CHINESE ARMY
286	501030	501101	PUERTO RICAN NATIONALIST UPRISING
129	501103	550119	INDONESIAN AMBONIA AND CERAM GUERRILLA ACTIVITY (RSM)
158	501110	510610	NEPALESE INSURRECTION
288	501111	501113	VENEZUELAN PRESIDENTIAL ASSASSINATION AND ATTEMPTED COUP
019	5103	5104	YUGOSLAVIA THREATENED BY SOVIET AND BLOC TROOPS
043	510315	510501	ISRAEL-SYRIA BORDER INCIDENTS
034	510412	511207	RIOTS OVER IRANIAN OIL INDUSTRY NATIONALIZATION
274	510509	510511	PANAMANIAN COUP OUSTS ARIAS
173	510629	510701	THAI ABORTIVE NAVAL REVOLT
244	510818	510822	ECUADOR-PERU BORDER DISPUTE
026	511015	520322	BRITISH-EGYPTIAN SUEZ CANAL ZONE CONFLICT
057	511101	560302	MOROCCAN ANTI-FRENCH REBELLION
174	511129	511130	THAI COUP
072	520115	560317	TUNISIAN WAR FOR INDEPENDENCE FROM FRANCE
011	520320	520326	TRIESTE CIVIL DISORDER
212	520409	520412	BOLIVIAN NRM AND ARMY REVOLT INSTALLS ESTENSORO
169	520807	520812	SARAWAK COMMUNIST TERRORIST ACTIVITY
325	520926	600112	KENYA MAU-MAU TERRORIST CAMPAIGN
044	530122	561211	ISRAEL-JORDAN DISPUTE
144	530413	540806	LAOTIAN GUERRILLAS AIDED BY VIETMINH INVASION
002	530616	530617	EAST GERMAN URBAN UPRISING
231	530726	530727	CUBAN CASTRO UPRISING AT MONCADA BARRAKS

TABLE A-1 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
094	530812	530815	TERRORISM OUTBREAK ON CEYLON
035	530816	530819	IRANIAN ROYALIST REVOLT AND COUP
131	530920	531123	INDONESIAN MOSLEM REVOLT IN NORTH SUMATRA (DI)
349	531101	531111	SOUTH AFRICAN DISORDERS
012	531104	531107	TRIESTE CIVIL DISORDER
213	531109	531110	BOLIVIAN RIGHTIST INSURRECTION FAILS
110	540101	CONT.	INDIA-PAKISTAN KASHMIR DISPUTE
067	540226	540303	DAMASCUS RIOTING
063	540301	540304	SUDAN KHARTOUM RIOTS
163	540330	540701	PAKISTAN BENGAL RIOTING
281	540505	540506	PARAGUAYAN ARMY COUP
252	540618	540630	GUATEMALA INVADED BY REBELS
098	540903	550903	CHINA OFF-SHORE ISLANDS (TACHENS) CRISIS
137	541021	620815	INDONESIAN-DUTCH WEST IRIAN DISPUTE
021	541101	620627	ALGERIAN WAR FOR INDEPENDENCE FROM FRANCE
145	541201	560801	LAOTIAN ROYALISTS VS. PATHET LAO
167	55	CONT.	PHILIPPINE HUKBALAHAP RESURGENCE
073	550101	CONT.	TUNISIAN YOUSSEFIST TERRORIST CAMPAIGN
275	550102	550116	PANAMANIAN PRESIDENT ASSASSINATED
230	550111	550122	COSTA RICA INVADED BY INSURGENTS FROM NICARAGUA
345	550211	550213	SIERRA LEONE FREETOWN RIOTING
045	550228	561106	ISRAEL-EGYPT BORDER INCIDENTS AND SINAI CAMPAIGN
112	550301	CONT.	INDIAN NAGALAND REBELLION
005	550401	590222	CYPRIOT EOKA TERRORIST CAMPAING FOR UNION WITH GREECE
304	5505	6207	CAMEROONS TERRORIST ACTIVITY
201	550616	550920	ARGENTINE ANTI-PERON REVOLTS AND OVERTHROW OF PERON
101	550625	550925	INDIAN INVASION OF GOA
027	550703	561029	BRITISH-EGYPTIAN SUEZ CANAL ZONE CONTROL DISPUTE
196	550818	550900	SUDAN ARMY MUTINY IN SOUTHERN SUDAN
353	550818	550901	SUDANESE ARMY MUTINY
062	551026	CONT.	OMANI REBELLION IN MUSCAT-OMAN
132	551115	560615	INDONESIAN FIGHTING AGAIST DAR-UL-ISLAM IN CELEBES
065	560101	CONT.	SUDANESE SOUTHERN REVOLT
197	560218	560222	SUDAN KOSTI INCIDENTS
354	560218	560222	SUDANESE KOSTI INCIDENT
058	560301	580301	MOROCCAN LIBERATION ARMY-FRENCH ARMY CLASHES
181	560301	560308	TIBETAN GOLOR TRIBAL RIOTING
049	560417	560524	DISORDERS AND THREATENED JORDANIAN COUP
202	560610	560611	ARGENTINE ABORTIVE PERONISTA UPRISING
014	560628	560701	POZNAN UPRISING IN POLAND
087	560721	561212	BURMESE-CHINESE BORDER CLASH
099	561010	561015	CHINA-HONG KONG, KOWLOON RIOTING
008	561024	561112	HUNGARIAN REVOLUTION
028	561029	561106	EGYPTIAN-BRITISH AND FRENCH SUEZ WAR

TABLE A-1 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
185	561111	561114	NORTH VIETNAMESE RURAL UPRISING
260	561201	570801	HAITI ELECTIONS WON BY DUVALIER AFTER DISORDERLY CAMPAIGN
232	561202	581231	CUBAN CIVIL WAR CASTRO VS. BATISTA
134	561220	580522	INDONESIAN REVOLTS ON SUMATRA (DI)
092	57	CONT.	CAMBODIAN KHMER SEREI INSURGENCY
227	57	CONT.	COLOMBIAN CIVIL WAR AND TERRORISM
127	570302	610414	INDONESIAN CELEBES AND MOLUCCAS UPRISING (DI AND RSM)
050	570413	570501	JORDANIAN ARMY PLOT AND INTERNAL DISORDERS
266	570418	570503	HONDURAS-NICARAGUA BORDER DISPUTE
226	570510	570511	COLOMBIAN COUP
074	570531	610723	TUNISIA-FRANCE BIZERTE POST INDEPENDENCE CLASHES
068	570813	571020	SYRIA-TURKEY AND US DISPUTE
175	570916	570918	THAI COUP
254	571022	571027	GUATEMALAN ELECTION VIOLENCE
059	571023	571026	MOROCCAN MEKNES RIOTING
060	571123	571208	MOROCCO-SPAIN IFNI DISPUTE
159	58	CONT.	PAKISTANI BALUCHISTAN TRIBAL UPRISING
177	58	CONT.	THAI SOUTHERN COMMUNIST TERRORIST INSURGENT ACTIVITY
289	580101	580124	VENEZUELAN COUP OUSTS JIMENEZ
055	580509	581015	CIVIL WAR AND US INTERVENTION IN LEBANON
095	580522	580722	LANGUAGE RIOTS ON CEYLON
136	580523	610823	INDONESIAN SUMATRA GUERRILLA ACTIVITY (PRRI)
113	580601	CONT.	INDIAN KERALA UPRISING
037	580714	580715	IRAQI ARMY REVOLT
203	580817	600327	ARGENTINE PERONISTA DISORDERS
100	580823	581103	CHINA OFF-SHORE ISLANDS (QUEMOY-MATSU) CRISIS
051	580901	581231	JORDANIAN INTERNAL UNREST
290	580907	580908	VENEZUELAN ABORTIVE INSURRECTION
080	581015	590201	MOROCCO UNREST IN RIF AND MIDDLE ATLAS
003	581110	590927	INCREASED BERLIN TENSION, INCIDENTS, AND CONFERENCE
088	59	CONT.	BURMESE SHAN STATE REBELLION
309	590104	590107	CONGOLESE ANTI-COLONIAL RIOTING
337	590211	590325	NYASALAND-RHODESIA DISTURBANCES
368	590215	590217	CAMBODIAN REVOLT OF GENERAL DAP CHHUON
366	590307	590310	IRAQI ABORTIVE MILITARY REVOLT OF COL. SHAWWAF
182	590317	590322	TIBETAN ANTI-CHINESE REVOLT
233	5904	CONT.	CUBAN COUNTER-REVOLUTIONARY ACTIVITY
214	590419	590420	BOLIVIAN SOCIALIST UPRISING IN LA PAZ
276	590426	590502	PANAMA INVADED BY CUBAN SPONSORED INSURGENT BAND
146	590512	591016	LAOTIAN GUERRILLA ACTIVITY NEAR DRV BORDER
271	590601	590612	NICARAGUA INVADED BY CASTROITE INSURGENTS
237	590614	590623	DOMINICAN REPUBLIC INVADED BY CASTROITE GUERRILLAS
305	590627	611001	CAMEROONS BAMILEKE TERRORISM
367	590714	590718	IRAQI MASSACRE AT KIRKUK
261	590813	590906	HAITI INVADED BY CASTROITE GUERRILLAS

TABLE A-1 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
114	590825	591125	INDIA-CHINA LONGJU AND LADAKH INCIDENTS
310	591029	591031	CONGOLESE NATIONALIST RIOTING
342	591101	591115	RWANDAN HATA REVOLT AND TRIBAL VIOLENCE
277	591103	591129	PANAMANIAN ANTI-US DEMONSTRATIONS AND RIOTING
184	591201	CONT.	REPUBLIC OF VIETNAM VS. VIET CONG GUERRILLAS
311	591207	600118	CONGO LULUA-BALUBA TRIBAL DISORDERS
090	60	CONT.	BURMESE GOVERNMENT VS KACHIN INDEPENDENCE ARMY
198	60	6105	NORTH VIETNAMESE THAI-MEO AUTONOMOUS REGION INSURRECTION
359	600117	600126	UGANDAN RIOTS IN BUKEDI
142	600315	600426	REPUBLIC OF KOREA POST ELECTION RIOTS
291	600420	600422	VENEZUELAN ATTEMPTED RIGHTIST COUP
086	6005	6006	BURMESE KMT-CHINESE COMMUNIST FIGHTING
016	600521	600527	TURKISH MILITARY COUP OUSTS MENDERES
292	600624	600625	VENEZUELAN PRESIDENTIAL ASSASSINATION AND COUP FAIL
161	600628	600629	NEPAL-CHINA BORDER INCIDENT
312	600705	600730	CONGOLESE ARMY MUTINY
313	600712	630301	CONGOLESE KATANGA AND KASAI SECESSION
340	600720	600727	RHODESIAN SALISBURY AND BULAWAYO RIOTS
148	600809	620629	LAOTIAN CIVIL WAR WITH RIGHTISTS VS NEUTRALIST VS PL
052	600829	600830	JORDANIAN PRIME MINISTER MAJALI ASSASSINATED
082	600901	610501	AFGHANISTAN-PAKISTAN BORDER INCIDENTS
293	601024	601130	VENEZUELAN STUDENT DISORDERS
272	601109	601114	NICARAGUA INVADED BY CASTROITE INSURGENTS
186	601111	601113	SOUTH VIETNAMESE ATTEMPTED COUP
255	601113	601117	GUATEMALAN ABORTIVE REVOLT
030	601213	601217	ATTEMPTED COUP IN ETHIOPIA
301	610201	CONT.	ANGOLAN ANTI-PROTUGUESE INSURRECTION
160	610301	620301	NEPALESE CONGRESS REBEL ACTIVITY
038	610315	CONT.	KURDISH REBELLION IN IRAQ
234	610417	610421	CUBA INVASION BY ANTI-CASTRO REBELS
143	610516	610517	REPUBLIC OF KOREA MILITARY COUP
238	610530	620119	DOMINICAN REPUBLIC DICTATOR ASSASSINATION AND DISORDERS
364	610601	610607	ZANZIBAR ELECTION RIOTS
054	610630	610730	KUWAIT THREATENED BY IRAQI MOBILIZATION AT BORDER
004	610812	620508	BERLIN WALL CRISIS
115	611003	611013	INDIAN COMMUNAL RIOTING
245	611103	611109	ECUADORIAN PRESIDENT OUSTED BY VIOLENT DEMONSTRATIONS
295	6112	CONT.	VENEZUELAN FALN TERRORIST ACTIVITY
319	611214	611217	ETHIOPIAN ABORTIVE COUP
102	611218	611221	INDIAN INVASION AND CAPTURE OF GOA
056	611231	620101	ABORTIVE LEBANESE COUP
178	62	CONT.	THAI NORTHEAST PROVINCES INSURGENT ACTIVITY
235	62	CONT.	CUBA-UNITED STATES DISPUTE OVER GUANTANAMO NAVAL BASE
283	620115	620306	PERUVIAN INSURRECTION
256	620121	620124	GUATEMALA INFILTRTION FROM HONDURAS

TABLE A-1 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
221	620216	620217	BRITISH GUIANA RIOTING IN GEORGETOWN
046	620316	620319	ISRAEL-SYRIA BORDER INCIDENTS
069	620328	620403	SYRIAN ABORTIVE COUP
296	620504	620609	VENEZUELAN LEFTIST NAVAL REVOLTS
338	620715	621101	NYASALAND (ZAMBIA-MALAWI) DISTURBANCES
351	620721	630207	SOUTH AFRICAN RACIAL TERRORISM AND SABOTAGE
022	620725	6407	ALGERIAN POST INDEPENDENCE POWER STRUGGLE
262	6208	6209	HAITIAN UNREST
323	620802	6301	GHANA TERRORIST ACTIVITY
206	620918	620922	ARGENTINE ARMY REVOLT
079	620926	CONT.	YEMENI CIVIL WAR (REVOLT FOLLOWED BY GUERRILLA WAR)
116	621020	621122	INDIA-CHINA
020	621022	CONT.	ANTI-BRITISH INSURRECTION AND TERRORISM IN ADEN
236	621022	621120	CUBAN MISSILE CRISIS
150	621115	6304	LAOTIAN PATHET LAO ACTIVITY VS NEUTRALISTS
155	6212	CONT.	MALAYSIAN INSURGENT ACTIVITY (CTO AND CCO)
302	621208	621218	BRUNEI ANTI-BRITISH REVOLT
357	630113	630114	TOGO COUP
039	630208	630209	KASSEM OVERTHROWN IN IRAQI COUP
070	630308	630309	ABORTIVE SYRIAN ANTI-B-ATHIST COUP
207	630402	630407	ARGENTINE ANTI-PERONISTA ABORTIVE REVOLT
157	630412	CONT.	MALAYSIA-INDONESIA CONFRONTATION
053	630420	630425	JORDANIAN INTERNAL UNREST
223	630420	630708	BRITISH GUIANA RIOTING AND GENERAL
258	6305	CONT.	GUATEMALAN GUERRILLA ACTIVITY
263	6305	6306	HAITIAN UNREST
187	630505	631020	SOUTH VIETNAMESE URBAN DISORDERS
018	630520	630521	ABORTIVE REVOLT BY ANKARA MILITARY ACADEMY
036	630604	630608	IRANIAN TRIBAL UPRISING IN FARS PROVINCE
031	6307	CONT.	OGEADEN INSURGENCY IN ETHIOPIA
339	6307	CONT.	PORTUGUESE GUINEA ANTI-COLONIAL INSURGENCY
246	630711	630712	ECUADORIAN COUP OVERTHROWS AROSEMENA
273	630720	630920	NICARAGUAN FSLN INSURGENT ACTIVITY
264	630805	630808	HAITIAN REBELS INVADE FROM DOMINICAN REPUBLIC
316	630814	630815	CONGO REPUBLIC COUP OUST YOULOW
331	6309	6412	MALI TUAREG TRIBAL REBELLION
239	630925	630927	DOMINICAN REPUBLIC MILITARY COUP
023	630929	6410	ALGERIAN BERBER (KABYLE) INSURRECTION
024	631003	631104	ALGERIA-MOROCCO BORDER DISPUTE
317	631020	631115	DAHOMEY MILITARY COUP
061	631025	631025	MOROCCAN ATTEMPTED COUP
152	6311	CONT.	LAOTIAN CIVIL WAR RENEWED
188	631101	631102	SOUTH VIETNAMESE MILITARY COUP OVERTHROWS DIEM
327	631113	CONT.	KENYA-SOMALIA BORDER INCIDENTS

TABLE A-1 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
040	631118	631120	IRAQI MILITARY OUSTS BA-THIST GOVERNMENT
240	631129	631231	DOMINICAN REPUBLIC COMMUNIST GUERRILLA ACTIVITY
006	631221	CONT.	GREEK-TURKISH CYPRIOT CIVIL WAR
343	631221	640215	RWANDAN ATTEMPTED TUTSI COUNTER-REVOLUTION
270	6401	6401	MEXICO BOUND CUBAN ARMS RUNNER REPORTED
117	640101	640401	INDIAN-PAKISTANI COMMUNAL RIOTING
278	640109	640114	PANAMA CANAL ZONE FLAG RIOTING
320	640111	640331	ETHIOPIA-SOMALIA BORDER DISPUTE
365	640112	640113	ZANZIBAR REVOLT
356	640120	640124	TANGANYIKAN ARMY MUTINY
328	640123	640124	KENYA ARMY MUTINY
321	640217	640220	GABON ABORTIVE COUP
071	640223	640504	SYRIAN PRO-UAR UPRISING
208	640228	640628	ARGENTINE PERONISTA DISORDERS
224	640301	CONT.	BRITISH GUIANA RACIAL AND POLTICAL
093	640310	CONT.	CAMBODIA-SOUTH VIETNAM BORDER INCIDENTS
219	640331	640402	BRAZILIAN MILITARY COUP
279	6404	6404	PANAMA ELECTIONS AND POTENTIAL DISORDERS
151	640419	640423	LAOTIAN RIGHTIST MILITARY COUP
314	6405	CONT.	CONGOLESE TRIBAL WARFARE
363	6405	6409	ZAMBIAN LUMPA CHURCH UPRISING
047	640615	CONT.	ISRAEL-SYRIA BORDER INCIDENTS
066	640700	CONT.	SUDAN SUPPORTED LIBERATION GROUPS IN ERITREA
156	640721	640908	MALAYSIAN COMMUNAL RIOTING IN SINGAPORE
265	6408	6409	HAITIAN INVASION THREAT
332	6408	CONT.	MOZAMBIQUE INSURGENT ACTIVITY
190	640802	640805	GULF OF TONKIN INCIDENT AND REPRISAL
333	641014	CONT.	NIGER SAWABA INSURGENCY
064	641021	641030	SUDAN KHARTOUM UPRISING
215	641103	641105	BOLIVIAN MILITARY COUP
119	6412	CONT.	INDIAN MIZO TRIBAL INSURRECTION
153	650131	650203	LAOTIAN ABORTIVE RIGHTIST COUP
330	650212	650512	MALAWI INSURGENT ACTIVITY
111	650409	650507	INDIA-PAKISTAN RANN OF KUTCH FIGHTING
242	650425	CONT.	DOMINICAN REPUBLIC INSURRECTION AND CIVIL WAR
216	650517	650526	BOLIVIAN ARMY VS. MINERS MILITIA
325	650619	650625	BEN BELLA OVERTHROWN BY COUP IN ALGERIA
032	6507	CONT.	SOUTHERN PROVINCE INSURGENCY IN ETHIOPIA
120	650805	650923	INDIA-PAKISTAN KASHMIR
338	6510	CONT.	CHAD INSURGENT ACTIVITY
138	651001	CONT.	INDONESIAN ABORTIVE COUP AND ANTI-PKI REACTION
341	651111	CONT.	RHODESIAN AFRICAN NATIONALIST TERRORISM AND SABOTAGE
335	660115	660117	NIGERIAN MILITARY COUP
324	660224	660225	GHANA MILITARY COUP OUSTS NKRUMAH
361	660523	660525	UGANDAN SEIZUE OF POWER BY OBOTE
336	660729	CONT.	NIGERIAN MILITARY COUP AND TRIBAL VIOLENCE
303	661019	661020	BURUNDI TRIBAL INSURRECTION
285	6506	CONT.	PERUVIAN MIR INSURGENT ACTIVITY

TABLE A-2

352 Conflicts, 1944-66, On Which U.S. Navy Operations Data Were Collected (Temporal Listing)

I.D. No.	Start Date	Stop Date	Conflict Short Title
007	441018	491115	GREEK CIVIL WAR - ROYALISTS VS. ELAS
013	441231	481026	COMMUNIST TAKE OVER OF POLAND
015	450622	470605	SOVIET DEMANDS FOR BASES IN TURKISH STRAITS
122	450926	491227	INDONESIAN ANTI-DUTCH REBELLION
096	460101	501001	CHINESE CIVIL WAR
041	460101	490720	ISRAELI INDEPENDENCE AND ARAB LEAGUE PALESTINE WAR
165	460101	551114	PHILIPPINE HUKBALAHAP REBELLION
259	460111	460115	HAITIAN COUP AND DISORDERS
103	460211	460215	INDIAN INA RIOTING
104	460219	460226	INDIAN NAVY MUTINY
170	460524	460526	THAI-FRENCH INDOCHINA (CAMBODIA) BORDER INCIDENT
121	460602	460608	INDONESIAN ANTI-CHINESE TERRORISM
009	460615	460715	ITALY-YUGOSLAVIA DISPUTE OVER TRIESTE
209	460718	460722	BOLIVIAN INSURRECTION BY STUDENTS AND UNIONS
106	460816	460819	INDIAN RELIGIOUS RIOTING
033	461016	461206	SOVIET SUPPORTED REBELLION IN AZERBAIJAN, IRAN
183	461120	540727	VIETNAMESE-FRENCH INDOCHINA WAR
280	470307	470821	PARAGUAYAN ARMY REVOLT AND CIVIL WAR
329	470329	470729	MADAGASCAR ANTI-FRENCH REVOLT
097	470605	470620	CHINA-MONGOLIA FRONTIER INCIDENT
083	470719	470720	BURMESE EXECUTIVE COUNCIL ASSASSINATIONS
243	470823	470903	ECUADORIAN MILITARY COUP AND COUNTER-REVOLT
105	471001	491101	INDIA-PAKISTAN KASHMIR DISPUTE
171	471109	471110	THAI COUP
162	480106	480111	PAKISTANI COMMUNAL RIOTING IN KARACHI
347	480113	480114	SOMALIAN ANTI-INDIAN RIOTING
084	480201	CONT.	BURMESE RED FLAG AND WHITE FLAG COMMUNIST INSURRECTION
076	480217	480310	ASSASSINATION OF IMAN OF YEMEN
322	480228	480308	GHANA (GOLDCOAST) ACCRA RIOTS
228	480312	480419	COSTA RICAN REBELLION
225	480409	570512	COLOMBIAN TERRORIST AND BANDIT ACTIVITY
217	480415	480424	BRAZILIAN TERRORIST ACTS LEAD TO COMMUNIST ARRESTS
154	480615	600731	MALAYA COMMUNIST TERRORIST CAMPAIGN
001	480618	490512	BERLIN BLOCKADE AND AIRLIFT
010	480714	480716	ITALIAN COMMUNIST UPRISINGS
107	480912	480917	HYDERABAD FIGHTING
123	480919	481027	INDONESIAN COMMUNIST REVOLT
139	481020	481022	REPUBLIC OF KOREA ARMY REVOLT
108	481022	481028	INDIAN MAHE INVASION

TABLE A-2 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
248	481214	481215	EL SALVADOR ARMY COUP
089	4901	6403	BURMESE KAREN DISSIDENT ACTIVITY
348	490113	490115	SOUTH AFRICAN DURBAN RACE RIOTS
172	490227	490228	THAI INSURRECTION
358	490425	490502	UGANDAN DISORDERS IN BUGANDA
140	490515	490815	KOREAN BORDER INCIDENTS
210	490528	490917	BOLIVIAN MINERS REVOLT AND ITS SUPPRESSION
164	4906	CONT.	PAKISTANI INSURRECTION BY PATHAN TRIBES
081	490617	491005	AFGHANISTAN DEMANDS FOR INDEPENDEENT -PATHANISTAN-
251	490718	490720	GUATEMALAN ABORTIVE ARMY COUP
029	491001	520915	PRO-ETHIOPIAN TERRORISM IN ERITREA
334	491115	491127	NIGERIAN MINE DISPUTE
166	491119	CONT.	PHILIPPINE REVOLT AND SPORADIC GUERRILLA ACTIVITY
168	491203	491204	SARAWAK GOVERNOR (BRITISH) ASSASSINATED
229	491211	491218	COSTA RICA INVADED BY CALDERONISTAS FROM NICARAGUA
085	500101	540101	BURMESE GOVERNMENT VS KOUMINTANG GUERRILLAS
124	500123	500518	INDONESIAN WEST JAVA AND MACASSAR MILITARY UPRISING
109	500124	500424	INDIAN-PAKISTANI COMMUNAL RIOTING
048	500130	500202	IVORY COAST UPRISINGS
211	500518	500521	BOLIVIAN NRM UPRISING
091	500521	540807	CAMBODIAN CAMPAIGNS OF INDOCHINA WAR
141	500625	530727	KOREAN WAR
130	500714	500728	INDONESIAN OCCUPATION OF BURU AND CERAM (RSM)
128	500805	500808	INDONESIAN FIGHTING AT MACASSAR
126	500928	501102	INDONESIAN OCCUPATION OF AMBONIA
180	501024	510824	TIBET INVADED BY COMMUNIST CHINESE ARMY
286	501030	501101	PUERTO RICAN NATIONALIST UPRISING
129	501103	550119	INDONESIAN AMBONIA AND CERAM GUERRILLA ACTIVITY (RSM)
158	501110	510610	NEPALESE INSURRECTION
288	501111	501113	VENEZUELAN PRESIDENTIAL ASSASSINATION AND ATTEMPTED COUP
019	5103	5104	YUGOSLAVIA THREATENED BY SOVIET AND BLOC TROOPS
043	510315	510501	ISRAEL-SYRIA BORDER INCIDENTS
034	510412	511207	RIOTS OVER IRANIAN OIL INDUSTRY NATIONALIZATION
274	510509	510511	PANAMANIAN COUP OUSTS ARIAS
173	510629	510701	THAI ABORTIVE NAVAL REVOLT
244	510818	510822	ECUADOR-PERU BORDER DISPUTE
026	511015	520322	BRITISH-EGYPTIAN SUEZ CANAL ZONE CONFLICT
057	511101	560302	MOROCCAN ANTI-FRENCH REBELLION
174	511129	511130	THAI COUP
072	520115	560317	TUNISIAN WAR FOR INDEPENDENCE FROM FRANCE
011	520320	520326	TRIESTE CIVIL DISORDER
212	520409	520412	BOLIVIAN NRM AND ARMY REVOLT INSTALLS ESTENSORO
169	520807	520812	SARAWAK COMMUNIST TERRORIST ACTIVITY
325	520926	600112	KENYA MAU-MAU TERRORIST CAMPAIGN

TABLE A-2 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
044	530122	561211	ISRAEL-JORDAN DISPUTE
144	530413	540806	LAOTIAN GUERRILLAS AIDED BY VIETMINH INVASION
002	530616	530617	EAST GERMAN URBAN UPRISING
231	530726	530727	CUBAN CASTRO UPRISING AT MONCADA BARRAKS
094	530812	530815	TERRORISM OUTBREAK ON CEYLON
035	530816	530819	IRANIAN ROYALIST REVOLT AND COUP
131	530920	531123	INDONESIAN MOSLEM REVOLT IN NORTH SUMATRA (DI)
349	531101	531111	SOUTH AFRICAN DISORDERS
012	531104	531107	TRIESTE CIVIL DISORDER
213	531109	531110	BOLIVIAN RIGHTIST INSURRECTION FAILS
110	540101	CONT.	INDIA-PAKISTAN KASHMIR DISPUTE
067	540226	540303	DAMASCUS RIOTING
063	540301	540304	SUDAN KHARTOUM RIOTS
163	540330	540701	PAKISTAN BENGAL RIOTING
078	540501	580715	YEMEN-ADEN BORDER INCIDENTS
281	540505	540506	PARAGUAYAN ARMY COUP
252	540618	540630	GUATEMALA INVADED BY REBELS
972	540723	540726	SAR A/C ATTACKED BY CPR A/C S. OF HAINAN.
098	540903	550903	CHINA OFF-SHORE ISLANDS (TACHENS) CRISIS
137	541021	620815	INDONESIAN-DUTCH WEST IRIAN DISPUTE
021	541101	620627	ALGERIAN WAR FOR INDEPENDENCE FROM FRANCE
145	541201	560801	LAOTIAN ROYALISTS VS. PATHET LAO
167	55	CONT.	PHILIPPINE HUKBALAHAP RESURGENCE
073	550101	CONT.	TUNISIAN YOUSSEFIST TERRORIST CAMPAIGN
275	550102	550116	PANAMANIAN PRESIDENT ASSASSINATED
230	550111	550122	COSTA RICA INVADED BY INSURGENTS FROM NICARAGUA
345	550211	550213	SIERRA LEONE FREETOWN RIOTING
045	550228	561106	ISRAEL-EGYPT BORDER INCIDENTS AND SINAI CAMPAIGN
112	550301	CONT.	INDIAN NAGALAND REBELLION
005	550401	590222	CYPRIOT EOKA TERRORIST CAMPAING FOR UNION WITH GREECE
077	550402	550407	YEMENI MILITARY REVOLT
304	5505	6207	CAMEROONS TERRORIST ACTIVITY
201	550616	550920	ARGENTINE ANTI-PERON REVOLTS AND OVERTHROW OF PERON
101	550625	550925	INDIAN INVASION OF GOA
027	550703	561029	BRITISH-EGYPTIAN SUEZ CANAL ZONE CONTROL DISPUTE
196	550818	550900	SUDAN ARMY MUTINY IN SOUTHERN SUDAN
353	550818	550901	SUDANESE ARMY MUTINY
062	551026	CONT.	OMANI REBELLION IN MUSCAT-OMAN
132	551115	560615	INDONESIAN FIGHTING AGAIST DAR-UL-ISLAM IN CELEBES
065	560101	CONT.	SUDANESE SOUTHERN REVOLT
197	560218	560222	SUDAN KOSTI INCIDENTS
354	560218	560222	SUDANESE KOSTI INCIDENT
059	560301	580301	MOROCCAN LIBERATION ARMY-FRENCH ARMY CLASHES
181	560301	560308	TIBETAN GOLOR TRIBAL RIOTING

TABLE A-2 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
049	560417	560524	DISORDERS AND THREATENED JORDANIAN COUP
202	560610	560611	ARGENTINE ABORTIVE PERONISTA UPRISING
014	560628	560701	POZNAN UPRISING IN POLAND
087	560721	561212	BURMESE-CHINESE BORDER CLASH
973	560823	560823	P4M SHOT DOWN BY CPR A/C OFF CHINA COAST.
099	561010	561015	CHINA-HONG KONG, KOWLOON RIOTING
008	561024	561112	HUNGARIAN REVOLUTION
028	561029	561106	EGYPTIAN-BRITISH AND FRENCH SUEZ WAR
185	561111	561114	NORTH VIETNAMESE RURAL UPRISING
260	561201	570801	HAITI ELECTIONS WON BY DUVALIER AFTER DISORDERLY CAMPAIGN
232	561202	581231	CUBAN CIVIL WAR CASTRO VS. BATISTA
134	561220	580522	INDONESIAN REVOLTS ON SUMATRA (DI)
092	57	CONT.	CAMBODIAN KHMER SEREI INSURGENCY
227	57	CONT.	COLOMBIAN CIVIL WAR AND TERRORISM
127	570302	610414	INDONESIAN CELEBES AND MOLUCCAS UPRISING (DI AND RSM)
050	570413	570501	JORDANIAN ARMY PLOT AND INTERNAL DISORDERS
266	570418	570503	HONDURAS-NICARAGUA BORDER DISPUTE
226	570510	570511	COLOMBIAN COUP
074	570531	610723	TUNISIA-FRANCE BIZERTE POST INDEPENDENCE CLASHES
974	570612	570616	4 USN A/C WANDER OVER CHINA MAINLAND RECEIVING AAA
068	570813	571020	SYRIA-TURKEY AND US DISPUTE
175	570916	570918	THAI COUP
975	571005	571011	DD POSITIONED TO COVER JORDAN ARMS DELIVERY
254	571022	571027	GUATEMALAN ELECTION VIOLENCE
059	571023	571026	MOROCCAN MEKNES RIOTING
060	571123	571208	MOROCCO-SPAIN IFNI DISPUTE
159	58	CONT.	PAKISTANI BALUCHISTAN TRIBAL UPRISING
177	58	CONT.	THAI SOUTHERN COMMUNIST TERRORIST INSURGENT ACTIVITY
289	580101	580124	VENEZUELAN COUP OUSTS JIMENEZ
976	580112	580117	DD DIV TRANSIT TESTS INDONESIAN TERR. WAT. CLAIM
977	5803	5803	SOVIET SS TRACKED FROM BALTIC TO ALEXANDRIA
055	580509	581015	CIVIL WAR AND US INTERVENTION IN LEBANON
978	580513	580514	MOBS THREATEN US VICE PRES IN VENEZUELA
095	580522	580722	LANGUAGE RIOTS ON CEYLON
135	580523	610823	INDONESIAN SUMATRA GUERRILLA ACTIVITY (PRRI)
113	580601	CONT.	INDIAN KERALA UPRISING
037	580714	580715	IRAQI ARMY REVOLT
979	580715	580517	USMC A/C DETAINE ON CUBAN OVERFLIGHT
980	5808	5808	DD ESCORT TURKISH UN TROOPS DURING SUEZ TRANSIT
203	580817	600327	ARGENTINE PERONISTA DISORDERS
100	580823	581103	CHINA OFF-SHORE ISLANDS (QUEMOY-MATSU) CRISIS
051	580901	581231	JORDANIAN INTERNAL UNREST
290	580907	580908	VENEZUELAN ABORTIVE INSURRECTION
080	581015	590201	MOROCCO UNREST IN RIF AND MIDDLE ATLAS

TABLE A-2 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
003	581110	590927	INCREASED BERLIN TENSION, INCIDENTS, AND CONFERENCE
088	59	CONT.	BURMESE SHAN STATE REBELLION
309	590104	590107	CONGOLESE ANTI-COLONIAL RIOTING
337	590211	590325	NYASALAND-RHODESIA DISTURBANCES
368	590215	590217	CAMBODIAN REVOLT OF GENERAL DAP CHHUON
981	590226	590226	NORTH ATLANTIC CABLE INCIDENT
366	590307	590310	IRAQI ABORTIVE MILITARY REVOLT OF COL. SHAWWAF
182	590317	590322	TIBETAN ANTI-CHINESE REVOLT
233	5904	CONT.	CUBAN COUNTER-REVOLUTIONARY ACTIVITY
214	590419	590420	BOLIVIAN SOCIALIST UPRISING IN LA PAZ
276	590426	590502	PANAMA INVADED BY CUBAN SPONSORED INSURGENT BAND
982	590510	590524	SOVIET SNOOPER IN LANTFLT EXERCISES
146	590512	591016	LAOTIAN GUERRILLA ACTIVITY NEAR DRV BORDER
271	590601	590612	NICARAGUA INVADED BY CASTROITE INSURGENTS
237	590614	590623	DOMINICAN REPUBLIC INVADED BY CASTROITE GUERRILLAS
983	590616	590616	P4M ATTACKED BY CPR A/C OFF KOREA
305	590627	611001	CAMEROONS BAMILEKE TERRORISM
367	590714	590718	IRAQI MASSACRE AT KIRKUK
261	590813	590906	HAITI INVADED BY CASTROITE GUERRILLAS
114	590825	591125	INDIA-CHINA LONGJU AND LADAKH INCIDENTS
310	591029	591031	CONGOLESE NATIONALIST RIOTING
342	591101	591115	RWANDAN HATA REVOLT AND TRIBAL VIOLENCE
277	591103	591129	PANAMANIAN ANTI-US DEMONSTRATIONS AND RIOTING
984	5912	5912	SOVIET SS TRACKED FROM BALTIC TO VLONE BAY, ALBANIA
184	591201	CONT.	REPUBLIC OF VIETNAM VS. VIET CONG GUERRILLAS
311	591207	600118	CONGO LULUA-BALUBA TRIBAL DISORDERS
147	591230	600107	LAOTIAN ABORTIVE COUP
090	60	CONT.	BURMESE GOVERNMENT VS KACHIN INDEPENDENCE ARMY
198	60	6105	NORTH VIETNAMESE THAI-MEO AUTONOMOUS REGION INSURRECTION
359	600117	600126	UGANDAN RIOTS IN BUKEDI
985	600130	600224	GOLFO NUEVO SUBMARINE INCIDENT
142	600315	600426	REPUBLIC OF KOREA POST ELECTION RIOTS
291	600420	600422	VENEZUELAN ATTEMPTED RIGHTIST COUP
987	6005	6005	CUBAN CG CRAFT CHALLENGE OF USS NORFOLK
086	6005	6006	BURMESE KMT-CHINESE COMMUNIST FIGHTING
986	600508	600508	CUBAN SC ORIENTE VS. USS SEA POACHER
016	600521	600527	TURKISH MILITARY COUP OUSTS MENDERES
292	600624	600625	VENEZUELAN PRESIDENTIAL ASSASSINATION AND COUP FAIL
161	600628	600629	NEPAL-CHINA BORDER INCIDENT
312	600705	600730	CONGOLESE ARMY MUTINY
313	600712	630301	CONGOLESE KATANGA AND KASAI SECESSION
340	600720	600727	RHODESIAN SALISBURY AND BULAWAYO RIOTS
148	600809	620629	LAOTIAN CIVIL WAR WITH RIGHTISTS VS NEUTRALIST VS PL
052	600829	600830	JORDANIAN PRIME MINISTER MAJALI ASSASSINATED

TABLE A-2 (continued)

I.D. No.	Start Date	Stop Date	Conflict Short Title
082	600901	610501	AFGHANISTAN-PAKISTAN BORDER INCIDENTS
293	601024	601130	VENEZUELAN STUDENT DISORDERS
272	601109	601114	NICARAGUA INVADED BY CASTROITE INSURGENTS
186	601111	601113	SOUTH VIETNAMESE ATTEMPTED COUP
255	601113	601117	GUATEMALAN ABORTIVE REVOLT
030	601213	601217	ATTEMPTED COUP IN ETHIOPIA
988	610123	610203	SANTA MARIA INCIDENT
301	610201	CONT.	ANGOLAN ANTI-PROTUGUESE INSURRECTION
160	610301	620301	NEPALESE CONGRESS REBEL ACTIVITY
038	610315	CONT.	KURDISH REBELLION IN IRAQ
234	610417	610421	CUBA INVASION BY ANTI-CASTRO REBELS
143	610516	610517	REPUBLIC OF KOREA MILITARY COUP
238	610530	620119	DOMINICAN REPUBLIC DICTATOR ASSASSINATION AND DISORDERS
364	610601	610607	ZANZIBAR ELECTION RIOTS
054	610630	610730	KUWAIT THREATENED BY IRAQI MOBILIZATION AT BORDER
004	610812	620508	BERLIN WALL CRISIS
115	611003	611013	INDIAN COMMUNAL RIOTING
245	611103	611109	ECUADORIAN PRESIDENT OUSTED BY VIOLENT DEMONSTRATIONS
295	6112	CONT.	VENEZUELAN FALN TERRORIST ACTIVITY
319	611214	611217	ETHIOPIAN ABORTIVE COUP
102	611218	611221	INDIAN INVASION AND CAPTURE OF GOA
056	611231	620101	ABORTIVE LEBANESE COUP
178	62	CONT.	THAI NORTHEAST PROVINCES INSURGENT ACTIVITY
235	62	CONT.	CUBA-UNITED STATES DISPUTE OVER GUANTANAMO NAVAL BASE
283	620115	620306	PERUVIAN INSURRECTION
256	620121	620124	GUATEMALA INFILTRTION FROM HONDURAS
221	620216	620217	BRITISH GUIANA RIOTING IN GEORGETOWN
989	620218	620218	SOVIET MIG-17 INTERCEPT P2V IN GULF OF TARTARY
017	620222	620222	ABORTIVE REVOLT BY ANKARA MILITARY ACADEMY
046	620316	620319	ISRAEL-SYRIA BORDER INCIDENTS
069	620328	620403	SYRIAN ABORTIVE COUP
179	6205	6205	THAI BORDER CROSSED BY ROUTED LAOTIAN TROOPS
296	620504	620609	VENEZUELAN LEFTIST NAVAL REVOLTS
990	620703	620703	SOVIET MIG-17 INTERCEPT P2V IN GULF OF TARTARY
338	620715	621101	NYASALAND (ZAMBIA-MALAWI) DISTURBANCES
351	620721	630207	SOUTH AFRICAN RACIAL TERRORISM AND SABOTAGE
022	620725	6407	ALGERIAN POST INDEPENDENCE POWER STRUGGLE
262	6208	6209	HAITIAN UNREST
323	620802	6301	GHANA TERRORIST ACTIVITY
206	620918	620922	ARGENTINE ARMY REVOLT
079	620926	CONT.	YEMENI CIVIL WAR (REVOLT FOLLOWED BY GUERRILLA WAR)
991	620930	620930	CUBAN A/C INTERCEPT S2F NORTH OF CUBA
992	620931	620931	CUBAN VESSELS FIRE ON US PATROL A/C
116	621020	621122	INDIA-CHINA

TABLE A-2 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
020	621022	CONT.	ANTI-BRITISH INSURRECTION AND TERRORISM IN ADEN
236	621022	621120	CUBAN MISSILE CRISIS
150	621115	6304	LAOTIAN PATHET LAO ACTIVITY VS NEUTRALISTS
155	6212	CONT.	MALAYSIAN INSURGENT ACTIVITY (CTO AND CCO)
302	621208	621218	BRUNEI ANTI-BRITISH REVOLT
344	621217	621219	SENEGAL ATTEMPTED CENSURE OF PREMIER
357	630113	630114	TOGO COUP
039	630208	630209	KASSEM OVERTHROWN IN IRAQI COUP
994	630212	630227	VENEZUELAN MS NAZOATEGUI HIJACKED
070	630308	630309	ABORTIVE SYRIAN ANTI-B-ATHIST COUP
993	630309	630321	SURVEILLANCE DURING PRESIDENTS COSTA RICAN VISIT
995	630328	630328	CUBAN A/C FIRE ON SS FLORIDAN IN SANTARAN CHANNEL
207	630402	630407	ARGENTINE ANTI-PERONISTA ABORTIVE REVOLT
157	630412	CONT.	MALAYSIA-INDONESIA CONFRONTATION
053	630420	630425	JORDANIAN INTERNAL UNREST
223	630420	630708	BRITISH GUIANA RIOTING AND GENERAL
258	6305	CONT.	GUATEMALAN GUERRILLA ACTIVITY
263	6305	6306	HAITIAN UNREST
187	630505	631020	SOUTH VIETNAMESE URBAN DISORDERS
018	630520	630521	ABORTIVE REVOLT BY ANKARA MILITARY ACADEMY
036	630604	630608	IRANIAN TRIBAL UPRISING IN FARS PROVINCE
031	6307	CONT.	OGEADEN INSURGENCY IN ETHIOPIA
339	6307	CONT.	PORTUGUESE GUINEA ANTI-COLONIAL INSURGENCY
246	630711	630712	ECUADORIAN COUP OVERTHROWS AROSEMENA
273	630720	630920	NICARAGUAN FSLN INSURGENT ACTIVITY
264	630805	630808	HAITIAN REBELS INVADE FROM DOMINICAN REPUBLIC
316	630814	630815	CONGO REPUBLIC COUP OUST YOULOW
331	6309	6412	MALI TUAREG TRIBAL REBELLION
239	630925	630927	DOMINICAN REPUBLIC MILITARY COUP
023	630929	6410	ALGERIAN BERBER (KABYLE) INSURRECTION
024	631003	631104	ALGERIA-MOROCCO BORDER DISPUTE
317	631020	631115	DAHOMEY MILITARY COUP
061	631025	631025	MOROCCAN ATTEMPTED COUP
152	6311	CONT.	LAOTIAN CIVIL WAR RENEWED
188	631101	631102	SOUTH VIETNAMESE MILITARY COUP OVERTHROWS DIEM
327	631113	CONT.	KENYA-SOMALIA BORDER INCIDENTS
040	631118	631120	IRAQI MILITARY OUSTS BA-THIST GOVERNMENT
240	631129	631231	DOMINICAN REPUBLIC COMMUNIST GUERRILLA ACTIVITY
006	631221	CONT.	GREEK-TURKISH CYPRIOT CIVIL WAR
343	631221	640215	RWANDAN ATTEMPTED TUTSI COUNTER-REVOLUTION
270	6401	6401	MEXICO BOUND CUBAN ARMS RUNNER REPORTED
117	640101	640401	INDIAN-PAKISTANI COMMUNAL RIOTING
278	640109	640114	PANAMA CANAL ZONE FLAG RIOTING
320	640111	640331	ETHIOPIA-SOMALIA BORDER DISPUTE

TABLE A-2 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
365	640112	640113	ZANZIBAR REVOLT
356	640120	640124	TANGANYIKAN ARMY MUTINY
360	640123	640124	UGANDAN ARMY MUTINY
328	640123	640124	KENYA ARMY MUTINY
321	640217	640220	GABON ABORTIVE COUP
071	640223	640504	SYRIAN PRO-UAR UPRISING
208	640228	640628	ARGENTINE PERONISTA DISORDERS
224	640301	CONT.	BRITISH GUIANA RACIAL AND POLTICAL
093	640310	CONT.	CAMBODIA-SOUTH VIETNAM BORDER INCIDENTS
219	640331	640402	BRAZILIAN MILITARY COUP
279	6404	6404	PANAMA ELECTIONS AND POTENTIAL DISORDERS
151	640419	640423	LAOTIAN RIGHTIST MILITARY COUP
314	6405	CONT.	CONGOLESE TRIBAL WARFARE
363	6405	6409	ZAMBIAN LUMPA CHURCH UPRISING
047	640615	CONT.	ISRAEL-SYRIA BORDER INCIDENTS
996	640625	640716	DISPUTE BETWEEN MASTER OF SS SISTER KATINGO AND USSR
066	640700	CONT.	SUDAN SUPPORTED LIBERATION GROUPS IN ERITREA
156	640721	640908	MALAYSIAN COMMUNAL RIOTING IN SINGAPORE
265	6408	6409	HAITIAN INVASION THREAT
332	6408	CONT.	MOZAMBIQUE INSURGENT ACTIVITY
190	640802	640805	GULF OF TONKIN INCIDENT AND REPRISAL
997	640829	640829	ALLEGED HARASSMENT OF SOVIET SS PURGA BY BURTON IS.
998	641005	641020	KURIL ISLAND CRUISE OF USS UTE
333	641014	CONT.	NIGER SAWABA INSURGENCY
064	641021	641030	SUDAN KHARTOUM UPRISING
215	641103	641105	BOLIVIAN MILITARY COUP
119	6412	CONT.	INDIAN MIZO TRIBAL INSURRECTION
307	650101	650101	CENTRAL AFRICAN REPUBLIC MILITARY COUP
153	650131	650203	LAOTIAN ABORTIVE RIGHTIST COUP
330	650212	650512	MALAWI INSURGENT ACTIVITY
999	650221	650304	SURVEILLANCE OF SOVIET SS EAST OF TAIWAN
111	650409	650507	INDIA-PAKISTAN RANN OF KUTCH FIGHTING
242	650425	CONT.	DOMINICAN REPUBLIC INSURRECTION AND CIVIL WAR
216	650517	650526	BOLIVIAN ARMY VS. MINERS MILITIA
025	650619	650625	BEN BELLA OVERTHROWN BY COUP IN ALGERIA
032	6507	CONT.	SOUTHERN PROVINCE INSURGENCY IN ETHIOPIA
120	650805	650923	INDIA-PAKISTAN KASHMIR
308	6510	CONT.	CHAD INSURGENT ACTIVITY
138	651001	CONT.	INDONESIAN ABORTIVE COUP AND ANTI-PKI REACTION
341	651111	CONT.	RHODESIAN AFRICAN NATIONALIST TERRORISM AND SABOTAGE
318	651129	651223	DAHOMEY MILITARY COUP
335	660115	660117	NIGERIAN MILITARY COUP

TABLE A-2 (continued)

I. D. No.	Start Date	Stop Date	Conflict Short Title
324	660224	660225	GHANA MILITARY COUP OUSTS NKRUMAH
361	660523	660525	UGANDAN SEIZUE OF POWER BY OBOTE
336	660729	CONT.	NIGERIAN MILITARY COUP AND TRIBAL VIOLENCE
303	661019	661020	BURUNDI TRIBAL INSURRECTION
285	6506	CONT.	PERUVIAN MIR INSURGENT ACTIVITY
362	660101	660104	UPPER VOLTA MILITARY COUP
315	660723	CONT.	CONGOLESE KISANGI MILITARY UPRISING

TABLE A-3

LESS DEVELOPED COUNTRIES

I.D. No.	Country
1	Algeria
2	Angola
3	Burundi (a)
4	Cameroon
5	Central African Republic
6	Chad
7	Congo (B)
8	Congo (L)
9	Dahomey
10	Ethiopia
11	Federation of Rhodesia and Nyasaland (b)
12	Gabon
13	Gambia
14	Ghana
15	Guinea
16	Ivory Coast
17	Kenya
18	Liberia
19	Malagasy Republic
20	Malawi (c)
21	Mali
22	Mauritania
23	Morocco
24	Mozambique
25	Niger
26	Nigeria
27	Portuguese Guinea
28	Rhodesia (d)
29	Rwanda (a)
30	Senegal
31	Sierra Leone
32	Somali Republic
33	South Africa
34	Sudan
35	Tanzania (e)
36	Togo
37	Tunisia
38	Uganda
39	Upper Volta
40	Zambia (f)
41	Zanzibar (g)
42	Ruanda-Urundi (h)
43	Afghanistan
44	Burma
46	Cambodia
47	Ceylon
48	India
49	Indonesia
50	Laos
51	Malaysia
52	Nepal
53	North Vietnam
54	Pakistan
55	Philippines
56	South Vietnam
57	Thailand
58	Cyprus
59	Iran
60	Iraq
61	Israel
62	Jordan
63	Lebanon
64	Libya
65	Saudi Arabia
66	Syria
67	Turkey
68	United Arab Republic (Egypt)
69	Yemen
70	Argentina
71	Bolivia
72	Brazil

See page A-26 for notes

TABLE A-3 (cont.)

I.D. No.	Country	I.D. No.	Country
73	Chile	82	Haiti
74	Columbia	83	Honduras
75	Costa Rica	84	Mexico
76	Cuba	85	Nicaragua
77	Dominican Republic	86	Panama
78	Ecuador	87	Paraguay
79	El Salvador	88	Peru
80	Guatemala	89	Uruguay
81	Guyana	90	Venezuala

Data are recorded only for countries which were identifiable political entities in a particular year; e.g., no data is listed for ID's 3 and 29 (Burundi and Rwanda) until 1962 when Ruanda-Urundi separated into these two independent states. Thus, data is listed for ID #42, Ruanda-Urundi, only through 1961.

a. Was a part of Ruanda-Urundi until 1962 when it became an independent state.
b. Did not exist after December 1963 when elements became individual states.
c. Formerly Nyasaland and part of the Federation until 1964 when it became the independent state of Malawi.
d. A part of the Federation of Rhodesia and Nyasaland until December 1963, Rhodesia declared its independence from Britain on November 11, 1965.
e. Tanganyika until 1964 when it merged with Zanzibar and became Tanzania. Data for Tanganyika is recorded under this name prior to 1964.
f. Formerly Northern Rhodesia and part of the Federation until 1964 when it became the independent state of Zambia.
g. Did not exist after 1963 when it merged with Tanganyika to become Tanzania.
h. Did not exist after 1961 when elements (Burundi and Rwanda) became independent states.

APPENDIX B

TECHNICAL APPENDIX

INTRODUCTION

This appendix contains definitions of analytical terms and processes used in Volume I of the report and examples of the most important factor analyses performed in the course of the investigation. For a deeper understanding of factor analysis as a model and as a method, the reader should consult references listed on page B-14. The examples in Part II are from the various analyses described in Table B-1. They are reproductions of computer output for selected factor matrices and tables of eigenvalues. Space limitations and the marginal utility of some of the analyses are the reasons for displaying only part of the outputs.

The data decks described in Appendix A of this volume are available from Code 4020, U.S. Naval Research Laboratory on a basis of need-to-know. Table B-1 contains briefs of all the operations performed and the parameters used in 15 factor analyses. Factor scores on warfare, naval operations, and foreign influence are discussed and illustrated in Volume I, Sections III, IV and V.

I. DEFINITION AND DESCRIPTION OF TERMS AND TECHNIQUES INVOLVED IN FACTOR ANALYSIS

1. Factor Analysis - A type of analysis which groups a number of variables describing a phenomenon into underlying dimensions on the basis of the closeness of their intercorrelation. The variables allocated to a dimension are those most nearly unrelated to the variables allocated to the other dimensions. (Adelman and Morris, 1967, p. 132.) Factor analysis is useful for reducing a large number of variables to a few workable categories. It has allowed psychologists, for instance, to sort the results of types of tests administered to humans into factors (dimensions) reflecting verbal skills, motor skills, memory and other "intelligence" dimensions; thus it helped show that "intelligence" consists of many mainly separate facets. The method has been found useful outside psychology as well, in studies of conflict behavior, comparisons of nations, voting behavior, and judicial decisions.

Probably the most common form of factor analysis is by the "principle axes" technique, which represents the original set of variables in terms of a number of factors determined in sequence. At each successive stage the factor produced accounts for a maximum of the remaining variance (judged by squaring the correlation coefficient between the variables interrelated enough to be represented on that factor). (Harman, 1967, p. 5) Each variable's relationship to all the other variables, and its own variance, are "explained" by the several underlying factors.

The factor model employed here, the component model, states that each variable can be expressed as a linear composite of the factors, as follows:

$$x_i = a_1 F_1 + a F_2 + \ldots a_m F_m$$

where x_i's are the variables, a's are factor loadings and F's the factors. By squaring the factor loadings, one may write a statement from a factor analysis, such as,

74% of Variance in the Level of Naval Readiness Measures	=	35% of Large Scale Naval Intervention for Conflict Control (Factor I)	+	19% East ..... West Tension and Deterrence in Europe (Factor II)

When used in this way, the factor model is employed to explain the variation in a variable of interest in terms of the linear combination of causal weights attached to the set of factors which have been derived from the original data. Factor analysis can thus be interpreted as the regression of observed X's (variables) upon the unobserved, but underlying causal factors. It should be noted that the communality of a variable with all the factors extracted is usually less than unity. The reason for this is that empirical data contains some variation due to random error, and the factors do not account for this error.

The variables whose intercorrelations closely cluster on a factor are sometimes viewed as being "caused" by that factor (Banks and Gregg, 1965, p. 604), especially if the patterns closely conform to hypotheses about the relationships of the variables. Hence, variables such as assassinations, violent protests, and riots, when correlated highly on a single factor,

might reflect an underlying cause: "violent political aggression." Factor analysis is also useful as a descriptive and analytical tool where little general information about basic underlying structure of a phenomenon has been obtained (Thurstone, 1947, pp. 55-56).

2. Factor Loading - The correlation of a variable with an orthogonal factor. If factors are oblique, a loading is the regression coefficient of a variable on a factor.

3. Factor Scores - These are the value each observation (individual person, nation-state, or any other unit of analysis) has on each factor extracted from the data. Scores might indicate, for instance, whether a country is high or low on a "war" behavior dimension. Factor scores reflect the scores of a case on the variables correlating (loading) most highly (positive or negative) with that factor. They are calculated by assigning numerical weights to each variable in the factor proportionally to its involvement in the pattern. Variables not at all closely involved would be weighted near zero. The score for an individual or case on the factor is determined by multiplying the case's score on each variable by the weight of that variable. The sum of these weight-times-data score products for all the variables yields the factor score. (Rummel, 1967, p. 469.)

4. Factor Rotations - These are attempts to adjust the factors so that variables with moderate loadings on one or more factors will load more strongly on only one factor. For parsimony we would expect a variable to load highly on only one factor, but this is not always the case. Rotations are illustrated graphically in the figures below.*

Figures B-1(a), (b) and (c) show the unrotated solution. Figure B-1(a) uses vectors to represent 8 hypothetical variables plotted according to their data for approximately 50 cases. As shown in Figure B-1(b) the first factor falls between the two clusters of variables labeled I and II. This factor was fitted to maximally reflect the variation of all eight variables and is thus the most general solution. Factor 2 is fitted similarly in Figure B-1(c), and is 90° removed from F_1 to indicate that the two factors are unrelated (uncorrelated or "orthogonal"). The dotted lines indicate the loading for each variable on each factor.

* All graphic illustrations are those of Rummel, 1967.

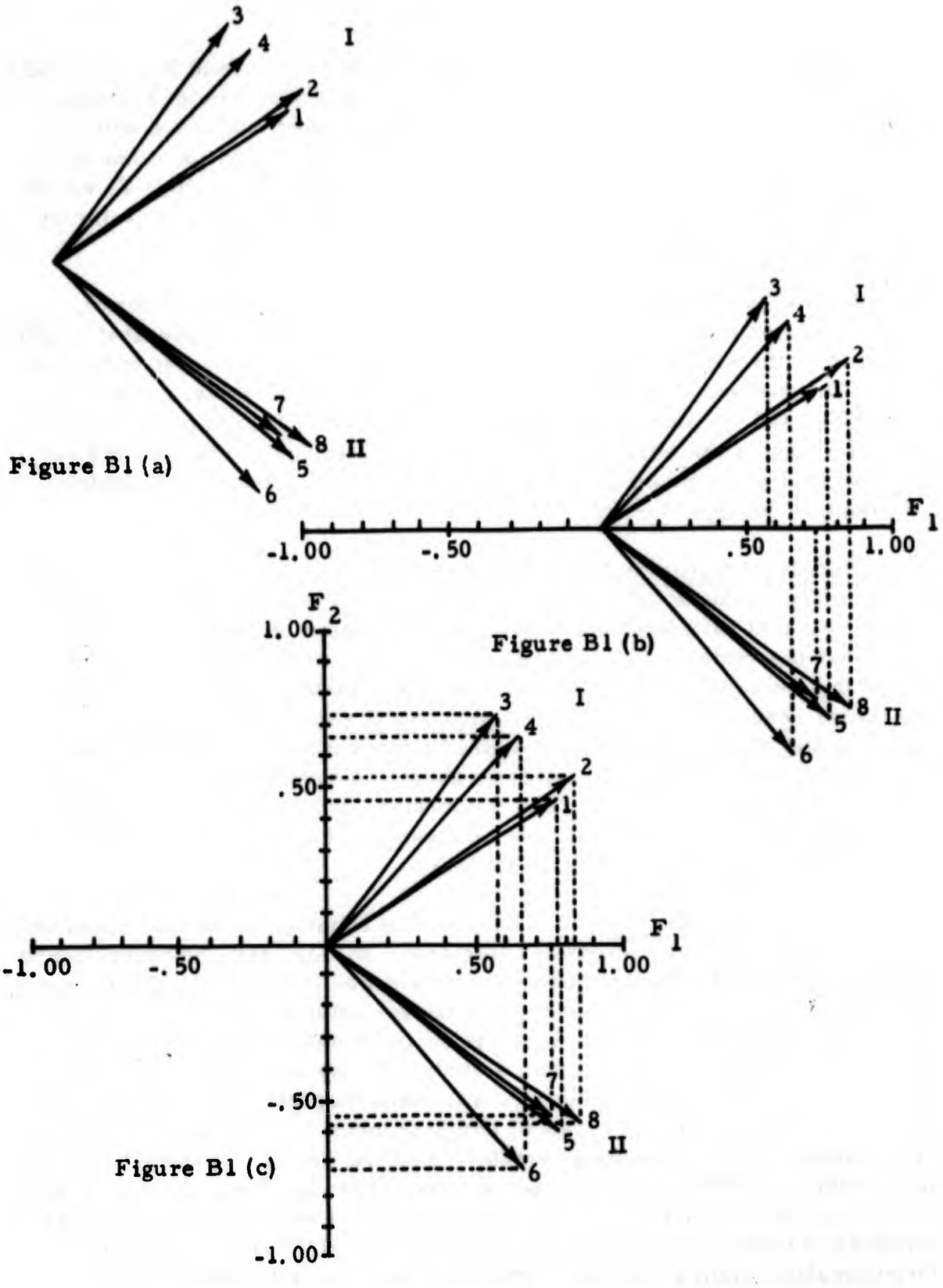


Figure B-1

UNROTATED FACTORS: VECTOR DIAGRAM

Figures B-2, and B-3 illustrate the rotation of F_1 and F_2, to orthogonal (see definition below) and oblique (see paragraph 7 below) displacements. In both figures, each factor has been rotated until each defines a distinct cluster of interrelated variables. The new factor locations are labeled F_1* and F_2*, and remain unrelated (at 90°) in Figure B-2, while Figure B-3 allows the possibility that the "best fit" might entail some relationship between F_1 and F_2 at less than 90°.

"Rotations" are possible because there is an infinite number of possible factor patterns (based on the same set of correlations) that might account for the data. Rotations are used to clarify the meaning of the factors. The number of factors should be less than the original number of variables, and the meaning of the factors, in terms of high positive and negative loading variables, should be clear. The end product should be several well-pronounced and easily distinguishable groups of variables. (Harman, 1967, pp. 95-96)

5. Unrotated factor matrix - A factor matrix, in general, is a listing of the variables in the study and their loadings on (correlations with) each of the factors that have been extracted. High positive or negative loadings mean that the variable involved is highly related to the other variables which show high loading values. An unrotated factor matrix means that the initial result of the "principle components" (see definition of factor analysis and illustrations above) method is presented. This is the most general solution, since each factor is chosen to maximize the variance explained in all the variables. Thus the meaning of factors, with many variables loading highly, is sometimes ambiguous. Rotations are performed to more clearly discriminate among factors.

6. Orthogonal factor matrix - This is also a listing of variables and their loadings on respective dimensions (factors). In this case, however, there is specification that the factor analysis rotation was orthogonal. This means that the factors produced were not themselves intercorrelated (were geometrically at 90°). There is no relationship between the dimensions posited in the solution. Thus, if from a study of many international conflict variables two factors are produced, one containing variables such as "protests," "denunciations," "recall of ambassadores," "indictment at UN," etc., and the other containing variables such as "border fighting," "troop movements," "battles involving more than 100 troops," etc., there is an indication that two distinct and unrelated forms of conflict exist. The first might be termed "verbal conflict," and the second "military conflict." Orthogonality implies that the researcher finds these to be unrelated

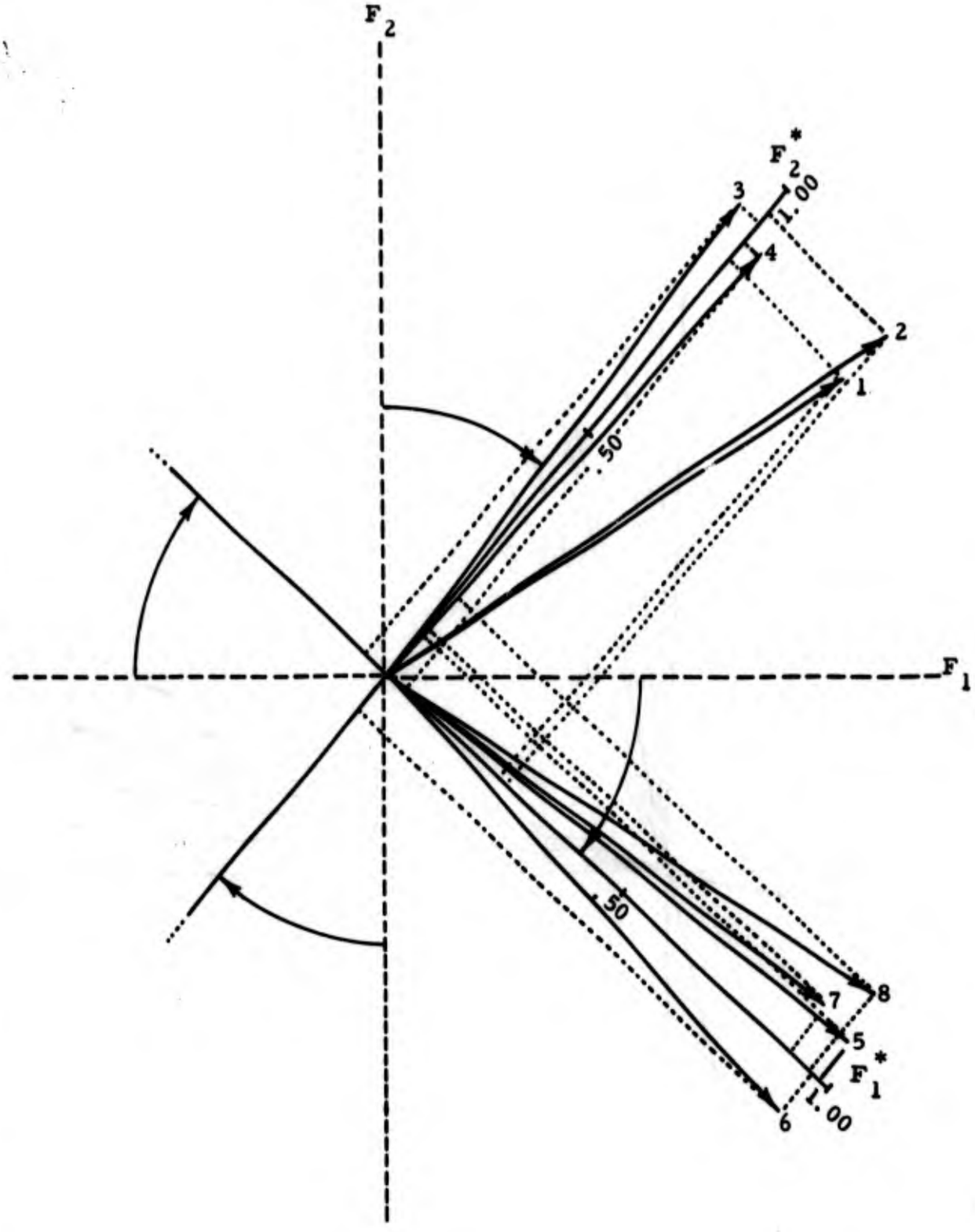


Figure B-2
ORTHOGONALLY ROTATED FACTORS: VECTOR DIAGRAM

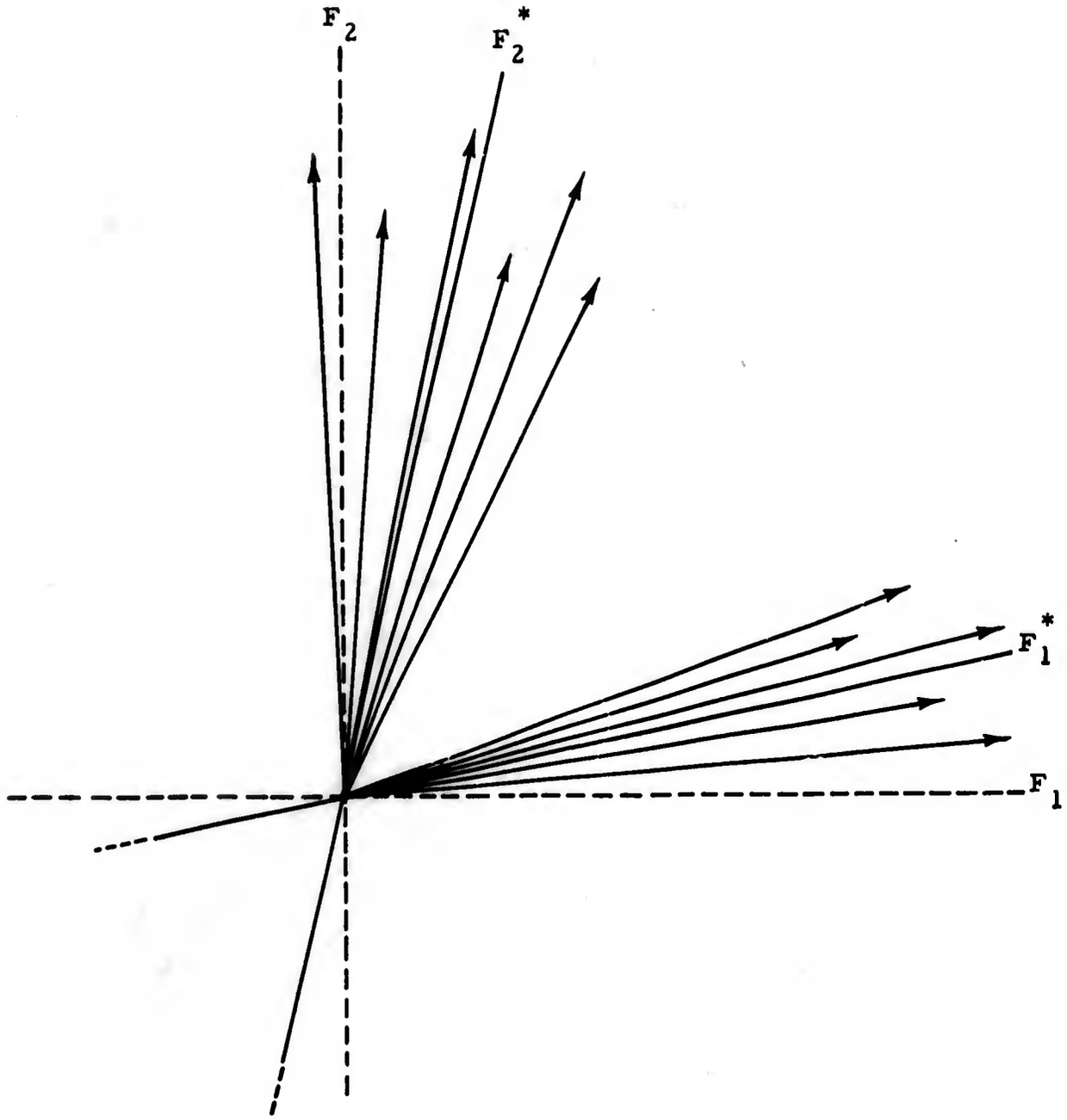


Figure B-3

OBLIQUE ROTATED FACTORS: VECTOR DIAGRAM

phenomena. An example of an orthogonally rotated factor matrix with accompanying tables is included in Figure B-4.

7. Oblique factor matrix - This is a table in the same format as that for orthogonal factors. The only distinction here is that there is no condition imposed so that the factors produced by the analysis are unrelated to each other. Instead, the original principle components solution is rotated (see definition above) to a new factor pattern, oblique, yielding the factors upon which variables load most strongly without requiring that these factors be orthogonal. Many social phenomena cannot be completely separated into uncorrelated categories. In our previous example, we might speculate and wish to test the possibility that "verbal conflict" is related to (perhaps sows the seeds for) "military conflict". An oblique solution allows us to test this by showing whether variables are more distinctly related to certain dimensions when we relax the assumption that the dimensions themselves are completely unrelated. If the variables do show higher loadings, we have a "better fitting" solution--one that simplifies the data more than the orthogonal solution by allowing specification of the factors constituted by the variables, the number of factors a given variable relates to, and the total interrelationships between the factors.

8. Factor correlations - Factor correlations measure the degree of interrelationship between oblique factors. These are normally presented as a table (matrix) of correlation coefficients between factors (equivalent to the cosines of angles between the factors--see illustrations under "factor rotations"). The factors, or underlying dimensions of the larger group of variables, in effect, become variables themselves, and we can specify the strength of their interrelations by finding the correlation between each pair. An example of such a matrix for an oblique rotation is presented in Figure B-5.

9. Communality - The communality of a variable is the percentage of its variance held in common with all the other variables which load with it on factors in the study. It is the equivalent of the multiple correlation coefficient for that variable. For example, if a foreign conflict variable has a communality of .55, this says that 55% of the variation in foreign conflict behavior for the nations in the study can be accounted for with a knowledge of nation values on the factors. (i.e., on the other factor patterns of variables which load with foreign conflict). (Rummel, 1967, p. 465) This relationship may be represented algebraically as:

$h^2_x = a_1^2 + a_2^2 + \ldots + a_n^2$, where h^2 is the communality of variable x and the a's are the factor loadings of that variable on all the factors.

TABLE B-1
ORTHOGONALLY ROTATED FACTOR MATRIX

Sums of the columns of squared factor loadings for each rotated factor.

FACTORS

	FACTOR NUMBER	1	2*	3*	4	5	6*	7*
SUM SQUARES OVER VARIABLES		7.672	8.738	6.108	7.352	3.942	4.225	3.822

The proportion of variation of each variable involved in the factors i.e., The row sum of squared factor loadings

Factor Loadings: Degree and Direction of Correlation of the Variables with each factor.

VARIABLE NO.	NAME	COMMUNALITY 7 FACTORS							
	Variables								
1	US INV	0.523	0.189	-0.353	0.140	0.192	0.513	0.014	-0.207
2	SU INV	0.679	0.208	-0.436	0.004	0.516	0.117	0.245	-0.325
3	CC INV	0.838	0.291	-0.597	-0.126	0.040	0.014	0.037	-0.615
4	OC INV	0.656	-0.167	-0.522	-0.283	0.307	0.373	-0.202	0.032
5	UN INV	0.654	0.114	-0.343	-0.707	0.099	-0.095	-0.057	0.041
6	TL.INV	0.693	0.040	-0.800	-0.019	0.150	0.124	-0.055	-0.104
7	SE.INV	0.443	0.285	-0.390	-0.432	-0.029	0.138	-0.011	-0.056
8	GR.INV	0.488	0.063	-0.106	-0.375	-0.498	0.064	-0.259	0.117
9	AI.INV	0.662	0.356	-0.434	-0.581	-0.072	0.037	0.046	-0.021
10	DUR.	0.732	-0.139	-0.808	-0.179	-0.138	-0.017	0.061	0.074
11	NO.DE.	0.891	-0.025	-0.923	-0.071	-0.100	-0.149	-0.031	-0.022
12	DE/POP	0.897	0.015	-0.919	-0.094	-0.145	-0.134	-0.053	0.026
13	DE/DAY	0.725	0.272	-0.792	-0.075	-0.080	-0.078	-0.053	0.053
14	COL.	0.396	0.132	-0.294	-0.081	-0.033	-0.379	0.290	0.237
15	E-W	0.678	0.013	-0.471	-0.339	0.501	0.124	0.090	-0.257
16	L.AMER	0.701	-0.143	0.249	0.399	-0.358	0.517	-0.127	0.217
17	EUR.	0.708	-0.266	0.144	-0.423	0.641	-0.072	-0.009	0.145
18	M.EAST	0.224	0.171	0.093	0.047	0.128	-0.157	0.250	0.284
19	ASIA	0.870	0.338	0.113	-0.143	0.011	0.089	0.368	-0.761
20	SEASIA	0.740	0.008	-0.690	-0.044	0.035	-0.365	-0.321	-0.154
21	AFR.	0.274	-0.026	0.152	-0.141	-0.344	-0.315	0.106	-0.044
22	DIS.	0.493	0.205	-0.310	-0.222	-0.503	0.070	-0.130	0.176
23	FAV.US	0.604	0.112	0.389	0.575	-0.038	0.069	-0.090	0.308
24	UNFAV.	0.688	-0.026	-0.508	-0.538	0.130	-0.042	0.019	-0.347
25	MILVIC	0.381	0.172	0.210	0.063	-0.503	-0.200	0.065	-0.077
26	STOP	0.234	0.108	0.128	0.136	-0.232	-0.204	0.296	-0.071
27	PRE.	0.770	-0.437	-0.071	0.531	0.085	0.111	0.481	0.204
28	REA.	0.770	0.437	0.071	-0.531	-0.085	-0.111	-0.481	-0.204
29	STAB.	0.250	-0.423	0.113	-0.026	0.019	-0.091	0.217	-0.041
30	DETER.	0.359	0.115	-0.063	-0.368	0.337	0.211	0.179	0.125
31	CONCTL	0.674	0.693	-0.213	-0.071	0.066	0.267	-0.219	-0.138
32	TH.PER	0.624	0.273	-0.234	-0.362	0.555	0.111	0.186	-0.094
33	EVAC.	0.291	0.412	0.077	-0.066	-0.317	-0.102	-0.026	0.011
34	ANT.RE	0.498	0.255	0.260	0.038	0.539	-0.082	-0.245	0.032
35	S OF F	0.409	0.390	0.125	-0.235	0.390	0.124	-0.135	-0.009
36	INTV	0.567	0.544	-0.272	0.029	0.106	0.208	-0.353	-0.132
37	INTP	0.699	-0.190	0.214	-0.706	0.289	0.106	-0.115	-0.107
38	SURV	0.557	0.020	-0.004	-0.183	0.031	0.692	0.190	0.082
39	MIL.AS	0.466	0.184	-0.232	0.015	0.015	-0.138	0.050	-0.596
40	COMBAT	0.612	0.591	-0.266	0.001	0.153	0.303	-0.248	-0.118

*Reverse signs of factor loadings for proper interpretation

TABLE B-1 (continued)
ORTHOGONALLY ROTATED FACTOR MATRIX

ROTATED FACTOR MATRIX

			FACTORS						
		FACTOR NUMBER	1	2*	3*	4	5	6*	7*
SUM SQUARES OVER VARIABLES			7.672	8.738	6.108	7.352	3.942	4.225	3.822
VARIABLE NO.	NAME	COMMUNALITY 7 FACTORS							
41	RE.MEA	0.741	0.589	-0.056	0.002	0.434	-0.093	0.213	0.386
42	TERROR	0.620	0.086	-0.117	0.064	-0.110	-0.130	-0.746	0.101
43	SABOT.	0.674	0.068	-0.150	0.132	-0.026	-0.111	-0.780	0.094
44	UNC.GR	0.569	-0.084	-0.142	-0.226	-0.091	-0.008	-0.648	0.251
45	REG.GR	0.736	0.307	0.147	-0.096	0.723	-0.089	0.136	-0.249
46	NUC.FR	0.658	0.487	-0.002	0.054	0.414	-0.032	0.250	0.428
47	A/C	0.760	0.394	0.151	-0.105	0.719	0.120	0.196	-0.017
48	AAA	0.770	0.277	-0.066	-0.171	0.764	0.107	-0.056	-0.248
49	SML.CF	0.418	0.175	-0.104	-0.015	0.442	0.279	0.091	-0.309
50	MED.CB	0.650	0.158	0.128	-0.305	0.708	-0.009	0.075	-0.092
51	LGE.CB	0.367	0.119	0.094	0.127	0.447	-0.288	0.162	0.137
52	SUBS	0.724	0.505	0.032	0.034	0.516	-0.111	0.402	0.165
53	MINE	0.618	0.340	-0.144	-0.074	0.288	-0.081	0.163	-0.600
54	ACCESS	0.413	0.135	-0.107	-0.058	0.038	-0.598	0.064	0.131
55	DURUSN	0.436	0.081	-0.555	0.072	0.105	0.171	-0.223	-0.163
56	CVA	0.431	0.430	-0.008	-0.052	0.479	0.021	-0.104	0.049
57	SUR.A.	0.455	0.609	0.021	0.070	0.255	-0.012	0.030	-0.116
58	ASW	0.700	0.789	-0.107	-0.145	0.098	-0.052	0.020	-0.180
59	A/C PT	0.496	0.289	-0.060	-0.167	0.041	0.591	0.173	0.020
60	SUR.PT	0.520	0.196	0.128	-0.219	0.089	0.625	0.137	0.018
61	AMPHIB	0.283	0.423	0.194	0.079	0.130	-0.131	-0.147	0.062
62	SERV.	0.479	0.582	-0.067	-0.002	0.013	-0.121	0.299	-0.178
63	MINE F	0.727	0.771	-0.099	-0.087	0.055	0.222	0.093	-0.235
64	SUB. F	0.752	0.740	-0.035	-0.118	0.130	0.192	0.259	-0.262
65	OVERT	0.731	0.181	-0.511	-0.641	0.064	0.082	0.011	-0.122
66	BORDER	0.134	0.064	0.110	-0.024	0.112	0.016	-0.018	-0.322
67	INCID.	0.149	0.173	0.024	0.026	-0.260	-0.061	-0.114	0.183
68	COVERT	0.665	-0.157	-0.479	-0.550	-0.177	0.205	-0.013	0.187
69	CRISIS	0.640	-0.154	0.397	0.583	0.140	-0.258	-0.155	0.093
70	UNAR	0.155	-0.064	0.003	0.080	0.181	-0.008	0.329	0.064
71	CIV. W	0.662	-0.214	0.189	-0.727	0.191	0.014	-0.101	0.068
72	GUER.W	0.617	0.069	-0.608	-0.190	-0.358	0.040	-0.055	0.270
73	REV.CP	0.123	0.168	0.052	0.108	-0.042	0.227	-0.159	0.040
74	REF.CP	0.218	-0.089	0.250	0.163	-0.126	-0.315	0.048	-0.062
75	PAL. R	0.101	0.004	0.143	0.105	0.014	0.164	-0.194	0.071
76	DOMTUR	0.249	-0.140	0.218	0.289	-0.202	-0.064	-0.231	0.002

*Reverse signs of factor loadings for proper interpretation

TABLE B-2

OBLIQUE FACTOR CORRELATIONS

Specifies the degree of correlation between factors

As an example, this correlation of .87 corresponds to a cosine of .87 for the angle between factors 6 and 7. This means that the angle between these oblique factors is approximately 30°, far less than the 90° which would mean that factors 6 and 7 were independent.

FACTOR CORRELATION MATRIX

	1	2	3	4	5	6	7	8	9	10
1	1.00000									
2	-0.40929	1.00000								
3	0.97322	-0.54193	1.00000							
4	-0.39133	0.99898	-0.52304	1.00000						
5	0.48985	0.56297	0.31390	0.57165	1.00000					
6	-0.27866	-0.71671	-0.09726	-0.72289	-0.96637	1.00000				
7	0.04050	0.80569	0.16575	0.80627	0.83415	-0.86763	1.00000			
8	-0.49914	-0.56781	-0.34788	-0.57546	-0.98149	0.95882	-0.76918	1.00000		
9	-0.84841	0.76707	-0.85589	0.75921	-0.07543	-0.14240	0.28479	0.03674	1.00000	
10	0.94963	-0.12498	0.89758	-0.10400	0.68769	-0.50951	0.25821	-0.71753	-0.64162	1.00000
11	0.73505	-0.69415	0.72486	-0.68608	0.07599	0.09346	-0.24773	-0.04863	-0.89991	0.53871

	11
1	0.73505
2	-0.69415
3	0.72486

As an example, this correlation of .097 corresponds to a cosine of .097 for the angle between factors 6 and 3. This means that the angle between these oblique factors is approximately 85°, nearly the 90° that would indicate independence between factors 6 and 3.

NOTE: Inspections of the correlations of factor 5 with factors 1, 2, 3, 4, 6, 7, 8 and 10 shows factor 5 to be substantially correlated with these factors

10. Eigenvalue - This is a measure of the amount of variation in the data which is accounted for by the factor. The eigenvalue, when divided by the number of variables, gives the portion of total variance in the data which is explained by the factor. The eigenvalue, when divided by the sum of the squares of the communalities for all variables, gives the portion of common variance explained by the factor. The minimum eigenvalue, a parameter in factor analytic solutions, sets a lower limit to summed squares of factor loadings to be extracted to compose a factor. That is, a given procedure will extract factors down to the level established by the minimum eigenvalue. Setting large eigenvalues results in fewer (and often confused or ambiguous) factors. The factor solutions with minimum eigenvalues of 0.5 were used for most of the analyses performed and interpreted in this study.

11. Percent of Total Variance - This figure tells the percentage of variation among all the variables in the study accounted for by each factor respectively. This measures the strength and comprehensiveness of each factor (Rummel, p. 465). Percent of total variance is not given in the tables of this report, but may be obtained by dividing the eigenvalue of each unrotated factor (see Figure B-6) by the number of variables or by the sum of the squares of the rotated factor loadings.

12. Percent of Common Variance - This percentage indicates the amount of variation accounted for by all the factors which is involved in each factor. (Rummel, p. 465) (See Figure B-6).

13. Hypothesis testing with factor analysis - Factor analysis is useful for more than mere description or reclassification of many variables. Factor analysis may be used to test for the existence of some hypothesized dimensions of attitude, personality, group social behavior, voting, or conflict. Theoretical statements can be made about which characteristics or behavior might be related to certain dimensions, and tests of significance can be applied to the factor analysis results (though they are usually not).

Factor analysis may also be used to test hypotheses not dealing with dimensions. The relationship between economic development and civil instability variables can be studied through factor analysis; their relationship may be close--hence intercorrelation in a single factor, or they may be independent (loading onto orthogonal factors). Certain variables can be held constant by rotating the factors until the control variables load on a few factors, leaving the variables more crucial to the study to find their own pattern. This pattern may then be studied more readily. (Rummel, 1967, p. 450).

There are a number of other uses for factor analysis beyond description and mapping of domains. These include "scaling" (developing continua on which individuals, groups, or nations can be rated and compared) and data reduction (reducing data to a few basic dimensions which may then be used in other analysis techniques--such as regression analysis). (Rummel, 1967, pp. 448-51).

TABLE B-3
Eigenvalues and Percent of Variance

TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (76) FACTORS UNROTATED FACTORS		7 ROTATED FACTORS	
1	13.205	17.4	17.4	18.3	18.3
2	8.974	11.8	29.2	20.8	39.1
3	5.197	6.8	36.0	14.5	53.6
4	4.241	5.6	41.6	17.5	71.1
5	3.705	4.9	46.5	9.4	80.5
6	3.529	4.6	51.1	10.1	90.6
7	3.016	4.0	55.1	9.1	99.7
8	2.408	3.2	58.3		
9	2.400	3.2	61.4		
10	2.143	2.8	64.2		
11	1.945	2.6	66.8		
12	1.780	2.3	69.1		
13	1.662	2.2	71.3		
14	1.546	2.0	73.4		
15	1.274	1.7	75.0		
16	1.204	1.6	76.6		
17	1.190	1.6	78.2		
18	1.104	1.5	79.6		
19	0.856	1.1	80.8		
20	0.841	1.1	81.9		
21	0.675	0.9	82.8		
22	0.672	0.9	83.7		
23	0.665	0.9	84.5		
24	0.658	0.9	85.4		
25	0.647	0.9	86.2		
26	0.633	0.8	87.1		
27	0.592	0.8	87.9		
28	0.536	0.7	88.6		
29	0.490	0.6	89.2		
30	0.434	0.6	89.8		
31	0.402	0.5	90.3		
32	0.399	0.5	90.8		
33	0.392	0.5	91.3		
34	0.386	0.5	91.9		
35	0.365	0.5	92.3		
36	0.353	0.5	92.8		
37	0.336	0.4	93.2		
38	0.325	0.4	93.7		
39	0.316	0.4	94.1		
40	0.291	0.4	94.5		
41	0.262	0.3	94.8		
42	0.217	0.3	95.1		
43	0.216	0.3	95.4		
44	0.183	0.2	95.6		
45	0.180	0.2	95.9		
46	0.171	0.2	96.1		
47	0.169	0.2	96.3		
48	0.167	0.2	96.5		
49	0.166	0.2	96.7		
50	0.164	0.2	97.0		

Sum of Column of squared factor loadings for each factor in the unrotated solution

Eigenvalues measure the amount of variation accounted for by a factor. Dividing the eigenvalue by the number of variables or by the communalities for every variable and multiplying by 100, determines either the percent of total or common variance respectively (See definitions above).

Variation among all the variables involved in a particular factor as a percent of that involved in all the factors.

TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (76) FACTORS	7 ROTATED FACTORS
51	0.157	0.2	97.2
52	0.155	0.2	97.4
53	0.151	0.2	97.6
54	0.147	0.2	97.8
55	0.143	0.2	98.0
56	0.123	0.2	98.1
57	0.122	0.2	98.3
58	0.118	0.2	98.4
59	0.115	0.2	98.6
60	0.097	0.1	98.7
61	0.096	0.1	98.8
62	0.093	0.1	99.0
63	0.092	0.1	99.1
64	0.088	0.1	99.2
65	0.087	0.1	99.3
66	0.086	0.1	99.4
67	0.084	0.1	99.5
68	0.074	0.1	99.6
69	0.073	0.1	99.7
70	0.061	0.1	99.8
71	0.050	0.1	99.9
72	0.050	0.1	99.9
73	0.043	0.1	100.0
74	0.006	0.0	100.0

TRACE OF ORIGINAL MATRIX = 76.000
COMMUNALITY OVER 76 FACTORS = 75.992
7 FACTORS = 41.867

Percent of Variation Among all the Variables Involved in the Patterns (Factors)= $\frac{75.992}{76.000} \times 100$

Percent of Variation Among the Variables of the Rotated Factors = $\frac{41.867}{76} \times 100$

TABLE B-3 (continued)
Eigenvalues and Percent of Variance

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3. Harman, Harry, H., Modern Factor Analysis, Chicago, University of Chicago Press, 1967.

4. Rummel, R. J., "Understanding Factor Analysis, "Journal of Conflict Resolution, 11, December, 1967.

5. Thurstone, L. L., Multiple Factor Analysis: A Development and Expansion of the Vectors of the Mind, Chicago, University of Chicago Press, 1947.

II. DATA ANALYSES FOR LOW LEVEL WARFARE STUDY

Proceeding from the examples of factor matrices to the actual data analyzed in the low level warfare study, the same format will be used. The orthogonally rotated factor matrix with minimum eigenvalue at .5 and missing data deleted will be presented wherever possible* for each separate analysis listed in Table B-1.

Then the factor matrix, with missing data estimated as the mean value for each variable, will be presented for comparison to the matrices used in the study. Following each matrix will be a table giving eigenvalues and percent of common variance explained for each analysis. Factor scores are included for analysis AB dealing with both conflict and naval operations in conflict.

Data matrix "A" concerned conflict data with selected navy attributes, and was divided into three separate factor analyses: (1) for all conflicts; (2) for conflicts with one or more deaths; (3) for conflicts with 100 or more deaths. Data matrix "B" concerned naval operations, and the corresponding factor analysis will follow the three A analyses. A combined conflict-naval operations data matrix was designated "AB;" its factor matrix will follow the B matrix. Finally, data matrix "C," concerning major power influence in less developed states, was factored. Four analyses were completed, producing four factor matrices (labelled "C") for 1959, 1961, 1963, and 1965.

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* For a few analyses the eigenvalue was changed so that only the strongest factors were rotated. In general, as may be seen from the tables in Section III of the main text, this procedure does not drastically change the factor structure.

TABLE B-4: SUMMARY OF ANALYSES

DESCRIPTION	NO. VARIABLES	NO. CASES	ANALYSES PERFORMED
Conflict			
1. Conflict data-deleting extreme cases like Korea & including cases of US Navy conflict. Missing data was deleted. Min. eigenvalue: 0.5*	52	310 Conflicts	Correlations obtained between variables for available data. Factor analysis (MESA I program) to unrotated and orthogonal solutions (20 factors).
2. Conflict data with mean values substituted in attributes concerning deadliness so that factor scores could be obtained. Min. eigenvalue: 0.5*	52	310 Conflicts	Factor analysis (MESA I & Oblimin programs) to unrotated, orthogonal (20 factors) and oblique solutions (7 factors). Factor Scores were obtained (MESA IA program).
3. Conflict data using only cases where deaths were ≥1 or missing with means substituted. Min. eigenvalue: 0.5*	52	287 Conflicts	Correlations obtained (MESA I prog.). Factor analysis (MESA I prog.) to unrotated and orthogonal solutions (20 factors). Factor scores were obtained (MESA prog.).
4. Conflict data where deaths were≥100. Min. eigenvalue: 0.5*	52	113 Conflicts	Correlations obtained. Factor analysis (MESA I prog.) to unrotated and orthogonal solutions (20 factors). Factor scores were obtained (MESA I)
Conflict and Naval Operations			
5. Conflict data plus selected naval opns. data. Missing data was deleted. Naval Opns included only conflict participation. Min. eigenvalue: 2.5	76	85 Conflicts & Operations	Correlations obtained. Factor analysis (MESA I & BMDX72 Prog.) to unrotated, orthogonal & oblique solutions. Factor scores were obtained (FASCO Program)

Table B-4 (Cont.)

	DESCRIPTION	NO. VARIABLES	NO. CASES	ANALYSES PERFORMED
6	Conflict data plus selected naval operations data with means substituted for missing data. Naval operations included only conflict participation. Min. eigenvalue: .5	76	85 Conflicts & Operations	Correlations obtained. Factor analysis (MESA IA & BMD72 Prog.) to unrotated & orthogona solutions. Factor scores were obtained (BMD72 program.).
7.	US Naval operations specifying types of forces used by the Navy. Includes combat & non-combat missions. Min. eigenvalue: 0.5	38	85 Operations	Correlations obtained. Factor analysis (BMD72 & Oblimin prog.) to unrotated, orthogonal, and oblique solutions. Factor scores were obtained (BMD72 prog.).
	Foreign Influence Analysis I			
8.	Foreign (US, Eastern Europe, SU, CC) influence data for countries in 1959. Missing data deleted. Min. eigenvalue: 0.5	74	84 Countries	Correlations obtained. Factor Analysis (MESA IA Program) to unrotated & orthogonal (20 factors) solutions. Factor scores obtained for each country (FASCO Program).
9.	Foreign influence data for countries in 1961. Missing data deleted. Min. eigenvalue: 0.5	76	84 Countries	Correlations obtained. Factor analysis (MESA IA Prog.) to unrotated & orthogonal (20 factors) solutions.
10.	Foreign influence data for countries in 1963. Missing data deleted. Min. eigenvalue: 0.5	74	85 Countries	Correlations obtained. Factor analyses (MESA IA prog.) to unrotated & orthogonal (20 factors) solutions.

Table B-4 (Cont.)

DESCRIPTION	NO. VARIABLES	NO. CASES	ANALYSES PERFORMED
11. Foreign influence data for countries in 1965. Missing data deleted. Min. eigenvalue: 0.5	79	86 Countries	Correlations obtained. Factor analysis (MESA IA prog.) to unrotated & orthogonal (20 factors) solutions.
Foreign Influence Analysis II			
12. Foreign (US, Eastern Eur., SU, CC\ influence data for countries in 1959. Missing data deleted. Min. eigenvalue: 3.5	74	84	Correlations obtained. Factor analysis (MESA IA prog.) to unrotated & orthogonal (6 factors) solutions. Factor scores were obtained (FASCO program).
13. Foreign influence data for countries in 1961. Missing data deleted. Min. eigenvalue: 3.0	76	84	Correlations obtained. Factor analysis (MESA IA prog.) to unrotated & orthogonal (7 factors) solutions. Factor scores were obtained. (FASCO program).
14. Foreign influence data for countries in 1963. Missing data deleted. Min. eigenvalue: 2.5	74	85	Correlations obtained. Factor analysis (MESA IA prog.) to unrotated & orthogonal (9 factors) solutions. Factor scores were obtained (FASCO program).
15. Foreign influence data for countries in 1965. Missing data deleted. Min. eigenvalue: 2.0	79	86	Correlations obtained. Factor analysis (MESA IA prog.) to unrotated & orthogonal (11 factors) solutions. Factor scores were obtained (FASCO program).

* Though analyses were done with other minimum eigenvalues for orthogonal rotations, those reported on will have minimum eigenvalues of .5.

TABLE B-5
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)
MISSING DATA DELETED MIN. EIGENVALUE: 0.5

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER	1	2	3	4	5*	6	7*	8	9	10
	SUM SQUARES OVER VARIABLES	4.429	2.458	2.058	1.802	3.945	2.404	1.704	1.520	1.651	1.582
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS									
1	US INV	0.737	0.209	-0.052	0.032	-0.097	-0.592	-0.220	0.278	-0.080	-0.231	-0.068
2	SU INV	0.628	0.578	0.110	-0.084	0.074	-0.418	-0.160	-0.033	-0.046	-0.106	-0.089
3	CC INV	0.746	-0.062	0.114	-0.159	0.057	-0.451	-0.156	0.016	-0.257	0.231	-0.094
4	OC INV	0.619	0.364	0.102	0.079	-0.062	-0.342	-0.051	0.177	-0.171	-0.279	-0.002
5	UN INV	0.652	0.039	0.037	0.035	0.002	-0.696	-0.067	-0.193	0.012	-0.007	0.207
6	TL INV	0.646	0.205	0.325	0.047	0.065	-0.642	-0.185	0.017	0.076	-0.091	-0.061
7	SE INV	0.714	-0.036	0.105	0.104	0.141	-0.559	-0.004	0.035	-0.061	0.019	-0.045
8	GR INV	0.691	-0.207	0.038	0.005	0.487	0.035	0.101	0.027	-0.140	-0.058	0.498
9	AI INV	0.629	0.039	0.055	0.073	0.399	-0.373	0.015	-0.024	0.143	0.141	0.153
10	DUR.	0.752	0.003	0.363	0.050	0.272	-0.004	-0.435	-0.068	0.119	0.240	0.273
11	NO. DE	0.930	0.027	0.937	0.128	0.048	-0.143	-0.049	-0.028	-0.002	-0.034	0.039
12	DE/POP	0.922	0.045	0.899	0.137	0.052	-0.200	-0.020	-0.087	0.002	-0.028	0.116
13	DE/DAY	0.690	-0.115	0.491	0.071	-0.098	0.047	0.148	0.035	-0.082	0.241	-0.142
14	COL.	0.694	-0.020	0.112	-0.046	-0.021	-0.121	0.009	-0.798	0.080	-0.012	0.071
15	E-W	0.696	0.401	0.038	0.110	0.035	-0.521	-0.120	0.099	-0.110	-0.058	-0.291
16	L.AMER	0.885	-0.156	0.038	-0.115	0.042	-0.011	0.044	0.422	-0.316	-0.305	0.147
17	EUR.	0.740	0.797	-0.017	0.080	-0.103	0.019	0.022	0.100	-0.029	-0.018	-0.125
18	M.EAST	0.901	-0.077	-0.001	0.051	0.002	0.018	0.017	-0.054	0.906	-0.110	0.040
19	ASIA	0.874	-0.055	-0.016	-0.123	-0.041	-0.029	-0.139	0.066	-0.137	0.875	-0.027
20	SEASIA	0.848	-0.064	0.090	0.022	0.102	-0.126	0.029	-0.008	-0.109	-0.099	-0.070
21	AFR.	0.861	-0.093	-0.084	0.130	-0.052	0.136	0.026	-0.531	-0.290	-0.279	-0.043
22	DISR.	0.672	0.006	0.132	0.200	-0.079	-0.172	0.003	-0.098	0.090	-0.042	0.690
23	FAV US	0.714	0.069	-0.033	0.075	0.014	-0.226	0.063	0.098	0.030	-0.178	-0.054
24	UNFAV	0.761	-0.024	0.052	-0.002	-0.104	-0.299	0.086	0.120	0.038	-0.029	0.002
25	MILVIC	0.783	-0.063	0.012	-0.008	0.019	0.147	0.846	0.019	-0.045	-0.043	0.088
26	STOP	0.811	0.058	-0.032	-0.077	-0.023	0.119	0.820	-0.063	0.097	-0.044	-0.007
27	TH.PER	0.718	0.196	-0.024	-0.086	0.207	-0.607	-0.149	-0.137	-0.009	0.118	0.121
28	TERROR	0.861	-0.031	0.222	0.866	-0.023	-0.049	-0.050	-0.076	0.009	-0.069	0.127
29	SABOT.	0.844	0.139	0.068	0.883	-0.006	-0.050	-0.025	0.075	0.030	-0.051	0.032
30	UNC.GR	0.629	-0.032	0.063	0.332	0.393	-0.031	-0.217	0.174	0.077	-0.067	0.261
31	REG.GR	0.724	0.309	0.044	-0.168	0.110	0.039	0.016	0.221	0.189	0.065	0.007
32	NUC.FR	0.664	0.737	-0.063	0.022	-0.077	-0.140	0.026	0.018	0.072	0.028	0.140
33	A/C	0.880	0.477	-0.071	-0.075	0.015	-0.165	0.031	0.062	0.172	0.025	-0.083
34	ANTI-A	0.852	0.441	0.003	-0.020	0.070	-0.244	-0.031	0.127	0.132	0.018	-0.095
35	SML.CF	0.814	0.101	-0.005	0.088	0.038	-0.204	-0.076	-0.075	0.006	-0.121	-0.054
36	MED.CB	0.832	0.441	-0.018	0.039	0.070	-0.070	-0.033	-0.123	-0.126	0.001	-0.040
37	LGE.CB	0.740	0.664	0.019	-0.098	0.049	0.089	-0.080	-0.216	-0.113	-0.117	0.105
38	SUBS	0.802	0.736	-0.002	-0.052	0.040	-0.144	-0.046	-0.110	0.054	-0.005	0.071
39	MINE	0.690	0.723	0.088	0.189	-0.065	-0.108	0.082	0.085	-0.049	0.043	-0.122
40	ACCESS	0.718	0.052	0.040	-0.074	0.028	0.070	-0.113	0.093	0.051	0.084	0.086

TABLE B-5 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

SUM SQUARES	FACTOR NUMBER OVER VARIABLES	1 4.429	2 2.458	3 2.058	4 1.802	5 3.945	6 2.404	7 1.704	8 1.520	9 1.651	10 1.582
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS									
41	OVERT	0.718	0.075	0.214	0.086	0.028	-0.634	0.136	-0.083	0.087	0.223	0.174
42	BORDER	0.854	-0.035	-0.035	-0.191	0.090	-0.050	-0.126	-0.005	0.042	0.078	0.020
43	INCID.	0.912	-0.007	0.047	0.026	0.021	0.029	-0.002	0.017	-0.006	-0.014	0.047
44	COVERT	0.774	-0.041	0.101	0.042	0.121	-0.287	-0.174	-0.030	-0.012	-0.180	0.052
45	CRISIS	0.741	0.275	-0.092	0.071	-0.165	-0.184	-0.184	0.171	-0.115	-0.321	0.067
46	UNAR	0.785	0.081	0.004	-0.145	0.161	-0.048	-0.252	-0.235	0.300	-0.120	-0.377
47	CIV. W	0.846	-0.021	-0.030	-0.008	0.025	-0.016	-0.085	0.051	-0.073	-0.079	0.109
48	GUER.W	0.861	0.030	0.185	0.093	0.304	-0.050	-0.351	-0.163	0.028	0.058	0.192
49	REV.CP	0.825	-0.064	-0.013	0.036	0.113	0.067	0.165	0.045	0.063	-0.042	-0.001
50	REF.CP	0.899	-0.147	-0.010	0.012	0.348	0.145	0.393	0.241	-0.093	-0.131	-0.244
51	PAL. R	0.749	-0.059	-0.007	0.061	0.018	0.084	0.142	0.029	-0.076	-0.027	-0.150
52	DOMTUR	0.822	0.057	-0.055	0.073	-0.827	0.158	0.028	-0.012	-0.010	0.024	0.127

*Reverse signs of variables on this factor for proper interpretation

TABLE B-5 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		11	12*	13	14	15*	16*	17	18*	19*	20
SUM SQUARES OVER VARIABLES			1.546	1.792	1.314	1.357	1.355	1.344	1.757	1.115	1.503	3.515
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	US INV	0.737	-0.118	0.305	-0.091	0.064	0.133	0.100	0.066	-0.135	0.004	0.023
2	SU INV	0.628	0.054	-0.110	-0.058	0.072	0.106	-0.040	0.009	0.004	-0.063	0.081
3	CC INV	0.746	0.145	-0.392	-0.037	0.169	0.184	-0.125	0.051	-0.076	-0.273	0.085
4	OC INV	0.619	0.087	0.120	-0.035	0.193	0.064	-0.025	0.339	0.067	-0.114	0.101
5	UN INV	0.652	0.084	-0.049	0.013	-0.095	-0.063	-0.130	0.120	0.078	-0.050	0.126
6	TL INV	0.646	0.025	0.001	-0.036	-0.019	0.044	-0.100	0.022	0.030	-0.104	-0.027
7	SE INV	0.714	-0.163	0.310	-0.228	-0.108	-0.287	0.072	0.026	-0.195	-0.043	0.192
8	GR INV	0.691	0.189	-0.051	-0.240	0.090	0.017	-0.084	0.111	0.011	-0.013	-0.050
9	AI INV	0.629	-0.018	0.219	-0.211	0.089	-0.254	-0.210	0.073	-0.173	-0.024	0.109
10	DUR.	0.752	-0.059	0.124	0.028	-0.166	0.099	0.149	0.218	0.033	-0.244	-0.127
11	NO. DE	0.930	0.018	0.024	0.019	-0.006	0.015	-0.014	0.055	0.022	-0.050	-0.002
12	DE/POP	0.922	0.054	-0.024	0.024	-0.034	0.023	0.014	0.098	-0.088	-0.019	-0.068
13	DE/DAY	0.690	0.037	-0.193	-0.263	0.344	-0.096	0.109	-0.014	-0.027	-0.021	0.249
14	COL.	0.694	-0.011	0.092	0.009	-0.001	0.061	0.009	0.037	0.007	-0.033	-0.024
15	E-W	0.696	0.083	0.115	-0.076	0.103	0.010	-0.145	0.201	-0.034	-0.159	0.008
16	L.AMER	0.885	-0.119	0.408	0.181	0.113	0.080	0.109	-0.081	-0.084	0.429	-0.084
17	EUR.	0.740	-0.081	0.009	0.050	-0.080	-0.091	-0.083	0.145	0.024	0.031	0.083
18	M.EAST	0.901	0.027	-0.019	-0.066	0.066	0.084	-0.048	0.012	0.006	0.074	0.173
19	ASIA	0.874	0.075	-0.073	-0.041	-0.012	0.100	-0.077	-0.106	0.016	0.060	-0.025
20	SEASIA	0.848	0.128	0.138	-0.015	-0.023	-0.196	0.057	0.001	0.027	-0.834	0.084
21	AFR.	0.861	-0.043	-0.508	-0.117	-0.106	-0.027	-0.008	0.095	0.031	0.185	-0.175
22	DISR.	0.672	-0.013	-0.041	-0.101	-0.006	-0.166	0.019	0.033	-0.080	0.116	-0.147
23	FAV US	0.714	-0.696	0.075	0.019	0.113	0.162	0.135	-0.143	-0.119	0.070	0.121
24	UNFAV	0.761	0.761	-0.069	-0.079	0.035	0.132	0.041	-0.013	-0.053	-0.124	0.066
25	MILVIC	0.783	-0.015	0.023	0.053	0.076	-0.054	0.096	-0.049	-0.067	-0.038	0.011
26	STOP	0.811	0.027	0.132	0.082	0.078	0.187	0.043	-0.093	0.073	-0.005	-0.128
27	TH.PER	0.718	0.010	0.023	0.118	-0.008	0.096	0.184	-0.175	0.119	0.034	0.296
28	TERROR	0.861	-0.034	0.004	-0.022	0.023	-0.008	0.119	-0.005	-0.076	0.039	-0.073
29	SABOT.	0.844	-0.041	0.077	0.070	0.018	0.007	0.075	0.057	0.037	-0.061	0.018
30	UNC.GR	0.629	-0.007	-0.107	0.310	0.031	0.003	-0.125	0.085	-0.023	-0.268	0.030
31	REG.GR	0.724	-0.006	-0.126	0.106	0.078	-0.066	-0.163	-0.089	0.046	-0.030	0.649
32	NUC.FR	0.664	-0.103	-0.020	-0.049	-0.013	0.020	0.061	-0.007	0.034	0.120	0.177
33	A/C	0.880	-0.035	-0.011	0.037	0.092	-0.018	0.064	-0.044	-0.007	0.033	0.744
34	ANTI-A	0.852	0.057	-0.035	0.031	0.106	0.029	-0.079	0.023	0.007	-0.116	0.715
35	SML.CF	0.814	-0.054	0.288	-0.012	-0.082	0.011	-0.080	0.015	0.022	-0.065	0.787
36	MED.CB	0.832	-0.007	0.099	0.034	-0.113	-0.156	0.118	-0.090	-0.009	0.012	0.722
37	LGE.CB	0.740	0.074	0.083	-0.088	0.039	0.012	0.165	-0.236	-0.041	-0.130	0.255
38	SUBS	0.802	-0.032	-0.000	-0.007	-0.028	0.028	0.172	-0.187	-0.018	0.058	0.377
39	MINE	0.690	0.044	-0.035	0.042	-0.064	0.043	-0.117	0.032	-0.020	-0.009	0.223
40	ACCESS	0.718	0.067	-0.796	0.045	-0.051	-0.017	-0.004	-0.009	-0.002	0.086	-0.115

TABLE B-5 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

			FACTOR NUMBER	11	12	13	14	15*	16	17	18	19	20
		SUM SQUARES	OVER VARIABLES	1.546	1.792	1.314	1.357	1.355	1.344	1.757	1.115	1.503	3.515
VARIABLE NO.		NAME	COMMUNALITY 20 FACTORS										
41		OVERT	0.718	0.041	-0.037	0.062	-0.074	-0.111	0.123	0.182	0.056	0.108	0.236
42		BORDER	0.854	0.046	-0.026	-0.011	-0.023	0.063	-0.867	-0.131	-0.002	0.036	0.061
43		INCID.	0.912	-0.027	0.011	0.021	-0.035	0.005	-0.003	0.006	-0.949	0.025	-0.034
44		COVERT	0.774	0.040	0.012	-0.058	0.021	0.009	0.148	0.752	0.019	0.036	-0.047
45		CRISIS	0.741	-0.257	0.142	-0.136	-0.036	0.203	0.173	-0.436	0.007	-0.146	0.134
46		UNAR	0.785	0.407	0.123	0.070	0.067	-0.049	0.226	-0.247	-0.044	0.238	0.012
47		CIV. W	0.846	0.018	-0.022	0.009	-0.002	-0.879	0.058	-0.044	0.012	-0.161	0.078
48		GUER.W	0.861	0.017	-0.040	-0.011	-0.109	0.227	0.161	0.576	-0.115	-0.241	-0.192
49		REV.CP	0.825	-0.055	0.069	-0.052	0.867	0.017	0.023	-0.014	0.048	0.046	0.001
50		REF.CP	0.899	-0.100	-0.024	-0.377	-0.430	0.063	0.118	-0.217	0.082	0.144	0.082
51		PAL. R	0.749	-0.069	-0.018	0.812	-0.055	-0.003	0.029	-0.041	-0.017	0.042	0.110
52		DOMTUR	0.822	0.120	0.017	-0.075	-0.066	0.029	0.040	-0.134	0.006	0.066	-0.186

*Reverse signs of variables on this factor for proper interpretation

TABLE B-5 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12*	13	14	15*	16*	17	18*	19*	20
SUM SQUARES OVER VARIABLES			1.546	1.792	1.314	1.357	1.355	1.344	1.757	1.115	1.503	3.515
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	US INV	0.737	-0.118	0.305	-0.091	0.064	0.133	0.100	0.066	-0.135	0.004	0.023
2	SU INV	0.628	0.054	-0.110	-0.058	0.072	0.106	-0.040	0.009	0.004	-0.063	0.081
3	CC INV	0.746	0.145	-0.392	-0.037	0.169	0.184	-0.125	0.051	-0.076	-0.273	0.085
4	OC INV	0.619	0.087	0.120	-0.035	0.193	0.064	-0.025	0.339	0.067	-0.114	0.101
5	UN INV	0.652	0.084	-0.049	0.013	-0.095	-0.063	-0.130	0.120	0.078	-0.050	0.126
6	TL INV	0.646	0.025	0.001	-0.036	-0.019	0.044	-0.100	0.022	0.030	-0.104	-0.027
7	SE INV	0.714	-0.163	0.310	-0.228	-0.108	-0.287	0.072	0.026	-0.195	-0.043	0.192
8	GR INV	0.691	0.189	-0.051	-0.740	0.090	0.017	-0.084	0.111	0.011	-0.013	-0.050
9	AI INV	0.629	-0.018	0.219	-0.211	0.089	-0.254	-0.210	0.073	-0.173	-0.024	0.109
10	DUR.	0.752	-0.059	0.124	0.028	-0.166	0.099	0.149	0.218	0.033	-0.244	-0.127
11	NO. DE	0.930	0.018	0.024	0.019	-0.006	0.015	-0.014	0.055	0.022	-0.050	-0.002
12	DE/POP	0.922	0.054	-0.024	0.024	-0.034	0.023	0.014	0.098	-0.088	-0.019	-0.068
13	DE/DAY	0.690	0.037	-0.193	-0.263	0.344	-0.096	0.109	-0.014	-0.027	-0.021	0.249
14	COL.	0.694	-0.011	0.092	0.009	-0.001	0.061	0.009	0.037	0.007	-0.033	-0.024
15	E-W	0.696	0.083	0.115	-0.076	0.103	0.010	-0.145	0.201	-0.034	-0.159	0.008
16	L.AMER	0.885	-0.119	0.408	0.181	0.113	0.080	0.109	-0.081	-0.084	0.429	-0.084
17	EUR.	0.740	-0.081	0.009	0.050	-0.080	-0.091	-0.087	0.145	0.024	0.031	0.083
18	M.EAST	0.901	0.027	-0.019	-0.066	0.066	0.084	-0.048	0.012	0.006	0.074	0.173
19	ASIA	0.874	0.075	-0.073	-0.041	-0.012	0.100	-0.077	-0.106	0.016	0.060	-0.025
20	SEASIA	0.848	0.128	0.138	-0.015	-0.023	-0.196	0.057	0.001	0.027	-0.834	0.084
21	AFR.	0.861	-0.043	-0.508	-0.117	-0.106	-0.027	-0.008	0.095	0.031	0.195	-0.175
22	DISR.	0.672	-0.013	-0.041	-0.101	-0.006	-0.166	0.019	0.033	-0.080	0.116	-0.147
23	FAV US	0.714	-0.696	0.075	0.019	0.113	0.162	0.135	-0.143	-0.119	0.070	0.121
24	UNFAV	0.761	0.761	-0.069	-0.079	0.035	0.132	0.041	-0.013	-0.053	-0.124	0.066
25	MILVIC	0.783	-0.015	0.023	0.053	0.076	-0.054	0.096	-0.049	-0.067	-0.038	0.011
26	STOP	0.811	0.027	0.132	0.082	0.078	0.187	0.043	-0.093	0.073	-0.005	-0.128
27	TH.PER	0.718	0.010	0.023	0.118	-0.008	0.096	0.184	-0.175	0.119	0.034	0.296
28	TERROR	0.861	-0.034	0.004	-0.022	0.023	-0.008	0.119	-0.005	-0.076	0.039	-0.073
29	SABOT.	0.844	-0.041	0.077	0.070	0.018	0.007	0.075	0.057	0.037	-0.061	0.018
30	UNC.GR	0.629	-0.007	-0.107	0.310	0.031	0.003	-0.125	0.085	-0.023	-0.268	0.030
31	REG.GR	0.724	-0.006	-0.126	0.106	0.078	-0.066	-0.163	-0.089	0.046	-0.030	0.649
32	NUC.FR	0.664	-0.103	-0.020	-0.049	-0.013	0.020	0.061	-0.007	0.034	0.120	0.177
33	A/C	0.880	-0.035	-0.011	0.037	0.092	-0.018	0.064	-0.044	-0.007	0.033	0.744
34	ANTI-A	0.852	0.057	-0.035	0.031	0.106	0.029	-0.079	0.023	0.007	-0.116	0.715
35	SML.CF	0.814	-0.054	0.288	-0.012	-0.082	0.011	-0.080	0.015	0.022	-0.065	0.767
36	MED.CB	0.832	-0.007	0.099	0.034	-0.113	-0.156	0.118	-0.090	-0.009	0.012	0.722
37	LGE.CB	0.740	0.074	0.083	-0.088	0.039	0.012	0.165	-0.236	-0.041	-0.130	0.255
38	SUBS	0.807	-0.032	-0.000	-0.007	-0.028	0.028	0.172	-0.187	-0.018	0.058	0.377
39	MINE	0.690	0.044	-0.035	0.042	-0.064	0.043	-0.117	0.032	-0.020	-0.009	0.223
40	ACCESS	0.718	0.067	-0.796	0.045	-0.051	-0.017	-0.004	-0.009	-0.002	0.086	-0.115

TABLE B-5 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13	14	15*	16	17	18	19	20
SUM SQUARES		OVER VARIABLES	1.546	1.792	1.314	1.357	1.355	1.344	1.757	1.115	1.503	3.515
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	OVERT	0.718	0.041	-0.037	0.062	-0.074	-0.111	0.123	0.182	0.056	0.108	0.236
42	BORDER	0.854	0.046	-0.026	-0.011	-0.023	0.063	-0.867	-0.131	-0.002	0.036	0.061
43	INCID.	0.912	-0.027	0.011	0.021	-0.035	0.005	-0.003	0.006	-0.949	0.025	-0.034
44	COVERT	0.774	0.040	0.012	-0.058	0.021	0.009	0.148	0.752	0.019	0.036	-0.047
45	CRISIS	0.741	-0.257	0.142	-0.136	-0.036	0.203	0.173	-0.436	0.007	-0.146	0.134
46	UNAR	0.785	0.407	0.123	0.070	0.067	-0.049	0.226	-0.247	-0.044	0.238	0.012
47	CIV. W	0.846	0.018	-0.022	0.009	-0.002	-0.279	0.058	-0.044	0.012	-0.161	0.078
48	GUER.W	0.861	0.017	-0.040	-0.011	-0.109	0.227	0.161	0.576	-0.115	-0.241	-0.192
49	REV.CP	0.825	-0.055	0.069	-0.052	0.867	0.017	0.023	-0.014	0.048	0.046	0.001
50	REF.CP	0.899	-0.100	-0.024	-0.377	-0.430	0.063	0.118	-0.217	0.082	0.144	0.082
51	PAL. R	0.749	-0.069	-0.018	0.812	-0.055	-0.003	0.029	-0.041	-0.017	0.042	0.110
52	DOMTUR	0.822	0.120	0.017	-0.075	-0.066	0.029	0.040	-0.134	0.006	0.066	-0.186

*Reverse signs of variables on this factor for proper interpretation

TABLE B-6
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)
TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS	
1	7.860	15.1	15.1	11.1	11.1
2	4.873	9.4	24.5	6.1	17.2
3	2.960	5.7	30.2	5.1	22.3
4	2.566	4.9	35.2	4.5	26.8
5	2.359	4.5	39.7	9.9	36.7
6	1.996	3.8	43.5	6.0	42.7
7	1.799	3.5	47.0	4.3	47.0
8	1.649	3.2	50.2	3.8	50.8
9	1.567	3.0	53.2	4.1	54.7
10	1.530	2.9	56.1	4.0	58.9
11	1.473	2.8	59.0	3.9	62.8
12	1.306	2.5	61.5	4.5	67.3
13	1.187	2.3	63.8	3.3	70.6
14	1.160	2.2	66.0	3.4	74.0
15	1.112	2.1	68.1	3.4	77.4
16	1.079	2.1	70.2	3.4	80.8
17	1.058	2.0	72.3	4.4	85.2
18	1.002	1.9	74.2	2.8	88.0
19	0.843	1.6	75.8	3.8	91.8
20	0.826	1.6	77.4	8.8	100
21	0.784	1.5	78.9		
22	0.746	1.4	80.3		
23	0.704	1.4	81.7		
24	0.679	1.3	83.0		
25	0.644	1.2	84.3		
26	0.631	1.2	85.5		
27	0.619	1.2	86.7		
28	0.562	1.1	87.7		
29	0.533	1.0	88.8		
30	0.506	1.0	89.7		
31	0.475	0.9	90.7		
32	0.456	0.9	91.5		
33	0.434	0.8	92.4		
34	0.401	0.8	93.1		
35	0.375	0.7	93.9		
36	0.371	0.7	94.6		
37	0.317	0.6	95.2		
38	0.302	0.6	95.8		
39	0.295	0.6	96.3		
40	0.256	0.5	96.8		
41	0.249	0.5	97.3		
42	0.242	0.5	97.8		
43	0.212	0.4	98.2		
44	0.199	0.4	98.6		
45	0.173	0.3	98.9		
46	0.148	0.3	99.2		
47	0.142	0.3	99.5		
48	0.116	0.2	99.7		
49	0.077	0.1	99.8		
50	0.051	0.1	99.9		

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS	20 ROTATED FACTORS
51	0.037	0.1	100.0

TRACE OF ORIGINAL MATRIX = 52.000
COMMUNALITY OVER 51 FACTORS = 51.952
20 FACTORS = 40.213

TABLE B-7
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)
UNKNOWN DEATHS ESTIMATED AS MEAN VALUES MIN. EIGENVALUE: 0.5

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		1	2	3	4	5	6*	7	8*	9	10
SUM SQUARES	OVER VARIABLES		4.197	2.344	1.642	1.507	4.024	2.474	1.731	1.462	1.421	1.291
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	US INV	0.735	0.216	-0.048	0.229	-0.019	-0.567	0.239	0.216	0.073	0.144	-0.014
2	SU INV	0.627	0.567	0.107	0.098	-0.118	-0.402	0.152	-0.029	0.059	0.110	-0.111
3	CC INV	0.742	-0.055	0.081	-0.214	-0.334	-0.450	0.177	0.007	0.235	0.177	0.095
4	OC INV	0.617	0.390	0.088	0.345	-0.103	-0.350	0.124	0.148	0.138	0.086	0.168
5	UN INV	0.652	0.041	0.025	0.043	0.039	-0.713	0.095	-0.218	-0.031	-0.076	0.123
6	TL.INV	0.648	0.211	0.320	0.085	-0.146	-0.631	0.186	0.019	-0.071	0.052	-0.076
7	SE.INV	0.712	-0.045	0.093	-0.008	-0.077	-0.570	0.001	0.065	0.082	-0.252	-0.049
8	GR.INV	0.688	-0.219	0.036	0.079	0.204	-0.015	-0.144	-0.005	0.124	-0.060	0.145
9	AI.INV	0.626	0.029	0.040	-0.110	0.021	-0.407	-0.040	-0.017	-0.120	-0.243	-0.042
10	DUR.	0.727	0.003	0.229	-0.227	-0.075	-0.051	0.426	-0.135	-0.145	0.042	0.116
11	NO.DE.	0.928	0.033	0.937	0.036	-0.014	-0.137	0.047	-0.035	-0.004	0.013	-0.001
12	DE/POP	0.914	0.053	0.899	0.044	0.041	-0.195	0.022	-0.096	-0.008	0.013	0.015
13	DE/DAY	0.663	-0.114	0.519	-0.212	-0.114	0.060	-0.092	0.057	0.067	-0.046	0.041
14	COL.	0.693	-0.037	0.106	0.029	0.008	-0.132	-0.015	-0.799	-0.054	0.056	-0.090
15	E-W	0.696	0.426	0.029	0.105	-0.307	-0.509	0.161	0.126	0.131	0.069	-0.081
16	L.AMER	0.878	-0.155	0.033	0.254	0.482	-0.006	-0.067	0.435	0.305	0.077	-0.023
17	EUR.	0.739	0.813	-0.021	0.053	-0.030	0.020	0.020	0.092	0.028	-0.046	0.045
18	M.EAST	0.902	-0.088	-0.006	0.121	0.082	0.015	-0.024	-0.064	-0.887	0.092	-0.148
19	ASIA	0.869	-0.047	-0.016	-0.876	0.017	-0.032	0.140	0.056	0.128	0.109	0.051
20	SEASIA	0.846	-0.070	0.077	0.106	-0.734	-0.118	-0.031	-0.063	0.065	-0.286	0.140
21	AFR.	0.866	-0.091	-0.079	0.299	0.094	0.128	-0.016	-0.470	0.332	0.021	-0.039
22	DIS.	0.672	0.008	0.121	0.041	0.440	-0.205	0.002	-0.188	-0.163	-0.253	0.342
23	FAV US	0.716	0.055	-0.038	0.138	0.034	-0.211	-0.076	0.104	-0.040	0.162	0.078
24	UNFAV.	0.763	-0.025	0.051	0.021	-0.112	-0.283	-0.085	0.108	-0.037	0.108	-0.128
25	MILVIC	0.784	-0.063	0.015	0.050	0.009	0.129	-0.837	0.006	0.028	-0.065	0.151
26	STOP	0.810	0.060	-0.025	0.038	-0.002	0.119	-0.822	-0.072	-0.099	0.181	0.037
27	TH.PER	0.715	0.152	-0.023	-0.162	0.097	-0.604	0.084	-0.136	0.032	0.044	-0.167
28	TERROR	0.858	-0.023	0.211	0.063	0.077	-0.053	0.048	-0.073	-0.012	-0.014	0.042
29	SABOT.	0.842	0.151	0.061	0.064	-0.046	-0.051	0.034	0.069	-0.037	0.007	0.071
30	UNC.GR	0.625	-0.035	0.054	0.075	-0.104	-0.052	0.181	0.127	-0.106	-0.076	0.135
31	REG.GR	0.719	0.278	0.042	-0.077	-0.018	0.033	-0.028	0.201	-0.199	-0.077	0.025
32	NUC.FR	0.665	0.726	-0.056	-0.026	0.184	-0.139	-0.024	-0.015	-0.089	0.004	0.068
33	A/C	0.881	0.437	-0.063	-0.024	-0.001	-0.165	-0.032	0.060	-0.160	-0.005	-0.070
34	AAA	0.854	0.413	0.009	-0.000	-0.148	-0.244	0.041	0.116	-0.134	0.034	-0.008
35	SML.CF	0.814	0.063	-0.005	0.136	-0.064	-0.207	0.082	-0.077	0.001	0.021	0.012
36	MED.CB	0.834	0.392	-0.014	-0.014	0.013	-0.074	0.009	-0.112	0.150	-0.155	-0.091
37	LGE.CB	0.739	0.610	0.021	0.053	-0.023	0.110	0.015	-0.248	0.116	-0.065	-0.106
38	SUBS	0.800	0.688	0.004	-0.041	0.109	-0.131	-0.002	-0.126	-0.040	-0.009	-0.126
39	MINE	0.691	0.727	0.085	-0.033	-0.078	-0.102	-0.059	0.078	0.048	0.072	0.016
40	ACCESS	0.721	0.054	0.039	-0.093	0.068	0.064	0.109	0.098	-0.062	-0.021	0.046

TABLE B-7 (continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		1	2	3	4	5	6*	7	8*	9	10
SUM SQUARES	OVER VARIABLES		4.197	2.344	1.642	1.507	4.024	2.474	1.731	1.462	1.421	1.291
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	OVERT	0.719	0.077	0.201	-0.172	0.155	-0.673	-0.097	-0.093	-0.090	-0.086	0.080
42	BORDER	0.852	-0.027	-0.028	-0.090	0.013	-0.038	0.119	-0.007	-0.053	0.061	0.073
43	INCID.	0.910	-0.008	0.049	0.011	0.036	0.030	0.005	0.015	0.009	0.003	-0.008
44	COVERT	0.772	0.005	0.086	0.347	0.034	-0.348	0.284	-0.028	0.019	0.095	0.137
45	CRISIS	0.742	0.232	-0.075	0.204	-0.051	-0.122	0.122	0.129	0.073	0.099	0.042
46	UNAR	0.788	0.042	-0.011	0.038	0.036	-0.016	0.146	-0.125	-0.170	-0.005	-0.802
47	CIV. W	0.849	-0.029	-0.021	0.075	-0.067	-0.031	0.074	0.050	0.073	-0.902	0.010
48	GUER.W	0.857	0.056	0.139	0.058	-0.129	-0.107	0.399	-0.208	-0.040	0.220	0.160
49	REV.CP	0.834	-0.072	-0.003	0.042	0.028	0.067	-0.173	0.050	-0.046	0.019	-0.059
50	REF.CP	0.896	-0.172	-0.014	0.077	-0.035	0.144	-0.469	0.342	0.151	0.105	-0.242
51	PAL. R	0.747	-0.057	-0.014	0.020	0.004	0.089	-0.142	0.044	0.087	0.013	-0.065
52	DOMTUR	0.[illegible]9	0.083	-0.040	-0.054	0.159	0.199	0.043	-0.084	-0.074	0.004	0.289

*Reverse signs of variables on this factor for proper interpretation.

TABLE B-7 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS	11	12	13	14*	15	16	17	18*	19	20*
SUM SQUARES	FACTOR NUMBER OVER VARIABLES		2.191	1.329	1.776	1.351	1.563	1.346	1.437	1.119	2.030	3.823
1	US INV	0.735	-0.108	-0.074	0.310	-0.071	-0.089	-0.100	-0.163	0.135	-0.030	-0.016
2	SU INV	0.627	0.049	-0.058	-0.111	-0.069	0.035	0.049	-0.100	-0.007	0.089	-0.113
3	CC INV	0.742	0.082	-0.010	-0.355	-0.167	0.184	0.107	-0.009	0.076	0.166	-0.073
4	OC INV	0.617	0.027	-0.023	0.155	-0.197	0.146	-0.061	0.093	-0.063	-0.057	-0.087
5	UN INV	0.652	0.066	-0.000	-0.040	0.088	0.127	0.105	0.019	-0.072	-0.036	-0.108
6	TL.INV	0.648	0.060	-0.027	0.012	0.025	0.015	0.104	-0.077	-0.032	-0.044	0.022
7	SE.INV	0.712	0.040	-0.230	0.313	0.108	-0.195	-0.054	0.022	0.197	-0.109	-0.196
8	GR.INV	0.688	0.618	-0.287	-0.065	-0.098	0.206	0.086	0.010	-0.003	-0.000	0.051
9	AI.INV	0.626	0.359	-0.248	0.214	-0.090	-0.066	0.219	0.132	0.178	-0.070	-0.132
10	DUR.	0.727	0.517	-0.009	0.132	0.157	-0.015	-0.222	0.019	-0.021	-0.062	0.129
11	NO.DE.	0.928	0.090	0.027	0.033	0.020	0.013	0.013	0.012	-0.021	-0.119	0.012
12	DE/POP	0.914	0.117	0.023	-0.017	0.042	0.053	-0.014	0.033	0.089	-0.132	0.077
13	DE/DAY	0.663	-0.162	-0.245	-0.151	-0.314	0.024	-0.132	0.114	0.013	-0.054	-0.240
14	COL.	0.693	0.003	-0.008	0.072	0.014	-0.029	-0.010	0.031	-0.009	0.032	0.029
15	E-W	0.696	-0.033	-0.059	0.140	-0.106	0.053	0.112	0.136	0.032	-0.091	-0.025
16	L.AMER	0.878	0.017	0.173	0.377	-0.115	-0.123	-0.070	-0.170	0.086	0.108	0.099
17	EUR.	0.739	-0.110	0.054	0.020	0.075	-0.079	0.030	0.119	-0.022	-0.064	-0.114
18	M.EAST	0.902	0.006	-0.079	-0.026	-0.059	0.004	0.058	0.054	-0.008	-0.062	-0.174
19	ASIA	0.869	-0.046	-0.037	-0.065	0.010	0.078	0.083	0.081	-0.019	0.126	0.022
20	SEASIA	0.846	0.212	0.016	0.192	0.032	0.195	-0.093	-0.157	-0.027	-0.007	-0.074
21	AFR.	0.866	-0.124	-0.127	-0.531	0.104	-0.086	0.014	0.142	-0.032	-0.138	0.177
22	DIS.	0.672	0.175	-0.135	-0.052	-0.002	0.109	-0.059	-0.142	0.100	-0.215	0.184
23	FAV US	0.716	-0.072	0.041	0.067	-0.127	-0.673	-0.109	-0.258	0.124	-0.078	-0.124
24	UNFAV.	0.763	-0.055	-0.074	-0.060	-0.030	0.774	-0.030	-0.030	0.051	-0.007	-0.055
25	MILVIC	0.784	-0.015	0.057	0.030	-0.086	0.014	-0.110	0.044	0.075	0.011	-0.005
26	STOP	0.810	-0.073	0.085	0.130	-0.089	0.035	-0.042	-0.003	-0.070	0.076	0.121
27	TH.PER	0.715	0.172	0.095	-0.009	0.005	-0.015	-0.104	-0.247	-0.121	0.073	-0.322
28	TERROR	0.858	0.043	-0.026	-0.004	-0.019	-0.023	-0.115	-0.039	0.076	-0.871	0.082
29	SABOT.	0.842	0.053	0.075	0.083	-0.022	0.025	-0.092	0.004	-0.038	-0.876	0.016
30	UNC.GR	0.625	0.555	0.288	-0.093	-0.036	0.023	0.109	-0.057	0.025	-0.314	-0.036
31	REG.GR	0.719	0.085	0.105	-0.116	-0.079	0.003	0.165	-0.039	-0.042	0.171	-0.669
32	NUC.FR	0.665	-0.040	-0.059	-0.028	0.010	-0.073	-0.069	-0.099	-0.029	-0.018	-0.204
33	A/C	0.881	-0.066	0.036	-0.012	-0.095	-0.043	-0.049	-0.039	0.008	0.074	-0.773
34	AAA	0.854	0.034	0.037	-0.016	-0.107	0.065	0.068	-0.010	-0.006	0.029	-0.738
35	SML.CF	0.814	-0.006	-0.008	0.299	0.084	-0.046	0.081	-0.035	-0.022	-0.092	-0.785
36	MED.CB	0.834	-0.005	0.024	0.088	0.118	-0.034	-0.087	-0.072	0.009	-0.047	-0.754
37	LGE.CB	0.739	0.087	-0.102	0.059	-0.024	0.080	-0.115	-0.346	0.039	0.085	-0.299
38	SUBS	0.800	0.019	-0.023	-0.027	0.035	-0.042	-0.119	-0.249	0.018	0.040	-0.424
39	MINE	0.691	-0.082	0.051	-0.025	0.060	0.046	0.089	0.031	0.024	-0.180	-0.251
40	ACCESS	0.721	0.054	0.036	-0.801	0.046	0.073	0.003	0.028	0.006	0.076	0.104

TABLE B-7 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		11	12	13	14*	15	16	17	18*	19	20*
SUM SQUARES OVER VARIABLES			2.191	1.329	1.776	1.351	1.563	1.346	1.437	1.119	2.030	3.823
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	OVERT	0.719	0.049	0.044	-0.034	0.061	0.057	-0.158	0.167	-0.048	-0.089	-0.224
42	BORDER	0.852	0.058	-0.015	-0.019	0.021	0.045	0.875	0.022	0.002	0.197	-0.062
43	INCID.	0.910	0.034	0.016	0.008	0.033	-0.026	0.002	-0.002	0.949	-0.028	0.033
44	COVERT	0.772	0.229	-0.074	0.050	-0.029	0.050	-0.280	0.515	-0.017	-0.011	0.073
45	CRISIS	0.742	-0.142	-0.106	0.129	0.044	-0.180	-0.091	-0.676	-0.009	-0.086	-0.141
46	UNAR	0.788	-0.069	0.048	0.055	-0.041	0.194	-0.078	-0.038	0.023	0.109	-0.063
47	CIV. W	0.849	0.010	-0.005	-0.018	0.005	0.007	-0.044	0.035	-0.008	-0.001	-0.081
48	GUER.W	0.857	0.543	-0.037	-0.010	0.103	0.050	-0.277	0.286	0.114	-0.066	0.200
49	REV.CP	0.834	0.063	-0.063	0.062	-0.873	-0.071	-0.008	0.012	-0.045	-0.039	-0.012
50	REF.CP	0.896	0.090	-0.371	-0.055	0.430	-0.225	-0.028	-0.045	-0.093	-0.012	-0.117
51	PAL. R	0.747	-0.024	0.817	-0.015	0.057	-0.093	-0.016	0.055	0.013	-0.058	-0.118
52	DOMTUR	0.819	-0.670	-0.036	0.033	0.068	0.274	-0.093	-0.196	0.006	-0.089	0.243

*Reverse signs of variables on this factor for proper interpretation

TABLE B-8
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA)
TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS	
1	7.850	15.1	15.1	10.5	10.5
2	4.783	9.2	24.3	5.9	16.4
3	2.962	5.7	30.0	4.1	20.5
4	2.566	4.9	35.0	3.8	24.3
5	2.359	4.5	39.5	10.1	34.4
6	1.999	3.8	43.3	6.2	40.6
7	1.792	3.4	46.8	4.3	44.9
8	1.654	3.2	50.0	3.7	48.6
9	1.577	3.0	53.0	3.6	52.2
10	1.530	2.9	56.0	3.2	55.4
11	1.463	2.8	58.8	5.5	60.9
12	1.307	2.5	61.3	3.3	64.2
13	1.188	2.3	63.6	4.4	68.6
14	1.157	2.2	65.8	3.4	72.0
15	1.129	2.2	68.0	3.7	75.7
16	1.082	2.1	70.1	3.4	79.1
17	1.057	2.0	72.1	3.6	82.7
18	1.010	1.9	74.0	2.8	85.5
19	0.845	1.6	75.7	5.1	90.6
20	0.827	1.6	77.3	9.6	100
21	0.785	1.5	78.8		
22	0.746	1.4	80.2		
23	0.700	1.3	81.5		
24	0.680	1.3	82.9		
25	0.646	1.2	84.1		
26	0.641	1.2	85.3		
27	0.620	1.2	86.5		
28	0.566	1.1	87.6		
29	0.534	1.0	88.6		
30	0.505	1.0	89.6		
31	0.477	0.9	90.5		
32	0.456	0.9	91.4		
33	0.440	0.8	92.3		
34	0.401	0.8	93.0		
35	0.379	0.7	93.8		
36	0.371	0.7	94.5		
37	0.329	0.6	95.1		
38	0.314	0.6	95.7		
39	0.296	0.6	96.3		
40	0.261	0.5	96.8		
41	0.250	0.5	97.3		
42	0.242	0.5	97.7		
43	0.212	0.4	98.1		
44	0.204	0.4	98.5		
45	0.178	0.3	98.9		
46	0.151	0.3	99.2		
47	0.144	0.3	99.4		
48	0.118	0.2	99.7		
49	0.077	0.1	99.8		
50	0.054	0.1	99.9		

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS
51	0.041	0.1	100.0	
52	0.000	0.0	100.0	

TRACE OF ORIGINAL MATRIX = 52.000
COMMUNALITY OVER 52 FACTORS = 51.953
20 FACTORS = 40.135

TABLE B-9

DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS 51

UNKNOWN DEATHS ESTIMATED AS MEAN VALUES -- MIN. EIGENVALUE: 0.5

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	1	2	3	4*	5*	6	7*	8	9	10
SUM SQUARES OVER VARIABLES			5.559	2.046	2.092	1.505	3.643	2.392	1.670	1.606	1.542	1.427
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	US INV	0.715	0.067	-0.076	0.031	0.061	-0.628	-0.038	0.184	-0.055	-0.071	0.068
2	SU INV	0.602	0.382	0.094	0.031	0.064	-0.558	0.132	-0.126	0.010	-0.039	[illegible]
3	CC INV	0.732	0.020	0.081	-0.207	0.124	-0.426	0.070	-0.026	0.266	-0.161	0.160
4	OC INV	0.614	0.336	0.008	0.023	0.015	-0.574	0.115	0.105	0.081	-0.111	[illegible]
5	UN INV	0.657	0.070	0.067	0.031	-0.151	-0.466	0.038	-0.166	0.025	0.096	-0.129
6	TL.INV	0.617	0.023	0.076	0.113	0.033	-0.590	0.334	-0.006	0.067	0.051	[illegible]
7	SE.INV	0.736	0.052	0.151	0.073	-0.393	-0.419	0.100	0.004	-0.015	0.066	-0.069
8	GR.INV	0.625	-0.165	0.542	-0.061	-0.095	-0.025	0.052	0.048	-0.035	0.007	[illegible]
9	AI.INV	0.667	0.104	0.385	0.017	-0.344	-0.321	0.067	-0.036	-0.077	0.251	0.022
10	DUR.	0.720	-0.093	0.346	0.104	0.143	-0.001	0.236	-0.009	0.175	0.048	[illegible]
11	NO.DE.	0.931	0.017	0.055	0.125	0.024	-0.128	0.939	-0.016	0.043	-0.020	-0.008
12	DE/POP	0.915	-0.012	0.068	0.127	0.015	-0.170	0.909	-0.067	0.002	-0.010	[illegible]
13	DE/DAY	0.683	0.080	-0.065	0.025	-0.162	0.006	0.442	0.005	0.062	0.094	0.377
14	COL.	0.701	-0.026	-0.013	-0.091	0.067	0.007	0.142	-0.738	0.048	0.055	[illegible]
15	E-W	0.689	0.220	0.002	0.176	0.012	-0.680	0.040	0.016	0.180	-0.147	0.047
16	L.AMER	0.853	-0.181	0.049	-0.184	-0.011	-0.018	0.062	0.463	-0.447	-0.274	[illegible]
17	EUR.	0.732	0.645	-0.098	0.239	0.020	-0.181	-0.047	0.045	-0.126	-0.234	-0.168
18	M.EAST	0.878	0.105	0.055	0.110	0.112	0.102	-0.005	-0.002	-0.084	0.884	[illegible]
19	ASIA	0.853	-0.020	-0.066	-0.126	0.115	0.117	-0.033	0.124	-0.055	-0.142	-0.035
20	SEASIA	0.831	0.013	0.104	0.005	-0.190	-0.161	0.073	-0.011	0.831	-0.116	[illegible]
21	AFR.	0.850	-0.210	-0.094	0.094	-0.033	0.050	-0.078	-0.627	-0.118	-0.189	-0.040
22	DIS.	0.646	-0.109	-0.010	0.225	-0.258	-0.040	0.151	-0.087	-0.215	0.160	[illegible]
23	FAV US	0.689	0.146	0.037	0.096	0.230	0.015	-0.035	-0.028	-0.177	-0.105	0.292
24	UNFAV.	0.757	-0.024	-0.167	-0.041	0.025	-0.362	0.057	0.244	0.259	0.157	[illegible]
25	MILVIC	0.776	0.039	-0.003	-0.030	-0.048	0.149	0.000	0.025	0.042	-0.053	0.109
26	STOP	0.823	-0.042	-0.073	-0.055	0.205	0.114	-0.027	-0.027	-0.033	0.098	[illegible]
27	TH.PER	0.766	0.256	0.168	-0.047	0.054	-0.117	0.029	-0.040	0.057	-0.090	0.015
28	TERROR	0.837	-0.044	-0.022	0.847	-0.055	-0.049	0.226	-0.065	-0.037	0.084	[illegible]
29	SABOT.	0.832	0.179	-0.000	0.857	0.009	-0.139	0.062	0.070	0.052	0.029	0.019
30	UNC.GR	0.651	0.083	0.448	0.294	0.039	0.032	0.078	0.175	0.257	0.004	[illegible]
31	REG.GR	0.722	0.664	0.102	-0.166	-0.053	0.125	0.043	0.269	0.125	0.169	0.153
32	REG.FR	0.710	0.694	-0.086	0.137	0.077	-0.118	-0.04[illegible]	-0.046	-0.208	-0.059	[illegible]
33	A/C	0.881	0.836	-0.023	-0.096	-0.048	-0.044	-0.055	0.083	0.059	0.216	0.165
34	AAA	0.853	0.776	0.053	-0.077	-0.003	-0.184	0.028	0.135	0.219	0.211	[illegible]
35	SML.CF	0.756	0.508	0.061	-0.022	-0.089	-0.081	0.020	-0.029	0.254	0.247	0.040
36	MED.CB	0.787	0.732	0.058	0.029	-0.252	-0.013	-0.017	-0.069	0.067	-0.095	[illegible]
37	LGE.CB	0.823	0.555	0.083	0.005	-0.096	-0.003	0.011	-0.239	0.031	-0.075	-0.030
38	SUBS	0.786	0.755	0.052	0.056	-0.009	0.063	0.016	-0.130	-0.117	0.022	[illegible]
39	MINE	0.723	0.700	-0.151	0.222	0.129	-0.266	0.038	0.023	-0.003	-0.167	-0.123
40	ACCESS	0.705	0.010	0.025	-0.036	0.009	0.076	0.030	0.036	-0.126	0.013	[illegible]

TABLE B-9 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 1

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER	1	2	3	4*	5*	6	7*	8	9	10
SUM SQUARES OVER VARIABLES		5.559	2.046	2.092	1.505	3.643	2.392	1.670	1.606	1.542	1.427
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS									
41	CVERT	0.746	0.251	0.037	0.072	-0.106	-0.323	0.213	-0.057	-0.077	0.091	-0.056
42	BORDER	0.792	0.012	0.109	-0.238	0.024	-0.085	-0.029	0.006	-0.025	0.121	-0.046
43	INCIL.	0.901	-0.025	0.030	0.024	-0.015	-0.002	0.054	0.019	-0.026	-0.013	-0.040
44	COVERT	0.767	-0.068	0.247	-0.024	-0.045	-0.582	0.081	-0.089	-0.093	0.154	-0.040
45	CRISIS	0.775	0.184	-0.075	0.095	0.041	-0.080	-0.049	0.093	0.040	-0.058	-0.029
46	UNAR	0.759	0.144	0.032	0.023	0.068	0.131	-0.011	-0.132	-0.085	0.007	0.062
47	CIV. W	0.757	0.006	0.020	0.025	-0.840	0.090	-0.031	0.052	0.171	-0.127	-0.007
48	GUER.W	0.865	-0.104	0.444	0.071	0.206	-0.300	0.139	-0.170	0.112	0.082	-0.216
49	REV.GP	0.829	-0.036	0.105	0.049	0.035	-0.032	-0.036	0.067	-0.042	0.048	0.854
50	REF.GP	0.886	-0.022	0.204	0.012	0.086	0.196	-0.029	0.175	-0.087	-0.114	-0.280
51	PAL. F	0.850	0.038	0.055	0.065	0.019	0.107	-0.023	0.076	-0.037	-0.048	-0.041
52	DOMEUN	0.836	-0.051	-0.848	0.065	0.034	0.093	-0.036	-0.023	-0.062	-0.026	-0.096

*Reverse signs of variables on this factor for proper interpretation

TABLE B-9 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 1

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13*	14	15	16	17*	18*	19	20
		SUM SQUARES OVER VARIABLES	1.351	1.781	1.611	1.403	1.421	1.564	2.349	1.147	1.507	2.291
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	US INV	0.715	-0.037	0.237	-0.006	-0.061	-0.089	-0.128	0.138	-0.169	0.259	0.241
2	SU INV	0.602	-0.019	-0.151	0.083	-0.032	0.121	0.079	0.035	0.058	0.192	0.035
3	CC INV	0.732	0.019	-0.352	-0.063	0.052	0.148	0.330	0.165	-0.088	-0.008	0.246
4	OC INV	0.614	-0.079	0.054	0.144	-0.040	-0.147	-0.210	-0.008	0.102	0.080	-0.002
5	UN INV	0.657	-0.033	-0.036	0.098	-0.019	0.069	0.026	0.049	0.063	0.051	0.570
6	TL.INV	0.617	-0.016	0.014	0.006	0.031	0.153	0.008	0.148	0.043	0.070	0.267
7	SE.INV	0.736	-0.013	0.344	-0.263	-0.073	-0.052	0.137	0.037	-0.186	0.148	0.289
8	GR.INV	0.625	-0.458	-0.088	0.029	0.118	0.062	-0.145	-0.004	0.023	0.105	0.092
9	AI.INV	0.667	-0.105	0.285	0.010	-0.027	0.222	0.163	0.032	-0.144	-0.020	0.138
10	DUR.	0.720	-0.110	0.127	0.296	-0.107	-0.224	0.148	0.460	-0.002	0.051	0.118
11	NO.DE.	0.931	-0.001	0.034	0.011	0.005	0.004	-0.031	0.062	0.015	-0.026	0.064
12	DE/POP	0.915	-0.023	-0.023	0.082	0.015	-0.029	-0.034	0.017	-0.090	-0.018	0.112
13	DE/DAY	0.683	-0.064	-0.141	-0.229	-0.030	-0.159	0.373	-0.079	0.010	-0.025	-0.099
14	COL.	0.701	-0.039	0.163	0.171	0.104	-0.025	-0.049	-0.006	-0.001	-0.039	0.207
15	E-W	0.689	-0.072	0.101	-0.029	0.025	0.105	0.022	0.073	-0.043	-0.205	0.109
16	L.AMER	0.853	0.141	0.303	-0.036	0.049	-0.084	-0.313	-0.111	-0.091	0.177	-0.006
17	EUP.	0.732	-0.053	-0.017	0.190	-0.099	-0.036	-0.084	-0.083	0.024	-0.165	-0.145
18	M.EAST	0.878	-0.056	0.024	0.072	0.054	0.082	-0.109	-0.030	0.019	-0.073	0.010
19	ASIA	0.853	-0.017	-0.058	0.055	-0.030	0.126	0.822	0.181	0.015	-0.099	0.152
20	SEASIA	0.831	-0.013	0.191	0.018	-0.001	-0.049	-0.054	-0.004	0.031	0.066	-0.009
21	AFR.	0.850	-0.044	-0.470	-0.194	-0.025	-0.043	-0.257	0.017	0.022	-0.010	-0.070
22	DIS.	0.646	-0.236	-0.060	0.389	-0.070	-0.046	-0.122	0.022	-0.126	0.253	0.311
23	FAV US	0.689	0.068	0.242	-0.256	-0.362	-0.009	-0.252	0.010	-0.228	0.210	0.233
24	UNFAV.	0.757	-0.109	-0.231	0.063	0.538	-0.027	0.063	-0.179	-0.013	-0.085	0.188
25	MILVIC	0.776	0.030	0.050	-0.081	-0.087	-0.098	-0.089	-0.828	-0.098	0.024	-0.028
26	STOP	0.823	0.090	0.122	0.006	-0.045	-0.028	-0.035	-0.838	0.087	0.056	-0.058
27	TH.PER	0.766	-0.010	0.054	0.016	0.097	-0.003	0.063	0.115	0.069	0.080	0.773
28	TERROR	0.837	0.004	-0.022	-0.018	0.032	-0.131	-0.039	0.071	-0.078	0.102	0.052
29	SABOT.	0.832	0.079	0.071	0.036	-0.023	-0.105	-0.065	0.037	0.044	0.016	-0.030
30	UNC.GR	0.651	0.076	-0.087	0.249	-0.068	0.104	-0.242	0.241	-0.090	-0.062	0.179
31	REG.GR	0.722	0.045	-0.116	-0.075	-0.070	0.191	-0.024	0.056	0.024	-0.055	0.109
32	NUC.FR	0.710	-0.211	0.013	0.239	-0.092	-0.015	-0.022	-0.093	0.027	0.032	0.040
33	A/C	0.861	0.084	0.024	-0.148	-0.009	-0.025	-0.003	0.008	-0.017	0.031	0.213
34	AAA	0.853	0.060	-0.006	-0.142	0.010	0.056	0.002	0.089	0.001	0.017	0.193
35	SML.CF	0.756	0.163	0.288	-0.333	0.067	0.037	-0.131	0.139	0.002	0.127	0.267
36	MED.CB	0.787	0.191	0.117	-0.220	0.153	-0.087	0.017	0.071	-0.051	0.127	0.142
37	LGE.CB	0.823	-0.030	0.032	0.144	0.390	-0.083	0.082	-0.048	0.016	0.474	-0.135
38	SUBS	0.786	0.026	-0.010	0.109	0.206	-0.061	0.106	-0.073	-0.007	0.286	0.092
39	MINE	0.723	-0.010	0.001	0.025	0.016	0.123	-0.009	-0.046	-0.025	-0.052	-0.041
40	ACCESS	0.705	0.022	-0.801	0.050	-0.046	0.032	0.085	0.130	-0.005	-0.035	-0.022

TABLE B-9 (Continued)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 1

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13 *	14	15	16	17 *	18*	19	20
SUM SQUARES OVER VARIABLES			1.351	1.781	1.611	1.403	1.421	1.564	2.349	1.147	1.507	2.291
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	OVERT	0.748	-0.020	0.032	0.001	-0.025	-0.130	0.119	-0.051	0.015	-0.157	0.661
42	BORDER	0.792	-0.000	-0.047	0.033	-0.015	0.816	0.086	0.130	0.017	-0.040	-0.049
43	INCID.	0.901	-0.015	0.008	0.040	0.018	-0.011	-0.011	-0.010	-0.941	-0.012	-0.076
44	COVERT	0.767	0.019	-0.017	0.068	-0.028	-0.429	-0.172	0.246	0.057	-0.157	0.018
45	CRISIS	0.775	-0.035	0.059	-0.043	-0.061	0.005	-0.104	-0.068	0.016	0.821	0.035
46	UNAR	0.759	0.004	0.127	-0.061	0.793	0.013	-0.070	0.173	-0.032	-0.002	0.030
47	CIV. W	0.797	-0.029	-0.004	0.059	-0.036	-0.017	-0.108	0.085	0.014	-0.044	0.036
48	GUER.W	0.865	-0.055	-0.044	0.285	-0.068	-0.387	0.047	0.380	-0.097	-0.055	-0.072
49	REV.CP	0.829	-0.066	0.090	0.120	0.028	-0.009	-0.024	-0.186	0.051	-0.035	-0.077
50	REF.CP	0.888	-0.226	0.048	-0.701	-0.029	-0.033	-0.068	-0.327	0.058	0.049	-0.080
51	PAL. R	0.830	0.879	-0.037	0.061	-0.012	0.016	-0.063	-0.124	0.019	-0.010	-0.010
52	DOMTUR	0.836	-0.136	-0.033	0.206	0.025	-0.035	-0.008	-0.037	0.004	0.088	-0.110

*Reverse signs of variables on this factor for proper interpretation

TABLE B-10

DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 1
UNKNOWN DEATHS ESTIMATED AS MEAN VALUES -- MIN. EIGENVALUE: 0.5
TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS	
1	7.611	14.6	14.6	13.9	13.9
2	4.698	9.0	23.7	5.1	19.0
3	2.960	5.7	29.4	5.2	24.2
4	2.697	5.2	34.6	3.8	28.0
5	2.163	4.2	38.7	9.1	37.1
6	2.037	3.9	42.7	6.0	43.1
7	1.872	3.6	46.3	4.2	47.3
8	1.694	3.3	49.5	4.0	51.3
9	1.558	3.0	52.5	3.9	55.2
10	1.467	2.8	55.4	3.6	58.8
11	1.411	2.7	58.1	3.4	62.2
12	1.381	2.7	60.7	4.5	66.7
13	1.183	2.3	63.0	4.0	70.7
14	1.152	2.2	65.2	3.5	74.2
15	1.129	2.2	67.4	3.6	77.8
16	1.120	2.2	69.6	3.9	81.7
17	1.093	2.1	71.7	5.9	87.6
18	1.000	1.9	73.6	2.9	90.5
19	0.917	1.8	75.3	3.8	94.3
20	0.834	1.6	77.0	5.7	100
21	0.790	1.5	78.5		
22	0.747	1.4	79.9		
23	0.730	1.4	81.3		
24	0.682	1.3	82.6		
25	0.668	1.3	83.9		
26	0.636	1.2	85.1		
27	0.632	1.2	86.4		
28	0.589	1.1	87.5		
29	0.562	1.1	88.6		
30	0.540	1.0	89.6		
31	0.494	1.0	90.6		
32	0.463	0.9	91.4		
33	0.440	0.8	92.3		
34	0.403	0.8	93.1		
35	0.389	0.7	93.8		
36	0.373	0.7	94.5		
37	0.328	0.6	95.2		
38	0.314	0.6	95.8		
39	0.293	0.6	96.3		
40	0.266	0.5	96.8		
41	0.244	0.5	97.3		
42	0.235	0.5	97.8		
43	0.222	0.4	98.2		
44	0.200	0.4	98.6		
45	0.174	0.3	98.9		
46	0.156	0.3	99.2		
47	0.143	0.3	99.5		
48	0.112	0.2	99.7		
49	0.075	0.1	99.9		
50	0.053	0.1	100.0		

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS
51	0.025	0.0	100.0	
52	0.000	0.0	100.0	

TRACE OF ORIGINAL MATRIX = 52.000
COMMUNALITY OVER 52 FACTORS = 51.952
20 FACTORS = 39.978

TABLE B-11
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 100
MISSING DATA DELETED -- MINIMUM EIGENVALUE: 0.5

ORTHOGONALLY ROTATED FACTOR MATRIX

	VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS	1	2	3*	4*	5	6*	7*	8	9	10
SUM SQUARES OVER VARIABLES				5.822	2.739	1.943	1.608	1.818	1.863	1.424	2.216	3.838	1.776
1	US	INV	0.766	0.055	0.028	0.123	0.115	-0.141	-0.150	-0.016	-0.245	0.623	0.106
2	SU	INV	0.763	0.297	0.156	-0.079	0.195	-0.114	-0.244	-0.189	0.190	0.273	0.033
3	CC	INV	0.802	0.144	0.194	-0.049	0.123	-0.617	0.111	-0.120	0.234	0.313	0.180
4	UC	INV	0.636	0.150	0.174	-0.006	0.034	0.016	-0.402	-0.070	-0.066	0.338	0.159
5	UN	INV	0.792	0.164	0.033	-0.099	-0.111	0.003	-0.049	0.029	-0.001	0.794	-0.045
6	TL.	INV	0.831	0.024	0.282	-0.074	0.197	0.005	-0.043	-0.470	0.062	0.594	-0.008
7	SF.	INV	0.772	0.161	0.098	-0.230	-0.195	-0.101	0.075	-0.157	-0.456	0.493	-0.071
8	GR.	INV	0.621	0.084	0.026	-0.102	-0.015	0.001	0.037	-0.067	0.073	0.029	0.004
9	AI.	INV	0.794	0.258	0.052	-0.439	-0.114	0.008	-0.003	-0.008	-0.436	0.316	0.091
10	DUR.		0.798	-0.136	0.369	-0.461	0.169	0.006	-0.034	-0.046	-0.240	0.090	-0.194
11	NO.	DE.	0.919	0.008	0.925	-0.068	0.033	-0.011	0.015	-0.104	-0.028	0.106	0.015
12	DE/	POP	0.910	-0.074	0.858	-0.070	0.030	-0.036	-0.052	-0.027	0.053	0.207	-0.033
13	DE/	DAY	0.738	0.185	0.399	0.030	-0.054	-0.143	0.185	-0.029	0.153	-0.135	0.445
14	COL.		0.828	-0.027	0.119	-0.148	0.150	0.106	-0.005	0.003	-0.142	0.140	-0.138
15	E-	W	0.714	0.281	0.175	0.014	0.047	-0.337	0.043	-0.125	-0.209	0.296	0.073
16	L.	AMER	0.853	-0.211	0.129	0.196	0.003	0.016	-0.292	0.294	-0.393	0.052	0.113
17	EUR.		0.860	0.200	-0.021	-0.086	-0.127	-0.007	0.002	0.162	-0.023	0.055	-0.145
18	M.	EAST	0.867	0.224	0.008	-0.120	0.183	0.771	0.162	0.106	0.080	0.062	0.063
19	ASIA		0.851	-0.025	-0.120	-0.053	0.219	-0.441	0.210	0.109	0.125	-0.028	-0.121
20	SEA	SIA	0.889	0.199	0.152	-0.165	-0.282	-0.193	-0.059	-0.740	-0.240	-0.044	-0.059
21	AFR.		0.876	-0.286	-0.138	0.179	-0.098	-0.255	-0.051	0.090	0.381	-0.073	0.060
22	DIS.		0.713	-0.195	0.172	-0.274	-0.113	0.174	-0.428	0.145	0.085	0.325	-0.258
23	FAV	US	0.763	0.236	0.029	0.040	0.142	-0.161	0.078	0.165	-0.186	0.229	0.113
24	UNFAV.		0.757	0.088	0.119	-0.011	-0.010	-0.160	-0.098	-0.039	0.025	0.200	0.227
25	MILVIC		0.855	-0.045	0.015	0.186	-0.161	-0.034	0.027	-0.028	-0.027	-0.153	0.085
26	STOP		0.847	-0.074	-0.067	0.024	0.259	0.190	-0.087	-0.001	-0.030	-0.005	0.068
27	TH.	PER	0.809	0.545	0.020	-0.151	0.057	-0.213	-0.058	0.105	-0.039	0.575	-0.165
28	TERROR		0.854	-0.041	0.343	-0.041	-0.037	0.065	0.035	0.058	-0.030	0.065	0.009
29	SABOT.		0.819	-0.100	0.111	-0.132	0.038	0.065	0.053	-0.100	-0.082	0.103	0.049
30	UNC.	GR	0.710	-0.060	0.100	-0.723	-0.067	0.068	-0.138	-0.176	0.049	0.091	-0.138
31	REG.	GR	0.746	0.709	0.076	-0.052	-0.154	0.126	0.118	0.002	0.202	-0.026	0.064
32	NUC.	FR	0.812	0.588	-0.073	0.134	0.079	0.128	-0.221	0.214	0.168	0.324	-0.179
33	A/C		0.900	0.880	-0.096	0.007	-0.036	0.087	0.037	0.064	-0.051	0.177	0.191
34	AAA		0.874	0.827	0.051	-0.143	0.039	0.033	0.006	-0.065	-0.012	0.164	0.252
35	SML.	CF	0.794	0.615	0.026	-0.105	0.019	0.015	-0.043	-0.139	-0.424	0.101	0.165
36	MED.	CB	0.848	0.761	-0.056	0.043	-0.146	-0.166	-0.058	-0.187	-0.237	0.026	-0.066
37	LGE.	CB	0.883	0.604	-0.027	0.069	0.009	-0.027	-0.416	-0.266	-0.075	-0.163	-0.122
38	SUBS		0.902	0.761	-0.000	0.172	0.085	-0.025	-0.306	-0.019	0.009	0.196	-0.201
39	MINF		0.790	0.377	0.376	-0.013	0.090	-0.269	-0.248	0.232	0.033	0.065	-0.167
40	ACCESS		0.773	-0.336	0.073	-0.062	0.014	-0.039	0.080	0.082	0.830	-0.030	0.022

TABLE B-11 (Cont.)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 100

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER	1	2	3	4	5	6	7	8	9	10
SUM SQUARES	OVER VARIABLES	5.822	2.739	1.943	1.608	1.818	1.863	1.424	2.216	3.838	1.776
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS									
41	GVERT	0.745	0.291	0.208	-0.068	-0.043	0.059	0.062	0.059	-0.007	0.720	-0.055
42	BORDER	0.824	0.044	-0.058	-0.032	0.050	0.095	0.082	0.034	-0.088	-0.110	-0.055
43	INCID.	0.867	-0.075	0.027	-0.093	0.003	-0.013	0.013	0.021	-0.052	-0.022	-0.027
44	COVERT	0.717	-0.215	0.157	0.034	0.036	-0.009	0.118	0.064	-0.105	0.461	0.043
45	CRISIS	0.835	0.217	-0.022	-0.072	-0.045	-0.068	-0.837	-0.040	-0.098	-0.006	0.057
46	UNAR	0.770	0.302	-0.007	0.111	0.075	0.122	0.077	0.103	-0.101	-0.137	-0.112
47	CIV. W	0.865	0.045	-0.061	-0.054	-0.918	-0.034	-0.042	-0.099	-0.035	0.039	-0.053
48	GUER.W	0.871	-0.213	0.210	-0.356	0.350	-0.040	0.010	0.075	-0.030	0.066	-0.246
49	REV.CP	0.873	0.077	-0.050	0.083	0.059	0.015	-0.049	0.051	-0.019	-0.050	0.895
50	REF.CP	0.878	0.035	-0.077	-0.007	0.064	-0.005	0.095	0.006	0.120	-0.170	-0.113
51	PAL. R	0.862	0.019	-0.030	-0.026	0.020	0.004	0.026	0.034	0.074	-0.071	-0.048
52	DEMTUR	0.798	-0.236	0.003	0.583	0.031	0.010	-0.109	-0.082	-0.058	-0.065	-0.148

*Reverse signs of variables on this factor for proper interpretation

TABLE B-11 (Cont.)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 100

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		11*	12*	13	14*	15*	16	17	18*	19	20*
SUM SQUARES OVER VARIABLES			1.959	2.221	1.571	1.766	1.615	1.243	1.548	2.286	1.878	1.286
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	US INV	0.766	0.107	-0.009	0.081	0.030	0.225	0.020	-0.084	-0.256	-0.236	-0.184
2	SU INV	0.783	0.156	-0.160	-0.077	-0.013	-0.087	-0.011	0.178	-0.557	-0.010	-0.006
3	CC INV	0.802	0.160	0.240	0.078	0.152	0.004	-0.040	0.107	0.070	-0.056	-0.011
4	OC INV	0.836	0.052	-0.204	0.075	-0.121	0.127	-0.013	0.098	-0.618	-0.014	-0.005
5	UN INV	0.792	0.067	0.055	-0.010	0.133	-0.246	-0.056	-0.068	-0.056	0.052	0.080
6	IL.INV	0.831	0.202	-0.127	0.102	-0.041	0.090	0.008	0.173	-0.132	-0.023	-0.048
7	SE.INV	0.772	0.013	-0.048	-0.094	-0.338	0.014	-0.064	-0.080	-0.008	0.014	-0.109
8	GR.INV	0.621	-0.055	-0.052	-0.009	0.089	0.008	0.006	0.120	0.015	-0.750	-0.002
9	AI.INV	0.794	0.043	-0.096	-0.104	-0.198	-0.073	-0.204	0.273	0.094	-0.134	-0.109
10	DUR.	0.798	0.202	-0.062	-0.059	0.279	-0.003	-0.060	-0.280	0.023	-0.254	0.146
11	NO.DE.	0.919	0.057	-0.158	0.003	0.007	-0.006	0.009	-0.025	-0.071	-0.015	0.019
12	DE/FUP	0.910	-0.007	-0.186	0.082	0.040	-0.060	-0.030	-0.035	-0.054	-0.043	-0.069
13	DE/DAY	0.738	-0.223	-0.038	-0.027	-0.074	-0.024	-0.131	-0.056	0.050	0.406	-0.007
14	COL.	0.828	0.018	0.004	0.061	0.133	-0.815	-0.100	-0.016	0.018	0.014	0.044
15	E-W	0.714	0.048	-0.320	-0.007	0.025	0.031	-0.038	0.100	-0.448	-0.118	0.042
16	L.AMER	0.853	0.037	0.172	-0.060	-0.464	0.273	0.028	-0.114	-0.011	-0.074	-0.261
17	EUR.	0.860	-0.119	-0.058	0.071	0.107	-0.006	-0.025	-0.091	-0.838	0.010	0.004
18	M.EAST	0.867	-0.062	-0.036	0.037	0.140	-0.010	-0.047	0.236	0.162	-0.103	0.051
19	ASIA	0.851	0.071	0.118	0.060	0.217	0.366	-0.112	0.047	0.109	0.516	0.084
20	SCASIA	0.889	-0.115	-0.037	-0.009	0.048	0.033	-0.072	-0.114	0.121	-0.115	0.068
21	AFR.	0.876	0.119	-0.172	-0.064	-0.018	-0.606	0.203	-0.051	0.009	-0.207	0.043
22	DIS.	0.713	-0.057	-0.222	0.014	0.150	-0.090	0.008	-0.051	0.213	-0.095	-0.052
23	FAV US	0.763	-0.065	-0.060	-0.522	-0.123	-0.227	0.240	-0.017	0.057	-0.170	-0.297
24	UNFAV.	0.757	-0.165	0.047	0.735	0.064	0.042	-0.031	0.036	-0.166	0.005	0.013
25	MILVIC	0.855	-0.863	-0.013	-0.049	-0.104	0.080	0.043	-0.070	0.011	-0.066	-0.127
26	STOP	0.847	-0.820	0.011	0.042	-0.065	-0.032	0.108	-0.068	-0.029	0.035	0.148
27	TH.PER	0.809	0.023	-0.074	0.099	0.081	-0.015	0.023	-0.004	0.092	-0.083	0.167
28	TERROR	0.854	0.006	-0.818	-0.058	0.088	-0.042	0.046	-0.101	-0.041	-0.091	-0.111
29	SABOT.	0.819	-0.003	-0.832	0.026	-0.020	-0.029	0.063	-0.034	-0.188	-0.045	0.067
30	UNC.GR	0.710	0.165	-0.098	-0.008	0.072	-0.044	0.087	0.066	-0.118	-0.034	-0.115
31	REG.GR	0.746	0.018	0.273	-0.075	-0.069	0.090	0.014	0.141	-0.142	0.007	0.034
32	NUC.FR	0.812	-0.151	-0.232	-0.186	0.133	0.037	-0.172	-0.002	-0.056	-0.017	-0.056
33	A/C	0.900	-0.041	0.091	-0.010	0.016	0.059	-0.045	0.017	-0.111	0.046	0.022
34	AAA	0.874	0.018	0.095	0.064	-0.017	0.084	0.043	0.151	-0.139	-0.008	0.031
35	SML.CF	0.794	0.193	0.046	0.066	-0.186	-0.074	0.176	0.131	-0.023	-0.112	0.139
36	MED.CB	0.848	0.106	0.004	0.109	-0.177	-0.013	0.162	-0.098	-0.153	-0.034	0.034
37	LGE.CB	0.833	0.057	-0.034	0.258	0.107	-0.169	-0.073	-0.211	-0.026	-0.047	-0.067
38	SUBS	0.902	0.016	-0.179	0.117	0.146	0.014	-0.136	-0.032	0.035	-0.118	-0.069
39	MINE	0.790	-0.025	-0.239	0.226	0.014	-0.041	-0.050	0.320	-0.243	0.017	0.019
40	ACCESS	0.773	0.066	0.113	-0.011	-0.154	0.051	0.056	-0.053	0.041	-0.073	0.040

TABLE B-11 (Cont.)
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 100

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER	11	12	13	14	15	16	17	18	19	20
SUM SQUARES OVER VARIABLES		1.959	2.221	1.571	1.766	1.615	1.243	1.548	2.286	1.878	1.286
VARIABLE NO.	NAME / COMMUNALITY 20 FACTORS										
41	OVERT 0.745	-0.045	-0.182	-0.078	0.054	-0.012	-0.026	-0.038	-0.177	0.017	-0.007
42	BORDER 0.824	0.144	0.113	-0.020	0.095	0.030	-0.029	0.843	-0.016	-0.132	0.038
43	INCID. 0.867	0.009	-0.023	-0.003	0.026	0.045	-0.019	-0.022	0.012	-0.008	-0.918
44	COVERT 0.717	0.150	-0.106	0.037	0.088	-0.083	-0.093	-0.301	-0.365	-0.325	0.113
45	CRISIS 0.835	-0.056	0.143	0.029	0.040	-0.010	-0.020	-0.056	-0.161	0.055	0.044
46	UNAR 0.770	0.232	-0.052	0.665	-0.058	-0.217	0.062	-0.080	0.132	-0.033	-0.103
47	CIV. W 0.885	0.059	0.001	0.003	0.043	0.070	-0.027	-0.041	-0.034	-0.043	0.007
48	GUER.W 0.671	0.101	-0.181	-0.048	0.309	-0.100	-0.220	-0.314	-0.178	-0.354	-0.073
49	REV.CP 0.873	-0.100	-0.054	0.065	0.093	0.090	-0.029	-0.043	0.036	-0.076	0.018
50	REF.CP 0.878	-0.168	0.034	-0.041	-0.860	0.074	-0.097	-0.067	0.062	0.053	0.065
51	PAL. R 0.862	-0.111	-0.083	-0.040	0.076	0.021	0.903	-0.019	0.038	-0.071	0.011
52	DOMTUR 0.798	-0.048	0.095	0.025	0.220	0.055	0.007	0.006	0.027	0.537	0.021

*Reverse signs of variables on this factor for proper interpretation

TABLE B-12
DATA ANALYSIS FOR MATRIX A (CONFLICT DATA) DEATHS ≥ 100
MISSING DATA DELETED -- MINIMUM EIGENVALUE: 0.5
TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS	
1	8.329	16.0	16.0	13.9	13.9
2	5.108	9.8	25.9	6.5	20.4
3	2.758	5.3	31.2	4.6	25.0
4	2.680	5.2	36.3	3.0	28.8
5	2.447	4.7	41.0	4.3	33.1
6	2.261	4.4	45.4	4.4	37.5
7	2.174	4.2	49.6	3.4	40.9
8	1.807	3.5	53.0	5.3	46.2
9	1.736	3.3	56.4	9.1	55.3
10	1.599	3.1	59.5	4.2	59.5
11	1.538	3.0	62.4	4.7	64.2
12	1.439	2.8	65.2	5.3	69.5
13	1.291	2.5	67.7	3.7	73.2
14	1.260	2.4	70.1	4.2	77.4
15	1.219	2.3	72.4	3.8	81.2
16	1.106	2.1	74.6	3.0	84.2
17	0.999	1.9	76.5	3.7	87.9
18	0.968	1.9	78.4	5.4	93.3
19	0.921	1.8	80.1	4.5	97.8
20	0.838	1.6	81.7	3.1	100
21	0.794	1.5	83.3		
22	0.762	1.5	84.7		
23	0.696	1.3	86.1		
24	0.666	1.3	87.4		
25	0.603	1.2	88.5		
26	0.519	1.0	89.5		
27	0.500	1.0	90.5		
28	0.485	0.9	91.4		
29	0.446	0.9	92.3		
30	0.424	0.8	93.1		
31	0.380	0.7	93.8		
32	0.359	0.7	94.5		
33	0.343	0.7	95.2		
34	0.320	0.6	95.8		
35	0.275	0.5	96.3		
36	0.248	0.5	96.8		
37	0.232	0.4	97.2		
38	0.219	0.4	97.7		
39	0.190	0.4	98.0		
40	0.164	0.3	98.3		
41	0.159	0.3	98.7		
42	0.135	0.3	98.9		
43	0.117	0.2	99.1		
44	0.109	0.2	99.3		
45	0.093	0.2	99.5		
46	0.061	0.1	99.6		
47	0.055	0.1	99.7		
48	0.046	0.1	99.8		
49	0.034	0.1	99.9		
50	0.029	0.1	100.0		

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (52) FACTORS		20 ROTATED FACTORS
51	0.022	0.0	100.0	
52	0.000	0.0	100.0	

TRACE OF ORIGINAL MATRIX = 52.000
COMMUNALITY OVER 52 FACTORS = 51.961
20 FACTORS = 42.476

TABLE B-13
DATA ANALYSIS FOR MATRIX B (NAVAL OPERATIONS)
MISSING DATA DELETED -- MINIMUM EIGENVALUE: 0.5

Orthogonally ROTATED FACTOR MATRIX

	VARIABLE	FACTOR 1*	2	3*	4	5	6	7	8	9	10	VARIABLE 11
PREVENT	1	0.07048	-0.07802	0.02981	-0.14754	-0.22415	0.03610	0.93900	-0.08311	-0.03463	-0.06628	1 -0.06682
REACT	2	-0.07049	0.07802	-0.02981	0.14755	0.22415	-0.03610	-0.93898	0.08311	0.03463	0.06628	2 0.06683
STABILIZE	3	-0.10522	-0.01626	0.00635	-0.01947	-0.46931	-0.21767	0.25621	0.02683	-0.13088	-0.06424	3 0.02404
DETER	4	-0.21891	-0.16421	-0.48082	0.01299	0.00815	0.19598	-0.03000	0.17740	0.23240	0.19190	4 0.05179
CONF CL	5	-0.12658	0.19662	-0.14644	0.05930	0.81816	0.06181	-0.26370	0.14387	-0.08431	0.05493	5 -0.11943
THREAT	6	-0.57004	0.11639	-0.38754	0.02348	0.04661	0.24300	-0.15169	0.07260	0.31725	0.17249	6 -0.02187
EVAL	7	0.19475	0.23690	0.09125	-0.06901	0.21137	0.01064	-0.29428	0.08349	0.09688	-0.22184	7 -0.26782
ANT PR	8	-0.24183	-0.02368	0.08794	0.02171	-0.02919	0.04667	0.00084	0.84068	-0.01762	-0.06803	8 -0.02081
SOF F	9	-0.26384	-0.04057	-0.19606	-0.01478	0.15343	0.11261	-0.16228	0.55072	-0.05176	0.11019	9 0.09272
INTV	10	-0.12771	0.09741	-0.04107	0.15769	0.78428	-0.00703	-0.08666	0.15221	-0.01934	0.07866	10 0.01870
INTP	11	-0.35340	-0.07199	-0.20857	-0.11041	-0.18431	-0.19461	-0.31895	0.13694	-0.03800	-0.12243	11 0.08993
SURV	12	-0.06678	-0.05940	-0.76595	-0.07885	0.08200	-0.03375	0.02386	-0.07095	-0.07998	-0.04477	12 -0.01837
MIL AST	13	-0.18518	0.20776	0.08449	0.02111	0.28762	-0.23356	-0.01424	-0.15023	0.17352	0.48204	13 -0.06117
COMBAT	14	-0.15925	0.19875	-0.25773	0.14261	0.71316	0.11280	-0.07169	0.11574	-0.09807	0.08482	14 0.06390
READY	15	-0.18384	0.10269	-0.16935	-0.06599	0.25554	0.63978	0.03347	0.35637	0.28856	-0.06740	15 -0.06459
TERROR	16	0.06686	-0.10929	0.17743	0.89333	0.18783	-0.06871	-0.16537	0.01051	-0.04137	-0.01675	16 0.08155
SABOT	17	0.01793	0.00705	0.17577	0.83062	0.17490	-0.12412	-0.07397	0.05025	0.00970	-0.09421	17 0.15270
UNC GRD	18	0.14899	-0.19267	-0.05038	0.37061	0.06992	-0.15654	-0.25736	0.08104	0.11581	-0.10398	18 0.74508
CYN GRD	19	-0.72319	0.13844	0.06309	-0.10777	0.03842	0.20288	-0.04614	0.36207	-0.10763	0.16180	19 -0.07962
NA GRD	20	-0.21269	0.12724	-0.17304	0.01107	0.09146	0.81506	0.03206	0.07907	0.15453	-0.14239	20 -0.12801
A/C	21	-0.80198	0.08592	-0.17370	-0.09623	0.13906	0.30182	0.01278	0.23564	-0.00692	0.01795	21 -0.03038
AAA	22	-0.82830	0.06450	-0.10031	0.01027	0.26581	0.11031	-0.01207	0.15611	0.08893	0.19438	22 0.10396
SML CBT	23	-0.57011	0.07180	-0.20342	0.05646	0.18615	0.00764	0.11942	0.01462	-0.15348	0.25452	23 -0.09110
MED CBT	24	-0.84858	0.08384	0.01793	-0.01454	-0.06737	0.21192	-0.10868	0.13308	-0.07005	-0.00605	24 -0.01277
LGE CBT	25	-0.24672	-0.09744	0.35081	-0.24620	0.00030	0.56247	0.04932	0.06915	-0.09300	0.06370	25 0.08375
SUB	26	-0.36465	0.23648	-0.00861	-0.10610	0.00033	0.81942	0.04022	0.10808	0.03905	0.17350	26 -0.06183
MINES	27	-0.31810	0.10413	0.01317	-0.16356	0.18907	0.09717	-0.09118	0.10987	0.04656	0.68707	27 0.01678
ACCESS	28	0.09325	0.03615	0.29061	-0.03324	0.00510	0.23989	-0.09674	-0.00236	0.67925	0.10198	28 0.08578
LENGTH	29	-0.12138	0.03614	-0.07970	0.08975	0.51188	-0.10692	0.06860	-0.24764	0.07752	0.14323	29 0.34989
CVA	30	-0.28998	0.07353	-0.09164	-0.11603	0.18225	0.11046	-0.08238	0.64195	0.06299	0.00323	30 0.13383
SUR ACT	31	-0.13074	0.36936	0.15306	-0.09042	0.22153	0.33434	-0.02677	0.43607	-0.30838	0.24369	31 0.02361
ASW	32	-0.05806	0.45654	-0.04968	-0.06944	0.40913	0.29759	-0.24924	0.31079	0.12315	0.28536	32 -0.01520
A/C PT	33	-0.01089	0.24412	-0.62987	-0.27723	0.21976	0.00301	0.01054	0.13926	-0.10992	-0.01915	33 0.14579
SUR PT	34	-0.20449	0.06747	-0.52218	-0.17401	0.13489	0.04498	-0.11012	-0.03037	-0.24946	-0.05346	34 -0.00917
AMPHIB	35	0.02221	0.24535	0.00492	0.23614	-0.02857	0.07336	-0.04747	0.57664	0.04471	0.01275	35 -0.16599
SERV	36	-0.21026	0.91527	0.11034	-0.05906	0.17067	0.02105	0.01858	0.01081	0.13680	-0.01507	36 -0.12205
MN FOR	37	-0.08389	0.66054	-0.24182	-0.04169	0.32894	0.27113	-0.19061	0.19295	-0.22230	0.20845	37 0.05073
SS FOR	38	-0.18484	0.58336	-0.34469	-0.03051	0.17051	0.28527	-0.18174	0.16152	-0.08962	0.35317	38 -0.15022

*Reverse signs of variables on this factor for proper interpretation

TABLE B-14
DATA ANALYSIS FOR MATRIX B (NAVAL OPERATIONS)
UNROTATED SOLUTION: EIGENVALUES, TOTAL VARIANCE, COMMUNALITY

EIGENVALUES FOR UNROTATED SOLUTION *

9.18090	4.01204	2.55684	2.52209	1.86956	1.62308	1.53801	1.06153	0.90606	0.72671
0.62809	0.39485	0.37128	0.28770	0.27338	0.19269	0.17117	0.10914	0.08444	0.05142
0.01539	0.00755	-0.01605	-0.01608	-0.03048	-0.04792	0.05026	-0.05558	-0.07666	-0.10644
-0.11292	-0.13929	-0.15112	-0.18882	-0.20059	-0.22856	-0.24195	-0.29722		

CUMULATIVE PROPORTION OF TOTAL VARIANCE FOR UNROTATED SOLUTION

0.24160	0.34718	0.41447	0.48084	0.53004	0.57275	0.61322	0.64116	0.66500	0.68413
0.70066	0.71105	0.72082	0.72839	0.73558	0.74065	0.74516	0.74803	0.75025	0.75160
0.75201	0.75221								

VARIABLE	ESTIMATED COMMUNALITY	FINAL COMMUNALITY
1	0.983972	0.983964
2	0.983931	0.983923
3	0.367590	0.367595
4	0.470674	0.470627
5	0.867595	0.867502
6	0.709623	0.709636
7	0.375925	0.375838
8	0.782351	0.782396
9	0.499228	0.499196
10	0.705081	0.705103
11	0.402642	0.402624
12	0.623142	0.623105
13	0.511357	0.511323
14	0.712390	0.712402
15	0.772106	0.772107
16	0.922090	0.922098
17	0.807572	0.807490
18	0.879956	0.880795
19	0.777758	0.777748
20	0.832006	0.832012
21	0.857407	0.857414
22	0.864286	0.864270
23	0.520575	0.520590
24	0.811751	0.811745
25	0.597412	0.597369
26	0.920453	0.920445
27	0.679075	0.679057
28	0.641730	0.641652
29	0.518902	0.518793
30	0.597589	0.597561
31	0.691878	0.691914
32	0.730608	0.730602
33	0.634870	0.634828
34	0.447760	0.447766
35	0.488543	0.488512
36	0.960710	0.961469
37	0.854439	0.854307
38	0.819135	0.819135

* Eigenvalues were not printed for the rotated solution by the program used.

TABLE B-15

DATA ANALYSIS FOR MATRIX AB (CONFLICT AND NAVAL OPERATIONS DATA)
MISSING DATA DELETED MIN. EIGENVALUE: 0.5

FACTORS

	FACTOR NUMBER		1	2*	3*	4	5	6*	7*
	SUM SQUARES OVER VARIABLES		7.672	8.738	6.108	7.352	3.942	4.225	3.822
VARIABLE NO.	NAME	COMMUNALITY 7 FACTORS							
	Variables								
1	US INV	0.523	0.189	-0.353	0.140	0.192	0.513	0.014	-0.207
2	SU INV	0.679	0.208	-0.436	0.004	0.516	0.117	0.245	-0.325
3	CC INV	0.838	0.291	-0.597	-0.126	0.040	0.014	0.037	-0.615
4	DC INV	0.656	-0.167	-0.522	-0.283	0.307	0.373	-0.202	0.032
5	UN INV	0.654	0.114	-0.343	-0.707	0.099	-0.095	-0.057	0.041
6	TL.INV	0.693	0.040	-0.800	-0.019	0.150	0.124	-0.055	-0.104
7	SE.INV	0.443	0.285	-0.390	-0.432	-0.029	0.138	-0.011	-0.056
8	GR.INV	0.488	0.063	-0.106	-0.375	-0.498	0.064	-0.259	0.117
9	AI.INV	0.662	0.356	-0.434	-0.581	-0.072	0.037	0.046	-0.021
10	DUR.	0.732	-0.139	-0.808	-0.179	-0.138	-0.017	0.061	0.074
11	NO.DE.	0.891	-0.025	-0.923	-0.071	-0.100	-0.149	-0.031	-0.022
12	DE/POP	0.897	0.015	-0.919	-0.094	-0.145	-0.134	-0.053	0.026
13	DE/DAY	0.725	0.272	-0.792	-0.075	-0.080	-0.078	-0.053	0.053
14	COL.	0.396	0.132	-0.294	-0.081	-0.033	-0.379	0.290	0.237
15	E-W	0.678	0.013	-0.471	-0.339	0.501	0.124	0.090	-0.257
16	L.AMER	0.701	-0.143	0.249	0.399	-0.358	0.517	-0.127	0.217
17	EUR.	0.708	-0.266	0.144	-0.423	0.641	-0.072	-0.009	0.145
18	M.EAST	0.224	0.171	0.093	0.047	0.128	-0.157	0.250	0.284
19	ASIA	0.870	0.338	0.113	-0.143	0.011	0.089	0.368	-0.761
20	SEASIA	0.740	0.008	-0.690	-0.044	0.035	-0.365	-0.321	-0.154
21	AFR.	0.274	-0.026	0.152	-0.141	-0.344	-0.315	0.106	-0.044
22	DIS.	0.493	0.205	-0.310	-0.222	-0.503	0.070	-0.130	0.176
23	FAV.US	0.604	0.112	0.389	0.575	-0.038	0.069	-0.090	0.308
24	UNFAV.	0.688	-0.026	-0.508	-0.538	0.130	-0.042	0.019	-0.347
25	MILVIC	0.381	0.172	0.210	0.063	-0.503	-0.200	0.065	-0.077
26	STOP	0.234	0.108	0.128	0.136	-0.232	-0.204	0.296	-0.071
27	PRE.	0.770	-0.437	-0.071	0.531	0.085	0.111	0.481	0.204
28	REA.	0.770	0.437	0.071	-0.531	-0.085	-0.111	-0.481	-0.204
29	STAB.	0.250	-0.423	0.113	-0.026	0.019	-0.091	0.217	-0.041
30	DETER.	0.359	0.115	-0.063	-0.368	0.337	0.211	0.179	0.125
31	CONCTL	0.674	0.693	-0.213	-0.071	0.066	0.267	-0.219	-0.138
32	TH.PER	0.624	0.273	-0.234	-0.362	0.555	0.111	0.186	-0.094
33	EVAC.	0.291	0.412	0.077	-0.066	-0.317	-0.102	-0.026	0.011
34	ANT.RE	0.498	0.255	0.260	0.088	0.539	-0.082	-0.245	0.032
35	S OF F	0.409	0.390	0.125	-0.235	0.390	0.124	-0.135	-0.009
36	INTV	0.567	0.544	-0.272	0.029	0.106	0.208	-0.353	-0.132
37	INTP	0.699	-0.190	0.214	-0.706	0.289	0.106	-0.115	-0.107
38	SURV	0.557	0.020	-0.004	-0.183	0.031	0.692	0.190	0.082
39	MIL.AS	0.466	0.184	-0.232	0.015	0.015	-0.138	0.050	-0.596
40	COMBAT	0.612	0.591	-0.266	0.001	0.153	0.303	-0.248	-0.118

*Reverse signs of loadings on this factor for proper interpretation.

TABLE B-15

DATA ANALYSIS FOR MATRIX AB (CONFLICT AND NAVAL OPERATIONS DATA)

(Continued)

			ROTATED FACTOR MATRIX						
			FACTORS						
	FACTOR NUMBER		1	2*	3*	4	5	6*	7*
SUM SQUARES OVER VARIABLES			7.672	8.738	6.108	7.352	3.942	4.225	3.822
VARIABLE NO.	NAME	COMMUNALITY 7 FACTORS							
41	RE.MEA	0.741	0.589	-0.056	0.002	0.434	-0.093	0.213	0.386
42	TERROR	0.620	0.086	-0.117	0.064	-0.110	-0.130	-0.746	0.101
43	SABOT.	0.674	0.068	-0.150	0.132	-0.026	-0.111	-0.780	0.094
44	UNC.GR	0.569	-0.084	-0.142	-0.226	-0.091	-0.008	-0.648	0.251
45	REG.GR	0.736	0.307	0.147	-0.096	0.723	-0.089	0.136	-0.249
46	NUC.FR	0.658	0.487	-0.002	0.054	0.414	-0.032	0.250	0.428
47	A/C	0.760	0.394	0.151	-0.105	0.719	0.120	0.196	-0.017
48	AAA	0.770	0.277	-0.066	-0.171	0.764	0.107	-0.056	-0.248
49	SML.CF	0.418	0.175	-0.104	-0.015	0.442	0.279	0.091	-0.309
50	MED.CB	0.650	0.158	0.128	-0.305	0.708	-0.009	0.075	-0.092
51	LGE.CB	0.367	0.119	0.094	0.127	0.447	-0.288	0.162	0.137
52	SUBS	0.724	0.505	0.032	0.034	0.516	-0.111	0.402	0.165
53	MINE	0.618	0.340	-0.144	-0.074	0.288	-0.081	0.163	-0.600
54	ACCESS	0.413	0.135	-0.107	-0.058	0.038	-0.598	0.064	0.131
55	DURUSN	0.436	0.081	-0.555	0.072	0.105	0.171	-0.223	-0.163
56	CVA	0.431	0.430	-0.008	-0.052	0.479	0.021	-0.104	0.049
57	SUR.A.	0.455	0.609	0.021	0.070	0.255	-0.012	0.030	-0.116
58	ASW	0.700	0.789	-0.107	-0.145	0.098	-0.052	0.020	-0.180
59	A/C PT	0.496	0.289	-0.060	-0.167	0.041	0.591	0.173	0.020
60	SUR.PT	0.520	0.196	0.128	-0.219	0.089	0.625	0.137	0.018
61	AMPHIB	0.283	0.423	0.194	0.079	0.130	-0.131	-0.147	0.062
62	SERV.	0.479	0.582	-0.067	-0.002	0.013	-0.121	0.299	-0.178
63	MINE F	0.727	0.771	-0.099	-0.087	0.055	0.222	0.093	-0.235
64	SUB. F	0.752	0.740	-0.035	-0.118	0.130	0.192	0.259	-0.262
65	OVERT	0.731	0.181	-0.511	-0.641	0.064	0.082	0.011	-0.122
66	BORDER	0.134	0.064	0.110	-0.024	0.112	0.016	-0.018	-0.322
67	INCID.	0.149	0.173	0.024	0.026	-0.260	-0.061	-0.114	0.183
68	COVERT	0.665	-0.157	-0.479	-0.550	-0.177	0.205	-0.013	0.187
69	CRISIS	0.640	-0.154	0.397	0.583	0.140	-0.258	-0.155	0.093
70	UNAR	0.155	-0.064	0.003	0.080	0.181	-0.008	0.329	0.064
71	CIV. W	0.662	-0.214	0.189	-0.727	0.191	0.014	-0.101	0.068
72	GUER.W	0.617	0.069	-0.608	-0.190	-0.358	0.040	-0.055	0.270
73	REV.CP	0.123	0.168	0.052	0.108	-0.042	0.227	-0.159	0.040
74	REF.CP	0.218	-0.089	0.250	0.163	-0.126	-0.315	0.048	-0.062
75	PAL. R	0.101	0.004	0.143	0.105	0.014	0.164	-0.194	0.071
76	DOMTUR	0.249	-0.140	0.218	0.289	-0.202	-0.064	-0.231	0.002

*Reverse signs of loadings on this factor for proper interpretation.

TABLE B-16

DATA ANALYSIS FOR MATRIX AB (CONFLICT AND NAVAL OPERATIONS DATA)
MISSING DATA DELETED MIN. EIGENVALUE: 0.5

TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (74) FACTORS UNROTATED FACTORS		7 ROTATED FACTORS	
1	13.205	17.4	17.4	18.3	18.3
2	8.974	11.8	29.2	20.8	39.1
3	5.197	6.8	36.0	14.5	53.6
4	4.241	5.6	41.6	17.5	71.1
5	3.705	4.9	46.5	9.4	80.5
6	3.529	4.6	51.1	10.1	90.6
7	3.016	4.0	55.1	9.1	99.7
8	2.408	3.2	58.3		
9	2.400	3.2	61.4		
10	2.143	2.8	64.2		
11	1.945	2.6	66.8		
12	1.780	2.3	69.1		
13	1.662	2.2	71.3		
14	1.546	2.0	73.4		
15	1.274	1.7	75.0		
16	1.204	1.6	76.6		
17	1.190	1.6	78.2		
18	1.104	1.5	79.6		
19	0.856	1.1	80.8		
20	0.841	1.1	81.9		
21	0.675	0.9	82.8		
22	0.672	0.9	83.7		
23	0.665	0.9	84.5		
24	0.658	0.9	85.4		
25	0.647	0.9	86.2		
26	0.633	0.8	87.1		
27	0.592	0.8	87.9		
28	0.536	0.7	88.6		
29	0.490	0.6	89.2		
30	0.434	0.6	89.8		
31	0.402	0.5	90.3		
32	0.399	0.5	90.8		
33	0.392	0.5	91.3		
34	0.386	0.5	91.9		
35	0.365	0.5	92.3		
36	0.353	0.5	92.8		
37	0.336	0.4	93.2		
38	0.325	0.4	93.7		
39	0.316	0.4	94.1		
40	0.291	0.4	94.5		
41	0.262	0.3	94.8		
42	0.217	0.3	95.1		
43	0.216	0.3	95.4		
44	0.183	0.2	95.6		
45	0.180	0.2	95.9		
46	0.171	0.2	96.1		
47	0.169	0.2	96.3		
48	0.167	0.2	96.5		
49	0.166	0.2	96.7		
50	0.164	0.2	97.0		

TABLE B-16 (Cont.)

DATA ANALYSIS FOR MATRIX AB (CONFLICT AND NAVAL OPERATIONS DATA)

TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (74) FACTORS	7 ROTATED FACTORS
51	0.157	0.2	97.2
52	0.155	0.2	97.4
53	0.151	0.2	97.6
54	0.147	0.2	97.8
55	0.143	0.2	98.0
56	0.123	0.2	98.1
57	0.122	0.2	98.3
58	0.118	0.2	98.4
59	0.115	0.2	98.6
60	0.097	0.1	98.7
61	0.096	0.1	98.8
62	0.093	0.1	99.0
63	0.092	0.1	99.1
64	0.088	0.1	99.2
65	0.087	0.1	99.3
66	0.086	0.1	99.4
67	0.084	0.1	99.5
68	0.074	0.1	99.6
69	0.073	0.1	99.7
70	0.061	0.1	99.8
71	0.050	0.1	99.9
72	0.050	0.1	99.9
73	0.043	0.1	100.0
74	0.006	0.0	100.0

TRACE OF ORIGINAL MATRIX = 76.000

COMMUNALITY OVER 76 FACTORS = 75.992

7 FACTORS = 41.867

TABLE B-17
DATA ANALYSIS FOR MATRIX C
MISSING DATA DELETED -- MIN. EIGENVALUE: 0.5

MAJOR ACTOR INFLUENCE DATA (COMPARED 1959)

ORTHOGONALLY ROTATED FACTOR MATRIX - 1959

FACTORS

SUM SQUARES OVER VARIABLES			FACTOR NUMBER	1	2*	3	4	5	6	7*	8	9	10
				10.098	5.255	7.020	5.404	5.863	4.510	3.417	4.142	2.931	2.283
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS											
1	CAD.SU	0.875		0.003	-0.159	-0.083	0.140	0.110	0.167	0.095	-0.010	0.125	-0.841
2	CAD.CC	0.821		-0.065	0.008	-0.107	0.189	0.237	-0.010	0.053	0.775	0.033	-0.172
3	AIN SU	0.873		-0.010	-0.153	-0.070	-0.106	0.143	-0.012	0.008	0.083	-0.005	-0.869
4	AIN CC	0.841		-0.039	0.028	-0.106	0.215	0.280	0.003	0.057	0.808	0.114	0.096
5	AIN EE	1.012		-0.022	0.109	0.010	-0.023	-0.047	-0.020	0.011	0.060	-0.058	-0.121
6	CP LST	0.998		0.194	-0.464	-0.024	-0.040	0.007	0.176	0.241	0.264	0.278	-0.181
7	SU CPO	0.934		0.192	-0.462	-0.145	-0.039	-0.164	0.056	0.152	-0.353	0.298	-0.271
8	CC CPO	0.937		-0.064	-0.034	0.354	-0.067	-0.103	0.034	0.039	0.829	0.097	0.072
9	CP SPL	0.874		-0.010	0.014	-0.098	0.051	0.865	0.029	0.049	0.101	0.141	-0.107
10	CP MEM	0.999		-0.066	-0.056	0.478	0.160	0.802	0.042	-0.072	0.010	0.022	-0.040
11	POP.	0.962		0.066	-0.092	0.004	0.916	0.228	0.056	0.032	0.114	0.107	-0.029
12	PR.FR.	0.643		0.079	0.274	0.237	-0.134	0.166	-0.207	-0.332	0.054	0.043	-0.065
13	MPTRSU	0.887		0.654	0.077	-0.039	0.009	-0.053	-0.154	-0.561	-0.031	0.019	-0.133
14	SUMPCY	0.951		0.889	0.070	-0.054	-0.063	0.166	-0.071	-0.273	-0.033	0.037	-0.009
15	SUCTCY	0.957		0.269	0.063	-0.043	0.736	-0.066	-0.111	-0.525	0.042	0.129	-0.001
16	SU MGR	0.872		0.035	0.045	-0.046	0.071	0.129	-0.002	-0.883	-0.015	0.108	0.101
17	CTTRSU	1.012		0.108	0.126	0.685	0.700	-0.005	-0.077	-0.018	0.035	0.029	0.006
18	R-IMSU	0.951		0.926	-0.044	-0.030	0.073	0.024	0.012	-0.203	0.000	0.146	0.003
19	R-EXSU	0.856		0.555	-0.025	-0.045	0.083	-0.006	0.091	-0.689	-0.005	0.126	0.026
20	NEWSSU	0.939		0.347	-0.038	0.175	0.196	0.215	0.216	-0.185	0.147	0.731	-0.178
21	DIP.SU	0.922		0.194	0.429	0.103	0.154	0.206	0.125	-0.092	0.101	0.586	0.038
22	BOR.SU	0.931		0.114	-0.076	-0.003	-0.007	-0.088	0.668	-0.626	-0.055	0.142	-0.016
23	DIS.SU	0.921		-0.259	-0.541	0.026	-0.141	0.057	-0.175	0.091	-0.055	-0.167	0.015
24	EAI.SU	0.945		0.505	0.071	-0.015	0.790	0.006	-0.121	-0.166	0.029	-0.005	0.036
25	STU.SU	1.057		0.192	-0.011	0.992	0.014	0.055	0.002	0.093	0.030	0.049	0.008
26	T-IMSU	0.956		0.833	-0.054	0.181	0.358	0.013	0.015	-0.242	0.027	0.093	0.055
27	T-EXSU	0.688		0.030	-0.108	-0.013	0.057	-0.038	-0.055	-0.037	-0.033	-0.018	-0.141
28	YE.IN.	0.815		0.223	-0.794	-0.097	0.119	-0.012	0.119	-0.106	-0.050	0.108	-0.144
29	RAND.1	0.845		0.096	0.026	0.118	0.050	0.034	0.028	0.183	0.028	0.027	-0.003
30	CCCTCY	0.855		0.008	0.096	0.034	-0.025	-0.059	-0.031	0.052	-0.040	0.180	-0.161
31	CTTRCC	0.937		-0.057	0.155	0.865	-0.070	-0.018	-0.053	0.008	0.072	0.161	0.045
32	R-IMCC	0.877		0.159	0.067	0.110	-0.095	0.836	-0.074	-0.000	0.162	0.237	0.004
33	R-EXCC	0.859		0.774	0.019	0.101	0.002	0.244	-0.105	0.173	0.074	0.137	0.089
34	NEWSCC	0.884		0.276	-0.069	0.196	-0.097	0.268	-0.085	-0.181	0.215	0.663	-0.095
35	DIP.CC	0.921		0.246	0.483	0.151	0.179	0.262	-0.181	-0.102	0.183	0.581	-0.053
36	BOR.CC	0.871		-0.029	0.014	0.385	0.370	-0.067	-0.125	-0.347	0.374	0.485	0.070
37	DIS.CC	0.911		-0.131	-0.271	-0.192	-0.153	-0.110	-0.200	0.160	-0.648	-0.341	-0.042
38	EAI.CC	1.062		-0.039	0.101	0.979	-0.008	-0.064	0.018	-0.003	0.018	0.059	0.010
39	STU.CC	1.135		-0.035	0.030	0.961	-0.044	0.403	-0.046	-0.037	-0.004	0.031	0.047
40	T-IMCC	1.043		0.269	0.027	0.112	0.082	0.956	-0.038	-0.006	0.101	0.105	-0.039

TABLE B-17 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1959)

ORTHOGONALLY ROTATED FACTOR MATRIX - 1959

			FACTORS								
	FACTOR NUMBER		1	*2	3	4	5	6	*7	8	9	10
SUM SQUARES OVER VARIABLES			10.098	5.255	7.020	5.404	5.863	4.510	3.417	4.142	2.931	2.283
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	T-EXCC	1.021	0.450	-0.017	0.144	0.190	0.860	-0.037	0.007	0.024	-0.008	-0.005
42	RAND.2	0.740	0.053	-0.134	-0.023	0.170	-0.075	-0.097	0.069	-0.043	-0.015	0.041
43	MPTREE	0.912	-0.020	0.045	-0.049	0.011	0.900	0.037	-0.105	0.047	-0.077	-0.094
44	EEMPCY	0.912	0.832	-0.083	-0.059	-0.080	0.319	-0.121	-0.046	0.002	-0.005	-0.078
45	EECTCY	0.922	0.816	0.115	-0.003	0.100	0.139	0.089	-0.347	-0.062	0.103	-0.057
46	EE MGR	0.930	-0.008	0.137	0.001	0.031	-0.016	-0.049	0.011	-0.045	-0.025	0.050
47	CTTREE	0.911	0.922	0.051	-0.015	0.059	0.034	-0.129	0.032	0.003	-0.078	0.099
48	R-IMEE	0.968	0.657	-0.014	0.120	-0.002	-0.024	0.166	0.090	-0.110	0.094	-0.063
49	R-EXEE	0.838	0.750	0.001	0.134	-0.026	-0.096	0.244	0.143	-0.073	0.147	-0.045
50	NEWSEE	0.729	0.076	-0.209	0.342	-0.024	0.240	0.495	-0.059	-0.175	0.097	-0.159
51	DIP.EE	0.859	0.132	-0.034	0.087	0.136	0.147	0.006	-0.052	-0.589	0.356	-0.111
52	BOR.EE	0.853	0.082	-0.005	-0.002	0.012	-0.033	0.853	0.073	-0.095	0.029	-0.006
53	DIS.EE	0.893	-0.231	-0.532	0.084	-0.081	0.178	-0.119	0.053	0.209	-0.009	-0.009
54	EAI.EE	0.984	0.026	0.112	-0.016	0.947	0.092	-0.005	0.033	0.017	-0.047	-0.010
55	STU.EE	1.087	0.517	0.006	0.864	0.036	0.192	-0.025	0.110	0.014	0.022	0.050
56	T-IMEE	0.984	0.853	-0.067	0.122	0.260	0.029	0.244	0.139	-0.068	0.086	-0.101
57	T-EXEE	0.932	0.887	-0.073	0.091	0.156	0.007	0.159	0.149	0.007	0.037	0.017
58	RAND.3	0.768	-0.087	-0.072	-0.142	-0.123	-0.090	-0.002	-0.177	-0.019	0.073	-0.132
59	MPTRUS	0.830	-0.031	-0.029	-0.073	-0.005	-0.030	0.736	0.025	0.414	-0.204	-0.010
60	USMPCY	0.773	-0.066	-0.237	-0.067	-0.039	0.009	0.325	0.108	0.061	-0.075	0.480
61	USCTCY	0.878	-0.125	-0.041	-0.140	0.164	0.060	0.533	-0.214	0.259	-0.035	-0.048
62	US MGR	0.934	0.030	0.037	-0.042	-0.007	-0.054	0.946	-0.008	-0.023	0.067	-0.035
63	CTTRUS	0.796	-0.095	-0.189	-0.144	0.387	0.347	0.484	0.027	0.181	-0.067	-0.007
64	R-IMUS	0.949	-0.068	-0.938	-0.092	-0.036	-0.021	-0.066	0.086	-0.089	-0.033	0.025
65	R-EXUS	0.877	-0.085	-0.870	-0.072	-0.027	-0.003	0.107	-0.059	-0.053	-0.106	-0.085
66	NEWSUS	0.712	0.159	-0.270	-0.137	0.099	0.078	0.257	0.095	0.181	0.120	0.006
67	DIP.US	0.992	0.037	-0.067	-0.987	0.027	0.015	0.020	0.037	-0.008	-0.029	-0.033
68	BOR.US	0.916	-0.063	-0.157	-0.011	0.019	-0.006	-0.034	-0.000	-0.024	0.072	-0.013
69	DIS.US	0.731	0.075	0.471	0.086	0.067	0.193	0.088	-0.088	0.590	0.238	0.103
70	EAI.US	0.846	0.084	-0.065	-0.082	0.653	0.005	0.464	0.091	0.238	0.128	0.017
71	STU.US	0.853	0.086	-0.453	-0.062	0.620	-0.005	0.239	0.014	0.125	0.102	-0.101
72	T-IMUS	0.924	0.048	-0.464	-0.018	0.246	-0.030	0.039	0.091	-0.068	-0.004	-0.179
73	T-EXUS	0.833	-0.024	-0.458	-0.017	0.134	0.043	0.025	0.061	-0.004	-0.112	-0.258
74	RAND.4	0.663	0.101	0.186	0.093	0.253	-0.041	0.108	-0.236	-0.150	-0.018	0.030

*Reverse the signs of the loadings in this column for proper interpretation.

TABLE B-17 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1959)

ORTHOGONALLY ROTATED FACTOR MATRIX - 1959

VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS	FACTORS 11	12	13	14	15	16	17	18	19	20
SUM SQUARES OVER VARIABLES			1.694	1.444	1.685	1.347	1.304	1.300	1.943	1.345	1.212	2.179
1	CAD.SU	0.875	0.056	-0.062	-0.039	0.115	-0.059	-0.018	-0.019	-0.042	0.100	0.116
2	CAD.CC	0.821	-0.026	-0.035	0.010	-0.017	-0.257	0.008	0.055	-0.083	-0.016	0.027
3	AIN SU	0.873	0.096	0.053	0.003	-0.103	-0.119	-0.034	0.019	-0.002	0.048	0.097
4	AIN CC	0.841	-0.066	-0.003	0.004	-0.030	-0.094	-0.014	0.097	-0.005	0.017	0.005
5	AIN EE	1.012	0.001	-0.033	-0.017	0.022	-0.983	-0.010	-0.037	-0.071	-0.004	-0.014
6	CP LST	0.998	-0.440	-0.064	-0.164	-0.113	-0.037	-0.059	0.016	0.477	-0.056	0.039
7	SU CPO	0.934	-0.417	-0.089	-0.115	-0.067	-0.048	0.036	0.025	0.318	0.031	0.121
8	CC CPO	0.937	0.020	0.009	-0.087	-0.043	0.171	0.016	0.054	0.149	-0.067	0.136
9	CP SPL	0.874	-0.025	-0.129	0.074	0.001	0.009	0.012	0.025	-0.160	0.002	-0.137
10	CP MEM	0.999	0.011	0.081	-0.027	0.005	-0.010	-0.190	0.089	0.156	-0.084	0.052
11	POP.	0.962	-0.045	0.027	-0.038	0.002	0.006	0.001	0.031	0.108	-0.045	0.100
12	PR.FR.	0.643	0.216	-0.029	0.208	-0.179	-0.032	0.043	-0.358	0.146	-0.086	-0.125
13	MPTRSU	0.887	-0.082	-0.020	-0.035	0.046	0.041	-0.065	-0.183	0.106	-0.063	-0.165
14	SUMPCY	0.951	0.118	0.115	-0.050	0.002	0.002	-0.016	-0.075	0.033	-0.047	0.005
15	SUCTCY	0.957	-0.005	-0.029	-0.050	0.034	-0.022	-0.006	-0.094	-0.018	-0.000	-0.105
16	SU MGR	0.872	0.018	-0.087	-0.060	0.015	-0.008	-0.112	0.039	-0.113	-0.032	-0.057
17	CTTRSU	1.012	-0.023	0.074	0.020	0.002	-0.007	0.006	-0.046	0.049	-0.028	-0.066
18	R-IMSU	0.951	-0.029	0.001	0.069	-0.028	0.036	0.082	-0.075	0.045	0.019	0.002
19	R-EXSU	0.856	-0.067	-0.017	0.017	-0.054	0.048	0.090	-0.032	-0.117	0.059	0.045
20	NEWSSU	0.939	0.123	0.028	-0.045	-0.087	0.063	-0.008	-0.064	-0.016	-0.011	0.001
21	DIP.SU	0.922	0.078	0.086	0.121	0.178	0.016	0.057	-0.420	-0.020	-0.038	-0.035
22	BOR.SU	0.931	0.021	-0.026	0.036	-0.022	0.002	0.134	-0.085	-0.074	0.092	-0.010
23	DIS.SU	0.921	-0.001	-0.076	0.059	0.045	-0.008	-0.030	0.658	0.012	0.098	0.111
24	EAI.SU	0.945	-0.020	0.003	-0.043	-0.007	-0.016	0.041	-0.080	0.015	0.001	-0.070
25	STU.SU	1.057	-0.107	-0.025	0.041	-0.004	0.025	-0.015	-0.013	-0.051	-0.013	-0.052
26	T-IMSU	0.956	0.006	-0.008	-0.067	-0.026	-0.056	0.084	0.007	0.007	0.083	0.057
27	T-EXSU	0.688	-0.040	0.116	-0.006	-0.046	-0.016	-0.111	0.084	0.164	0.761	0.046
28	YE.IN.	0.815	-0.053	-0.026	-0.136	0.024	0.131	0.045	0.073	0.053	0.021	0.014
29	RAND.1	0.845	-0.011	0.848	0.029	-0.013	0.072	-0.107	-0.079	0.012	0.167	-0.106
30	CCCTCY	0.855	0.872	-0.048	-0.041	-0.027	-0.011	-0.063	-0.012	0.050	-0.029	-0.052
31	CTTRCC	0.937	0.319	-0.044	-0.069	-0.045	0.056	0.073	-0.021	0.018	0.007	0.027
32	R-IMCC	0.877	0.000	-0.008	0.007	-0.025	0.087	0.149	-0.080	0.005	0.008	0.058
33	R-EXCC	0.859	-0.030	-0.234	-0.022	-0.011	0.022	0.214	0.039	-0.105	0.041	-0.032
34	NEWSCC	0.884	0.198	0.073	-0.084	0.213	0.095	-0.069	0.122	-0.043	-0.037	0.140
35	DIP.CC	0.921	0.082	-0.118	0.144	-0.016	-0.036	-0.016	-0.159	0.085	-0.078	-0.073
36	BOR.CC	0.871	-0.098	-0.055	0.009	0.031	-0.005	-0.034	0.093	-0.144	0.096	-0.104
37	DIS.CC	0.911	0.034	0.019	0.126	-0.016	-0.143	-0.054	0.310	-0.054	0.063	0.031
38	EAI.CC	1.062	0.142	0.064	0.116	0.015	-0.053	-0.135	0.028	0.100	-0.080	-0.078
39	STU.CC	1.135	-0.083	0.075	-0.085	0.022	0.009	0.093	-0.043	0.020	0.063	0.059
40	T-IMCC	1.043	-0.076	0.010	-0.035	0.015	0.012	0.037	-0.035	0.004	0.030	0.033

TABLE B-17 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1959)

ORTHOGONALLY ROTATED FACTOR MATRIX - 1959

			FACTORS									
		FACTOR NUMBER	11	12	13	14	15	16	17	18	19	20
SUM SQUARES		OVER VARIABLES	1.694	1.444	1.685	1.347	1.304	1.300	1.943	1.345	1.212	2.179
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	T-EXCC	1.021	-0.070	0.041	-0.080	-0.010	-0.010	0.051	0.026	0.035	0.038	0.044
42	RAND.2	0.740	-0.053	-0.148	-0.027	0.111	0.018	0.776	-0.008	0.047	-0.128	-0.087
43	MPTREE	0.912	0.093	0.069	0.008	-0.001	-0.025	-0.182	0.053	0.098	-0.063	0.068
44	EEMPCY	0.912	0.061	0.120	-0.043	0.011	-0.066	-0.132	-0.040	0.169	-0.080	-0.031
45	EECTCY	0.922	0.042	0.023	0.056	0.017	-0.011	-0.146	-0.158	0.054	-0.063	-0.088
46	EE MGR	0.930	0.010	0.058	0.947	-0.027	-0.002	-0.021	0.030	0.002	-0.015	-0.010
47	CTTREE	0.911	-0.044	0.082	-0.043	0.005	-0.039	0.071	-0.036	0.016	0.010	0.004
48	R-IMEE	0.968	-0.092	-0.049	0.649	0.004	0.059	-0.036	-0.132	0.037	-0.026	-0.071
49	R-EXEE	0.838	0.285	-0.024	0.203	-0.015	0.050	-0.076	0.036	0.051	-0.035	-0.027
50	NEWSEE	0.729	-0.009	-0.037	0.009	-0.097	0.019	-0.055	0.217	-0.044	0.005	0.357
51	DIP.EE	0.859	0.023	-0.138	0.085	-0.092	-0.027	0.128	0.085	0.103	-0.427	0.226
52	BOR.EE	0.853	-0.006	-0.115	-0.001	0.082	0.071	-0.207	-0.087	-0.025	-0.030	-0.157
53	DIS.EE	0.893	0.039	-0.089	-0.017	0.018	0.016	-0.010	0.651	0.039	0.024	0.116
54	EAI.EE	0.984	0.102	0.076	0.137	0.006	0.021	0.081	-0.002	-0.103	0.070	0.066
55	STU.EE	1.087	-0.098	0.028	0.029	-0.033	0.039	0.005	0.012	-0.053	0.046	-0.001
56	T-IMEE	0.984	-0.164	-0.034	0.054	-0.025	0.005	0.008	0.013	-0.062	0.047	0.173
57	T-EXEE	0.932	-0.108	0.041	-0.011	-0.017	0.067	-0.042	0.082	-0.054	0.043	0.163
58	RAND.3	0.768	-0.072	0.005	-0.057	-0.155	-0.120	-0.074	0.042	-0.723	-0.285	0.007
59	MPTRUS	0.830	0.001	0.052	0.040	-0.035	0.003	-0.006	-0.016	0.070	-0.085	0.221
60	USMPCY	0.773	0.031	-0.052	0.001	-0.131	-0.192	-0.070	-0.494	0.144	-0.004	0.149
61	USCTCY	0.878	-0.075	0.389	-0.076	-0.176	-0.060	0.428	-0.030	0.026	0.046	0.165
62	US MGR	0.934	-0.031	0.091	-0.010	-0.033	-0.016	0.009	-0.109	-0.001	-0.025	0.051
63	CTTRUS	0.796	-0.034	0.159	-0.072	0.051	-0.122	0.050	0.189	0.074	-0.109	0.290
64	R-IMUS	0.949	-0.053	0.026	0.033	0.054	-0.012	0.029	-0.010	0.009	0.061	0.142
65	R-EXUS	0.877	0.011	-0.002	-0.039	0.085	0.027	0.103	0.122	-0.073	0.037	0.170
66	NEWSUS	0.712	-0.094	0.041	-0.052	-0.003	-0.019	-0.094	0.119	0.160	0.149	0.611
67	DIP.US	0.992	0.033	-0.029	-0.018	-0.024	0.039	0.021	-0.035	-0.030	0.013	0.022
68	BOR.US	0.916	-0.015	0.008	-0.027	0.910	-0.026	0.086	0.048	0.097	-0.041	0.170
69	DIS.US	0.731	0.104	0.009	0.038	0.008	0.018	0.010	-0.089	0.052	0.006	0.004
70	EAI.US	0.846	-0.060	-0.006	-0.018	0.023	0.020	0.102	0.050	0.176	0.038	0.234
71	STU.US	0.853	-0.110	-0.015	-0.024	0.034	0.068	0.142	-0.151	0.019	0.001	0.310
72	T-IMUS	0.924	-0.015	-0.167	-0.034	0.355	0.015	0.039	-0.002	-0.044	-0.028	0.662
73	T-EXUS	0.833	-0.030	-0.126	0.006	0.257	0.041	-0.099	0.006	-0.137	-0.070	0.633
74	RAND.4	0.663	-0.108	0.431	0.140	0.125	-0.154	-0.162	0.142	-0.159	-0.354	-0.001

TABLE B-18
DATA ANALYSIS FOR MATRIX C, 1959
POSITIVE EIGENVALUES AND COMMUNALITIES

MAJOR ACTOR INFLUENCE DATA (COMPARED 1959)

TABLE OF POSITIVE EIGENVALUES

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (74) FACTORS		20 ROTATED FACTORS	
1	13.541	18.3	18.3	15.3	15.3
2	8.362	11.3	29.6	8.0	23.3
3	7.106	9.6	39.2	10.6	33.9
4	5.757	7.8	47.0	8.2	42.1
5	4.918	6.6	53.6	8.9	51.0
6	4.035	5.5	59.1	6.8	57.8
7	3.209	4.3	63.4	5.2	63.0
8	3.088	4.2	67.6	6.3	69.3
9	2.430	3.3	70.9	4.4	73.7
10	1.997	2.7	73.6	3.5	77.2
11	1.685	2.3	75.9	2.6	79.8
12	1.513	2.0	77.9	2.2	82.0
13	1.454	2.0	79.9	2.6	84.6
14	1.313	1.8	81.6	2.0	86.6
15	1.230	1.7	83.3	2.0	88.6
16	1.107	1.5	84.8	2.0	90.6
17	1.004	1.4	86.2	2.9	93.5
18	0.933	1.3	87.4	2.0	95.5
19	0.873	1.2	88.6	1.8	97.3
20	0.837	1.1	89.7	3.3	100
21	0.800	1.1	90.8		
22	0.773	1.0	91.9		
23	0.717	1.0	92.8		
24	0.693	0.9	93.8		
25	0.617	0.8	94.6		
26	0.557	0.8	95.3		
27	0.514	0.7	96.0		
28	0.419	0.6	96.6		
29	0.382	0.5	97.1		
30	0.327	0.4	97.6		
31	0.313	0.4	98.0		
32	0.300	0.4	98.4		
33	0.261	0.4	98.7		
34	0.256	0.3	99.1		
35	0.254	0.3	99.4		
36	0.248	0.3	99.8		
37	0.228	0.3	100.1		
38	0.179	0.2			
39	0.166	0.2			
40	0.163	0.2			
41	0.160	0.2			
42	0.157	0.2			
43	0.155	0.2			
44	0.142	0.2			
45	0.133	0.2			
46	0.122	0.2			
47	0.120	0.2			
48	0.115	0.2			
49	0.054	0.1			
50	0.049	0.1			
51	0.045	0.1			
52	0.043	0.1			
53	0.042	0.1			
54	0.036	0.0			
55	0.031	0.0			
56	0.030	0.0			
57	0.028	0.0			
58	0.027	0.0			
59	0.025	0.0			
60	0.020	0.0			
61	0.019	0.0			
62	0.014	0.0			

TRACE OF ORIGINAL MATRIX = 74.000
COMMUNALITY OVER 74 FACTORS = 73.992
20 FACTORS = 66.392

TABLE B-19
DATA ANALYSIS FOR MATRIX C
MISSING DATA DELETED -- MINIMUM EIGENVALUE: 0.5

MAJOR ACTOR INFLUENCE DATA (COMPARED 1961)`

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	1	2	3	4*	5*	6*	7*	8*	9	10
SUM SQUARES OVER VARIABLES			13.182	5.725	4.192	3.900	5.370	3.099	4.483	4.291	2.151	2.061
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	CAD.SU	0.834	-0.126	-0.003	-0.086	0.071	-0.104	0.070	0.136	-0.007	-0.091	0.843
2	CAD.CC	0.786	-0.034	0.073	-0.139	0.092	-0.054	0.033	0.056	0.014	0.126	0.299
3	AIN.SU	0.862	-0.069	0.008	0.236	0.008	-0.132	-0.020	0.081	0.022	-0.057	0.785
4	AIN.CC	0.785	-0.017	0.152	-0.044	0.062	-0.116	-0.061	0.024	-0.008	0.139	0.117
5	AIN.EE	0.929	0.005	-0.014	-0.113	0.023	0.012	0.009	0.030	0.026	-0.049	0.108
6	AIN.US	0.957	0.953	-0.025	0.004	0.170	-0.016	0.002	0.012	0.002	-0.012	-0.016
7	CP LST	0.827	0.005	0.145	0.716	-0.012	0.045	-0.194	0.199	-0.201	0.090	-0.018
8	SU CPO	0.825	-0.005	0.078	0.051	0.014	0.050	-0.099	-0.048	-0.053	0.013	0.122
9	CC CPO	0.780	0.054	0.017	0.037	-0.464	-0.479	-0.071	0.102	0.119	-0.011	-0.156
10	CP SPL	0.814	0.002	0.419	-0.033	-0.000	0.069	0.086	-0.024	-0.082	-0.030	0.047
11	CP NEU	1.001	-0.034	0.112	0.029	0.002	0.003	0.031	0.053	-0.065	-0.004	0.013
12	CP MEM	1.027	0.058	0.194	0.033	-0.498	-0.757	0.013	0.024	-0.109	0.004	-0.017
13	POP.	0.939	0.017	0.850	0.027	-0.012	-0.096	0.042	-0.091	-0.130	0.042	-0.057
14	PR.FR.	0.801	0.234	-0.307	-0.202	-0.083	-0.215	0.046	-0.225	-0.294	0.070	-0.196
15	MPTRSU	0.950	0.619	0.023	0.011	0.106	-0.698	0.018	-0.136	-0.105	0.039	0.025
16	SUMPCY	0.831	0.610	-0.037	-0.010	0.160	-0.269	0.042	-0.288	-0.208	-0.074	0.081
17	SUCTCY	0.962	0.213	0.083	-0.071	-0.009	-0.103	0.058	-0.805	-0.212	-0.053	-0.073
18	SU MGR	0.916	0.116	0.034	0.041	0.055	-0.898	-0.010	-0.070	-0.104	0.016	0.039
19	CTTRSU	0.984	0.946	0.137	-0.063	-0.155	-0.001	0.020	-0.041	-0.069	-0.036	-0.045
20	R-IMSU	0.997	0.725	-0.060	0.039	-0.057	0.020	-0.044	-0.654	-0.095	-0.014	0.015
21	R-EXSU	0.973	-0.000	0.052	0.078	0.001	-0.132	-0.025	-0.897	-0.167	-0.022	-0.048
22	NEWSSU	0.831	0.179	0.206	0.035	-0.082	-0.113	-0.099	-0.186	-0.771	0.099	-0.045
23	DIP.SU	0.814	0.119	0.125	-0.147	-0.077	-0.075	-0.042	-0.155	-0.806	0.060	0.051
24	BOR.SU	0.929	-0.013	0.051	0.016	0.024	0.053	-0.589	-0.562	-0.049	0.004	0.013
25	DIS.SU	0.877	0.082	-0.037	0.451	0.001	-0.037	0.100	0.145	0.399	0.081	0.190
26	EAI.SU	0.902	0.040	0.369	-0.138	0.032	0.053	0.029	-0.789	-0.156	0.033	-0.095
27	STU.SU	1.004	0.575	-0.026	-0.014	-0.717	0.013	0.053	-0.059	-0.176	-0.005	0.059
28	T-IMSU	1.069	0.989	0.148	0.015	-0.066	-0.023	-0.035	-0.165	-0.078	0.010	0.068
29	T-EXSU	1.056	0.996	0.153	0.017	-0.079	-0.075	-0.013	-0.086	-0.030	-0.021	0.038
30	YE.IN.	0.906	0.112	0.254	0.862	0.033	-0.029	-0.128	-0.095	-0.107	0.019	-0.019
31	RAND.I	0.907	0.033	0.011	-0.078	0.044	-0.022	0.016	0.093	-0.100	-0.037	0.073
32	MPTRCC	1.029	0.094	-0.028	-0.066	-0.987	-0.001	0.022	0.028	-0.123	-0.063	-0.072
33	CCMPCY	1.019	0.843	-0.063	-0.026	-0.543	0.007	0.002	0.019	-0.044	0.035	-0.043
34	CCCTCY	0.808	0.121	-0.164	-0.119	-0.227	0.059	0.053	0.020	-0.342	0.063	-0.242
35	CC MGR	0.928	0.945	-0.025	0.016	0.143	-0.019	0.005	0.047	0.002	0.011	-0.017
36	CTTRCC	0.937	0.881	-0.070	-0.011	-0.304	0.005	0.038	0.066	-0.137	-0.037	-0.118
37	R-IMCC	0.925	0.688	-0.098	-0.002	-0.035	-0.144	0.027	0.028	-0.105	0.470	-0.161
38	R-EXCC	0.884	0.524	-0.102	-0.000	-0.013	-0.192	0.080	0.001	-0.088	0.665	-0.076
39	NEWSCC	0.865	0.211	0.150	0.008	-0.059	-0.178	0.106	-0.216	-0.698	0.133	-0.029
40	DIP.CC	0.880	0.206	0.047	-0.128	-0.074	-0.127	0.070	-0.248	-0.691	0.165	-0.056

TABLE B-19 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1961)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		1	2	3	4*	5*	6*	7*	8*	9	10
SUM SQUARES OVER VARIABLES			13.182	5.725	4.192	3.900	5.370	3.099	4.483	4.291	2.151	2.061
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	BOR.CC	0.842	0.043	0.264	-0.016	-0.385	0.168	0.053	-0.466	-0.237	0.395	-0.021
42	DIS.CC	0.920	0.018	-0.140	0.190	0.215	0.071	0.146	0.172	0.419	-0.048	0.235
43	EAI.CC	0.908	0.034	-0.026	-0.038	0.033	-0.225	-0.007	0.022	-0.217	0.872	-0.070
44	STV.CC	1.073	0.659	-0.048	-0.012	-0.777	0.050	-0.015	0.004	-0.048	0.120	0.000
45	T-IMCC	0.952	0.840	-0.026	0.031	-0.055	-0.318	0.029	0.040	0.019	0.240	-0.086
46	T-EXCC	0.871	0.708	-0.071	0.044	-0.049	-0.210	0.030	0.043	0.035	0.370	-0.101
47	MPTREE	0.967	0.335	-0.036	0.023	0.050	-0.865	-0.001	-0.270	-0.084	0.112	0.039
48	EEMPCY	0.892	0.010	-0.082	0.043	0.074	-0.420	0.063	-0.756	-0.142	-0.012	-0.110
49	EECTCY	0.764	0.272	-0.004	-0.129	-0.063	0.008	0.024	-0.333	-0.142	-0.074	0.012
50	EE.MGR	0.915	-0.031	0.018	0.019	-0.032	-0.931	-0.009	-0.023	0.017	0.120	0.077
51	CTTREE	0.928	0.826	0.099	-0.009	0.222	-0.151	0.082	-0.105	-0.125	0.028	-0.072
52	R-IMEE	0.911	0.421	0.047	-0.021	-0.077	-0.056	-0.043	-0.105	-0.151	0.028	-0.029
53	R-EXEE	0.856	0.233	0.112	-0.008	0.024	-0.084	-0.090	-0.094	-0.289	0.067	-0.124
54	NEWSEE	0.764	0.179	0.312	0.198	-0.164	-0.240	-0.094	-0.006	-0.293	0.052	0.070
55	DIP.EE	0.787	0.069	0.118	0.305	-0.069	-0.063	-0.036	-0.101	-0.556	0.013	0.187
56	BOR.EE	0.912	-0.036	0.072	-0.019	-0.018	0.029	-0.882	0.022	-0.014	0.074	-0.048
57	DIS.EE	0.853	0.076	0.017	0.509	-0.081	-0.170	0.038	0.079	0.271	0.130	0.119
58	EAI.EE	0.695	0.190	0.255	-0.040	0.096	-0.681	-0.001	0.012	-0.161	0.118	0.142
59	STU.EE	0.867	0.737	0.015	-0.014	-0.300	-0.296	0.088	-0.064	-0.170	-0.044	0.082
60	T-IMEE	0.922	0.089	0.723	0.043	-0.019	-0.236	-0.054	-0.085	-0.287	0.003	0.033
61	T-EXEE	0.766	0.412	0.435	0.107	0.008	-0.129	-0.026	-0.052	-0.150	0.054	-0.045
62	MPTRUS	0.884	-0.063	0.279	0.229	0.018	-0.208	-0.632	0.065	0.116	-0.003	0.074
63	USMPCY	0.825	-0.020	0.057	0.140	0.017	0.077	-0.653	0.049	-0.061	-0.107	-0.214
64	USCTCY	0.837	-0.105	0.354	0.288	0.067	-0.154	-0.404	-0.190	-0.143	-0.218	-0.041
65	US.MGR	0.871	-0.060	0.221	0.122	0.027	0.005	-0.778	0.058	-0.037	-0.068	0.069
66	CTTRUS	0.869	-0.043	0.806	0.192	0.010	-0.170	-0.249	-0.033	0.005	-0.106	0.002
67	R-IMUS	0.925	-0.108	0.168	0.854	0.059	0.011	-0.087	0.003	0.127	-0.136	-0.030
68	R-EXUS	0.857	-0.086	0.088	0.779	0.022	-0.069	0.034	-0.041	0.216	-0.041	0.102
69	NEWSUS	0.704	0.126	0.417	0.235	0.087	-0.131	-0.212	0.129	-0.055	0.096	0.045
70	DIP.VS	1.011	-0.837	0.046	0.038	0.536	-0.033	0.005	0.004	-0.002	-0.024	0.032
71	BOR.VS	0.953	-0.010	-0.010	0.101	0.018	0.013	0.015	0.024	-0.088	-0.069	-0.035
72	DIS.US	0.797	-0.150	0.052	-0.416	-0.110	-0.134	-0.070	-0.057	-0.325	0.046	-0.075
73	EAI.US	0.901	-0.029	0.905	0.083	0.014	0.047	-0.174	-0.085	-0.102	-0.046	-0.001
74	STU.US	0.897	0.124	0.823	0.162	0.015	0.040	-0.033	-0.105	-0.057	0.003	-0.004
75	T-IMUS	0.947	-0.045	0.607	0.309	0.038	-0.027	-0.046	0.027	-0.054	-0.022	0.102
76	T-EXUS	0.793	-0.042	0.436	0.324	-0.005	-0.054	0.022	0.034	0.114	0.085	0.204

*Reverse signs of variables on this factor for proper interpretation.

TABLE B-19 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1961)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		11	12	13	14	15	16*	17*	18	19	20
SUM SQUARES	OVER VARIABLES		1.801	3.654	2.003	1.602	1.965	1.239	3.486	1.220	1.126	1.239
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	CAD.SU	0.834	-0.060	-0.093	0.113	0.098	0.068	-0.010	-0.008	-0.006	-0.096	-0.068
2	CAD.CC	0.786	0.033	-0.146	0.159	-0.029	-0.110	0.056	-0.747	0.105	0.082	0.034
3	AIN.SU	0.862	0.013	0.013	-0.099	-0.113	0.106	-0.100	-0.220	0.179	0.177	0.036
4	AIN.CC	0.785	0.030	-0.064	-0.031	-0.028	-0.049	-0.035	-0.803	0.210	0.035	0.061
5	AIN.EE	0.929	-0.023	0.008	-0.015	0.022	0.016	0.029	-0.139	0.936	0.018	0.027
6	AIN.US	0.957	0.088	-0.024	-0.001	0.007	0.037	-0.024	0.074	0.031	0.013	0.027
7	CP LST	0.827	-0.181	0.152	-0.036	0.065	0.069	0.077	-0.220	-0.089	-0.183	0.056
8	SU CPO	0.825	-0.026	0.038	-0.044	-0.015	0.879	-0.066	0.030	0.016	-0.031	-0.005
9	CC CPO	0.780	0.081	0.005	0.011	0.087	0.081	0.091	-0.480	-0.070	0.028	-0.108
10	CP SPL	0.814	0.023	-0.007	-0.008	-0.077	-0.047	-0.023	-0.074	0.028	0.773	0.016
11	CP NEU	1.001	0.019	0.074	0.026	0.980	-0.005	-0.038	0.073	0.024	-0.070	-0.020
12	CP MEM	1.027	-0.001	-0.066	0.034	0.367	-0.060	-0.014	-0.060	-0.014	0.050	0.029
13	POP.	0.939	0.011	-0.026	-0.020	0.352	-0.098	0.002	-0.085	-0.001	0.159	0.081
14	PR.FR.	0.801	0.114	0.122	-0.128	-0.098	0.035	0.095	-0.123	0.186	0.082	0.506
15	MPTRSU	0.950	-0.037	0.137	-0.001	-0.050	-0.052	-0.057	-0.060	0.025	-0.013	0.055
16	SUMPCY	0.831	-0.209	0.392	-0.009	0.015	-0.115	-0.025	0.021	-0.008	-0.083	-0.013
17	SUCTCY	0.962	0.155	0.370	-0.013	-0.028	-0.080	-0.025	-0.022	0.031	0.098	0.099
18	SU MGR	0.916	-0.115	0.214	-0.036	-0.042	-0.058	0.006	-0.071	-0.015	-0.046	-0.020
19	CITRSU	0.984	0.119	-0.004	-0.015	0.011	-0.030	-0.003	0.059	0.015	0.091	0.069
20	R-IMSU	0.997	-0.011	0.146	0.000	-0.024	-0.006	0.011	0.038	0.015	-0.012	0.001
21	R-EXSU	0.973	-0.066	0.174	-0.000	-0.050	0.250	0.061	0.019	-0.016	-0.087	-0.017
22	NEWSSU	0.831	-0.032	0.195	0.091	0.080	0.149	-0.042	-0.025	-0.039	0.070	0.008
23	DIP.SU	0.814	-0.116	0.137	0.039	0.087	0.103	-0.027	-0.057	0.020	-0.091	-0.070
24	BOR.SU	0.929	-0.063	-0.011	-0.023	0.003	0.483	0.076	0.101	-0.006	0.044	0.031
25	DIS.SU	0.877	0.488	-0.165	0.176	0.247	-0.172	0.005	0.138	-0.077	0.112	-0.077
26	EAI.SU	0.902	0.044	-0.204	-0.074	0.010	-0.087	0.083	0.056	-0.016	0.057	0.114
27	STU.SU	1.004	0.023	0.324	-0.059	-0.032	-0.055	0.045	0.030	-0.007	-0.031	0.031
28	T-IMSU	1.069	-0.051	0.112	-0.007	0.019	-0.004	0.004	0.082	-0.001	-0.043	-0.011
29	T-EXSU	1.056	-0.041	0.095	0.017	0.007	0.024	-0.035	0.045	0.018	0.034	-0.016
30	YE.IN.	0.906	-0.060	0.058	0.010	0.015	0.038	0.014	0.136	-0.124	-0.060	0.001
31	RAND.I	0.907	-0.048	0.069	-0.097	0.037	0.058	-0.915	0.085	-0.029	0.014	-0.065
32	MPTRCC	1.029	0.075	-0.063	-0.012	-0.024	-0.018	-0.008	0.046	0.002	0.007	0.055
33	CCMPCY	1.019	0.051	0.001	0.017	-0.011	0.008	-0.018	0.017	0.001	-0.017	0.010
34	CCCTCY	0.808	0.648	0.247	-0.059	-0.094	0.058	0.081	-0.051	0.026	-0.045	0.075
35	CC MGR	0.928	0.020	0.002	0.015	-0.053	-0.032	-0.018	0.066	0.033	-0.022	0.029
36	CITRCC	0.937	0.122	-0.017	0.006	-0.035	0.007	-0.005	-0.006	0.029	-0.036	0.068
37	R-IMCC	0.925	0.205	0.291	-0.064	-0.009	0.080	0.046	-0.132	-0.037	-0.033	-0.041
38	R-EXCC	0.884	-0.088	0.198	-0.028	0.039	0.042	0.012	-0.167	-0.105	0.009	-0.102
39	NEWSCC	0.865	0.184	0.181	0.166	0.105	-0.122	-0.052	-0.124	-0.098	0.196	0.110
40	DIP.CC	0.880	0.080	0.198	-0.178	-0.136	-0.152	-0.178	-0.167	-0.050	0.024	0.203

TABLE B-19 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1961)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13	14	15	16*	17*	18	19	20
SUM SQUARES		OVER VARIABLES	1.801	3.654	2.003	1.602	1.965	1.239	3.486	1.220	1.126	1.239
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	BOR.CC	0.842	0.002	-0.184	-0.056	-0.013	-0.104	0.063	-0.293	-0.099	0.048	0.106
42	DIS.CC	0.920	0.150	-0.005	0.125	0.132	-0.167	-0.122	0.642	0.064	0.040	0.116
43	EAI.CC	0.908	0.102	-0.087	-0.031	-0.023	-0.028	0.019	-0.128	0.013	-0.040	0.046
44	STV.CC	1.073	-0.002	0.084	0.009	0.026	0.027	0.044	-0.033	-0.019	0.006	-0.016
45	T-IMCC	0.952	-0.061	0.131	0.011	0.065	0.065	0.044	-0.138	-0.041	0.014	-0.140
46	T-EXCC	0.871	-0.093	0.140	-0.011	0.139	0.045	0.081	-0.214	-0.087	0.109	-0.207
47	MPTREE	0.967	-0.016	-0.012	-0.016	-0.045	0.010	-0.026	-0.061	0.018	0.005	-0.018
48	EEMPCY	0.892	-0.205	0.210	0.035	-0.011	-0.001	-0.017	-0.034	-0.032	-0.023	-0.048
49	EECTCY	0.764	0.202	0.674	-0.029	0.106	-0.101	-0.010	0.030	0.002	0.115	0.018
50	EE.MGR	0.915	0.042	-0.028	-0.004	-0.007	0.029	-0.001	-0.144	-0.004	0.011	-0.024
51	CTTREE	0.928	-0.127	0.283	0.017	-0.053	-0.048	-0.117	0.060	0.006	-0.013	0.077
52	R-IMEE	0.911	0.096	0.816	-0.072	0.031	-0.016	-0.013	0.055	0.004	-0.008	0.008
53	R-EXEE	0.856	-0.146	0.733	0.053	-0.074	0.228	-0.106	0.154	-0.017	-0.079	-0.028
54	NEWSEE	0.764	0.118	0.343	0.218	0.067	-0.167	-0.273	0.299	-0.030	0.119	0.133
55	DIP.EE	0.787	0.238	0.038	0.024	-0.043	-0.011	0.074	0.389	0.203	0.048	-0.222
56	BOR.EE	0.912	-0.115	0.136	0.004	-0.022	-0.086	0.172	0.160	0.019	0.137	0.064
57	DIS.EE	0.853	0.505	-0.211	0.149	0.224	-0.129	0.046	-0.119	-0.134	0.114	-0.074
58	EAI.EE	0.699	0.179	0.004	0.074	-0.028	0.014	-0.012	0.119	0.015	-0.076	0.061
59	STU.EE	0.867	-0.006	0.238	-0.066	-0.079	-0.127	0.015	0.034	-0.087	0.037	0.051
60	T-IMEE	0.922	-0.165	0.420	-0.058	0.102	-0.050	0.059	0.099	0.038	0.056	-0.046
61	T-EXEE	0.766	-0.148	0.547	0.016	0.087	0.052	-0.001	0.077	0.046	-0.090	-0.024
62	MPTRUS	0.884	0.219	0.011	0.036	0.011	0.215	-0.111	-0.328	-0.002	-0.228	-0.124
63	USMPCY	0.825	-0.129	-0.085	-0.041	-0.112	-0.200	-0.179	-0.064	0.075	-0.070	-0.426
64	USCTCY	0.837	0.197	-0.039	-0.118	-0.005	0.406	0.112	-0.271	0.038	-0.099	-0.066
65	US.MGR	0.871	0.054	-0.013	0.012	0.036	0.306	-0.079	-0.216	-0.089	-0.156	-0.008
66	CTTRUS	0.869	0.091	-0.048	0.016	-0.063	-0.008	-0.014	-0.238	0.031	0.052	-0.046
67	R-IMUS	0.925	0.057	-0.114	0.133	-0.037	-0.072	-0.036	0.190	-0.017	0.015	-0.176
68	R-EXUS	0.857	0.094	-0.078	0.173	-0.041	0.200	0.079	0.232	0.072	0.113	-0.056
69	NEWSUS	0.704	0.092	0.091	0.113	0.023	0.102	-0.071	-0.071	-0.008	0.025	-0.555
70	DIP.VS	1.011	-0.106	-0.067	0.009	-0.015	0.012	-0.004	-0.009	-0.016	0.014	0.002
71	BOR.VS	0.953	-0.055	-0.060	0.948	0.025	-0.023	0.125	-0.019	-0.013	0.070	0.018
72	DIS.US	0.797	0.050	-0.032	-0.162	-0.007	0.075	0.113	-0.597	-0.165	-0.020	-0.117
73	EAI.US	0.901	-0.025	0.074	0.040	-0.053	0.079	0.010	-0.029	-0.008	0.061	-0.033
74	STU.US	0.897	-0.151	0.009	0.093	-0.067	0.274	-0.039	-0.110	-0.064	0.124	-0.127
75	T-IMUS	0.947	0.105	0.046	0.612	0.121	-0.075	-0.031	0.060	0.007	-0.136	-0.174
76	T-EXUS	0.793	0.215	0.064	0.547	-0.094	-0.037	-0.079	0.062	-0.017	-0.177	-0.167

*Reverse signs of variables on this factor for proper interpretation.

TABLE B-20
DATA ANALYSIS FOR MATRIX C, MISSING DATA DELETED
TABLE OF POSITIVE EIGENVALUES AND COMMUNALITIES

MAJOR ACTOR INFLUENCE DATA (COMPARED 1961)

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (76) FACTORS		PERCENT OF COMMUNALITY OVER 20 ROTATED FACTORS	
1	17.133	22.5	22.5	19.4	19.4
2	8.571	11.3	33.8	8.4	27.8
3	6.560	8.6	42.5	6.2	34.0
4	5.058	6.7	49.1	5.7	39.7
5	4.268	5.6	54.7	7.9	47.6
6	3.600	4.7	59.5	4.6	52.2
7	3.111	4.1	63.6	6.6	58.8
8	2.883	3.8	67.4	6.3	65.1
9	2.383	3.1	70.5	3.2	68.3
10	2.043	2.7	73.2	3.0	71.3
11	1.574	2.1	75.3	2.6	73.9
12	1.565	2.1	77.3	5.4	79.3
13	1.523	2.0	79.3	2.9	82.2
14	1.471	1.9	81.3	2.4	84.6
15	1.255	1.7	82.9	2.9	87.5
16	1.170	1.5	84.4	1.8	89.3
17	1.141	1.5	85.9	5.1	94.4
18	0.901	1.2	87.1	1.8	96.2
19	0.819	1.1	88.2	1.7	97.9
20	0.776	1.0	89.2	1.8	100
21	0.749	1.0	90.2		
22	0.700	0.9	91.1		
23	0.668	0.9	92.0		
24	0.604	0.8	92.8		
25	0.408	0.5	93.3		
26	0.393	0.5	93.9		
27	0.391	0.5	94.4		
28	0.387	0.5	94.9		
29	0.382	0.5	95.4		
30	0.348	0.5	95.8		
31	0.346	0.5	96.3		
32	0.332	0.4	96.7		
33	0.286	0.4	97.1		
34	0.281	0.4	97.5		
35	0.233	0.3	97.8		
36	0.215	0.3	98.1		
37	0.207	0.3	98.4		
38	0.181	0.2	98.6		
39	0.140	0.2	98.8		
40	0.130	0.2	98.9		
41	0.129	0.2	99.1		
42	0.124	0.2	99.3		
43	0.110	0.1	99.4		
44	0.101	0.1	99.6		
45	0.099	0.1	99.7		
46	0.086	0.1	99.8		
47	0.082	0.1	99.9		
48	0.082	0.1	100.0		
49	0.079	0.1			
50	0.061	0.1			

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (74) FACTORS	20 ROTATED FACTORS
51	0.057	0.1	
52	0.054	0.1	
53	0.053	0.1	
54	0.053	0.1	
55	0.052	0.1	
56	0.041	0.1	
57	0.040	0.1	
58	0.033	0.0	
59	0.031	0.0	
60	0.030	0.0	
61	0.030	0.0	
62	0.028	0.0	
63	0.027	0.0	
64	0.027	0.0	
65	0.027	0.0	
66	0.027	0.0	
67	0.024	0.0	
68	0.022	0.0	
69	0.021	0.0	
70	0.020	0.0	
71	0.018	0.0	
72	0.016	0.0	
73	0.012	0.0	
74	0.011	0.0	

TRACE OF ORIGINAL MATRIX = 76.000
COMMUNALITY OVER 76 FACTORS = 75.989
20 FACTORS = 67.805

TABLE B-21
DATA ANALYSIS FOR MATRIX C
MISSING DATA DELETED -- MIN. EIGENVALUE: 0.5

MAJOR ACTOR INFLUENCE DATA (COMPARED 1963)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		1	2	3*	4	5*	6	7	8	9	10
SUM SQUARES	OVER VARIABLES		11.669	6.012	5.545	5.760	4.350	3.754	3.052	2.359	1.741	2.244
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	CAD.SU	0.846	-0.109	-0.102	-0.047	-0.117	-0.039	-0.143	0.816	-0.034	0.163	0.192
2	CAD.CC	0.750	-0.110	0.133	0.173	-0.117	-0.084	-0.110	0.744	-0.155	-0.180	0.106
3	AIN.SU	0.798	-0.070	-0.040	-0.161	-0.004	-0.028	0.005	0.836	0.091	0.013	-0.124
4	AIN.CC	0.860	-0.012	0.148	0.394	-0.020	-0.143	0.056	0.597	0.026	-0.283	-0.060
5	AIN.EE	0.656	-0.021	-0.002	0.086	0.009	0.081	0.024	0.287	0.086	-0.003	-0.095
6	CP LST	0.802	-0.001	0.132	-0.495	0.028	-0.269	-0.053	0.041	0.191	0.040	-0.135
7	SU CPO	0.733	0.135	-0.072	-0.488	-0.085	0.156	-0.084	-0.017	0.222	0.158	-0.227
8	CC CPO	0.910	0.008	-0.015	0.102	0.441	-0.364	0.167	0.229	-0.020	-0.220	-0.067
9	CP SPL	0.942	-0.018	0.276	-0.180	-0.076	0.063	-0.083	0.032	-0.086	-0.046	0.185
10	CP NEU	0.786	-0.020	0.144	0.031	-0.020	-0.260	-0.008	-0.007	-0.010	0.017	0.078
11	CP MEM	0.862	0.048	0.155	-0.049	0.532	-0.014	0.172	0.175	0.032	-0.049	-0.029
12	POP.	0.925	0.028	0.931	0.002	0.039	-0.040	0.079	-0.004	-0.032	-0.019	-0.034
13	PR.FR.	0.821	0.281	-0.241	0.373	0.220	0.028	0.265	-0.023	0.121	-0.043	-0.068
14	MPTRSU	0.937	0.361	0.064	-0.009	-0.004	-0.032	0.312	0.136	0.327	-0.173	-0.028
15	SUMPCY	0.990	0.953	-0.021	-0.026	-0.006	0.020	-0.087	-0.007	0.012	-0.001	0.035
16	SUCTCY	0.899	0.766	0.169	0.048	0.013	0.047	0.402	-0.043	0.066	0.070	-0.025
17	SU MGR	0.838	0.284	0.322	0.090	-0.044	0.085	0.082	0.030	0.520	0.068	-0.073
18	CTTRSU	1.050	0.773	0.196	0.048	0.561	0.049	0.038	-0.054	0.027	0.150	-0.088
19	R-IMSU	0.971	0.791	-0.077	-0.040	0.128	0.003	0.394	-0.145	-0.052	-0.016	0.013
20	R-EXSU	0.952	0.728	0.143	-0.022	0.081	0.087	0.544	-0.042	-0.040	0.029	0.167
21	NEWSSU	0.805	0.143	0.147	0.252	0.058	-0.031	0.146	-0.072	0.066	0.137	-0.079
22	DIP.SU	0.699	0.089	0.039	0.131	0.047	-0.017	-0.004	0.030	-0.042	0.069	0.046
23	BOP.SU	0.944	0.019	0.024	-0.057	-0.066	-0.272	0.406	-0.046	-0.079	0.340	0.658
24	DIS.SU	0.821	0.069	-0.138	-0.581	0.011	0.029	-0.171	-0.036	-0.136	-0.410	-0.277
25	EAI.SU	0.656	-0.053	-0.033	-0.478	0.011	0.110	-0.015	-0.129	0.098	0.063	0.174
26	STU.SU	1.026	0.410	0.011	0.073	0.724	0.136	0.088	0.113	0.112	0.315	-0.133
27	T-IMSU	1.103	0.985	0.282	-0.016	0.143	0.056	-0.016	-0.063	-0.021	0.104	-0.036
28	T-EXSU	0.955	0.779	0.463	0.024	0.086	0.045	0.129	-0.035	-0.030	-0.011	-0.037
29	YE.IN.	0.810	0.117	0.238	-0.704	-0.007	-0.179	0.166	-0.048	-0.070	0.146	0.004
30	RAND.1	0.893	-0.023	-0.093	-0.038	0.008	-0.056	-0.050	0.081	-0.034	0.014	0.026
31	MPTRCC	0.925	0.634	-0.000	0.005	0.590	-0.050	-0.060	-0.092	0.011	-0.092	-0.032
32	CCMPCY	1.029	-0.048	0.008	0.041	0.991	0.039	-0.069	-0.093	0.029	-0.006	0.011
33	CCCTCY	1.037	-0.026	-0.075	0.027	0.982	0.008	0.027	-0.104	0.008	-0.064	0.033
34	CC MGR	1.044	0.965	-0.124	-0.052	-0.053	-0.034	-0.116	-0.067	-0.024	-0.084	0.046
35	CTTRCC	0.816	0.587	-0.125	0.041	0.633	-0.038	-0.062	-0.112	-0.034	-0.100	0.012
36	R-IMCC	0.974	0.405	-0.153	0.105	0.143	0.000	0.706	-0.076	-0.177	0.039	0.037
37	R-EXCC	0.854	0.676	-0.085	0.066	0.079	0.046	0.088	0.152	-0.027	0.031	-0.108
38	NEWSCC	0.742	0.212	-0.022	0.029	0.127	0.089	0.185	-0.061	0.263	-0.094	-0.077
39	DIP.CC	0.731	0.224	0.126	0.360	0.142	0.057	0.192	0.004	0.095	-0.097	-0.127
40	BOR.CC	0.772	-0.032	0.518	0.147	0.415	-0.015	0.405	-0.061	-0.074	-0.094	-0.021

TABLE B-21 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1963)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	1	2	3*	4	5*	6	7	8	9	10
SUM SQUARES OVER VARIABLES			11.669	6.012	5.545	5.760	4.350	3.754	3.052	2.359	1.741	2.244
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	DIS.CC	0.815	0.041	-0.206	-0.534	-0.254	0.382	-0.342	-0.043	0.026	-0.011	-0.018
42	EAI.CC	0.779	-0.023	-0.063	0.065	0.023	0.054	0.039	-0.020	0.846	0.010	-0.021
43	STU.CC	1.186	0.476	-0.060	0.009	0.903	0.042	0.046	-0.042	-0.100	0.012	0.026
44	T-IMCC	0.878	0.731	-0.038	0.075	0.076	0.029	0.305	0.044	-0.103	-0.018	-0.020
45	T-EXCC	1.002	0.870	-0.001	-0.004	0.151	0.011	-0.004	0.129	-0.073	-0.003	-0.079
46	MPTREE	0.959	0.083	-0.062	-0.002	-0.040	-0.008	0.770	-0.150	0.427	-0.075	0.124
47	EEMPCY	0.913	0.108	0.072	-0.002	-0.066	0.029	0.905	-0.048	0.007	0.033	-0.010
48	EECTCY	0.959	0.821	0.090	0.033	0.016	0.012	0.028	-0.150	0.388	-0.001	-0.003
49	CTTREE	0.995	0.857	0.361	0.036	-0.062	0.039	-0.028	-0.132	0.223	-0.023	0.000
50	R-IMEE	0.948	0.258	0.240	0.083	0.001	0.015	0.017	0.094	0.020	0.397	-0.031
51	R-EXEE	0.997	0.272	0.171	0.044	0.089	-0.051	0.072	-0.073	0.027	0.007	-0.025
52	NEWSEE	0.814	0.177	0.217	-0.225	0.146	0.173	-0.102	-0.051	0.154	-0.013	-0.063
53	DIP.EE	0.660	0.139	0.175	0.029	0.093	0.089	0.101	0.099	0.082	0.052	0.157
54	BOR.EE	0.715	-0.020	0.029	-0.019	-0.031	-0.522	-0.028	-0.129	-0.021	0.601	0.156
55	DIS.EE	0.917	0.059	-0.047	-0.622	0.129	-0.084	0.023	0.125	-0.238	-0.370	-0.091
56	EAI.EE	0.878	0.042	-0.026	0.058	-0.091	-0.017	0.139	0.001	0.375	0.115	-0.035
57	STU.EE	0.793	0.367	0.039	0.095	0.302	0.152	-0.003	0.098	0.134	0.128	-0.068
58	T-IMEE	1.109	0.327	0.813	0.053	-0.079	-0.029	0.006	-0.024	0.029	0.321	-0.086
59	T-EXEE	0.973	0.361	0.748	0.025	-0.069	0.018	0.033	-0.022	0.003	0.094	-0.085
60	MPTRUS	0.932	-0.052	0.094	-0.217	-0.021	-0.890	-0.057	0.161	0.040	-0.076	0.015
61	USMPCY	0.710	-0.033	0.063	-0.058	-0.036	-0.782	-0.059	-0.075	0.033	0.077	0.008
62	USCTCY	0.790	-0.052	0.184	-0.036	-0.062	-0.739	0.177	0.099	-0.142	-0.144	-0.058
63	US MGR	0.917	-0.026	0.199	0.025	0.014	-0.900	-0.038	0.040	-0.074	0.186	-0.021
64	CTTRUS	0.670	-0.069	0.324	-0.474	-0.029	-0.442	0.007	0.304	0.021	-0.025	-0.011
65	R-IMUS	0.849	-0.133	0.210	-0.805	-0.026	-0.279	0.006	0.030	-0.030	0.008	0.165
66	R-EXUS	0.793	-0.125	0.088	-0.825	-0.036	-0.097	0.070	-0.019	-0.071	-0.052	0.132
67	NEWSUS	0.621	0.159	0.410	-0.293	-0.078	-0.266	-0.003	0.169	-0.067	-0.078	0.054
68	DIP.US	0.881	-0.488	0.073	-0.091	-0.477	-0.039	0.037	0.047	-0.468	0.009	-0.049
69	BOR.US	0.848	-0.017	0.045	-0.157	0.015	0.098	-0.010	0.066	0.004	0.023	0.882
70	DIS.US	0.820	-0.154	0.150	0.644	0.162	-0.211	0.281	0.215	-0.071	-0.159	-0.206
71	EAI.US	0.867	0.013	0.861	-0.048	-0.021	-0.297	-0.026	-0.025	0.043	-0.051	-0.017
72	STU.US	0.801	0.184	0.815	-0.139	-0.010	-0.221	-0.016	0.030	-0.024	-0.003	0.126
73	T-IMUS	0.912	-0.040	0.701	-0.368	-0.002	-0.130	-0.034	0.065	-0.011	-0.022	0.471
74	T-EXUS	0.758	-0.056	0.416	-0.504	0.003	0.008	0.028	0.220	-0.046	-0.199	0.418

*Invert signs of variables on this factor for proper interpretation.

TABLE B-21 (Cont.)
MISSING DATA DELETED -- MINIMUM EIGENVALUE: 0.5

MAJOR ACTOR INFLUENCE DATA (COMPARED 1963)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER		11	12	13	14	15	16*	17	18*	19	20
SUM SQUARES OVER VARIABLES			4.044	1.549	1.363	1.525	2.016	2.160	1.199	1.781	1.207	1.098
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	CAD.SU	0.846	0.108	-0.014	-0.061	0.044	0.037	-0.111	0.047	-0.121	0.037	-0.081
2	CAD.CC	0.750	0.055	0.060	-0.085	-0.033	-0.052	-0.046	0.074	-0.035	-0.086	0.051
3	AIN.SU	0.798	-0.080	-0.023	0.065	0.063	-0.014	-0.004	-0.025	-0.082	0.139	-0.016
4	AIN.CC	0.860	-0.060	0.044	0.116	-0.277	-0.039	0.036	-0.251	-0.027	0.011	0.237
5	AIN.EE	0.656	-0.074	0.039	-0.004	0.025	-0.103	0.063	-0.068	-0.717	-0.030	-0.007
6	CP LST	0.802	0.073	0.188	-0.228	0.309	0.096	0.021	-0.089	0.428	0.096	0.090
7	SU CPO	0.733	0.091	-0.250	-0.277	-0.163	-0.015	0.133	0.012	0.243	0.204	0.117
8	CC CPO	0.910	-0.225	0.053	-0.249	-0.116	-0.017	-0.391	-0.047	0.336	-0.107	-0.174
9	CP SPL	0.942	0.220	0.831	0.028	-0.154	-0.021	-0.071	-0.026	-0.010	-0.034	0.015
10	CP NEU	0.786	0.146	-0.126	0.006	0.796	0.130	0.030	-0.033	-0.003	0.002	-0.005
11	CP MEM	0.862	0.097	-0.075	-0.014	-0.067	-0.125	-0.647	-0.124	0.098	0.022	-0.082
12	POP.	0.925	0.083	0.063	0.030	-0.026	-0.060	-0.107	-0.062	-0.098	0.009	0.059
13	PR.FR.	0.821	0.148	0.121	0.595	-0.044	0.036	0.025	-0.039	-0.078	0.004	-0.044
14	MPTRSU	0.937	0.266	-0.250	0.134	-0.162	-0.146	-0.555	-0.185	0.057	-0.049	-0.034
15	SUMPCY	0.990	-0.005	-0.055	0.014	-0.055	0.180	0.007	-0.007	0.054	-0.002	-0.173
16	SUCTCY	0.899	0.147	-0.032	0.183	0.086	0.072	0.086	0.040	0.094	-0.098	-0.096
17	SU MGR	0.838	0.163	-0.067	0.388	0.274	-0.005	-0.218	0.056	0.161	-0.091	0.080
18	CTTRSU	1.050	0.089	0.086	0.080	-0.060	0.004	-0.062	0.078	0.017	0.051	-0.145
19	R-IMSU	0.971	0.260	-0.011	0.087	-0.014	-0.115	0.139	0.137	-0.098	-0.045	0.061
20	R-EXSU	0.952	0.079	-0.013	-0.071	0.010	0.183	0.071	0.032	0.046	0.021	0.074
21	NEWSSU	0.805	0.758	-0.039	-0.098	0.088	0.112	-0.038	0.059	0.143	0.083	0.033
22	DIP.SU	0.699	0.771	0.072	-0.009	-0.006	0.025	-0.091	0.007	-0.216	0.026	-0.059
23	BOR.SU	0.944	0.135	-0.041	-0.042	0.070	0.025	0.080	-0.202	-0.074	0.103	-0.224
24	DIS.SU	0.821	-0.287	0.108	-0.040	-0.141	-0.068	-0.173	0.029	-0.084	0.050	-0.064
25	EAI.SU	0.656	-0.072	0.193	-0.191	0.059	-0.057	0.033	-0.480	-0.022	-0.165	0.073
26	STU.SU	1.026	0.138	0.128	0.150	0.197	-0.151	-0.011	0.184	0.081	-0.007	0.012
27	T-IMSU	1.103	-0.014	0.014	-0.038	0.010	0.067	0.013	0.045	-0.068	0.009	-0.024
28	T-EXSU	0.955	-0.081	0.074	-0.014	0.041	0.239	-0.048	0.076	0.082	-0.092	0.094
29	YE.IN.	0.810	0.057	0.083	0.008	0.097	-0.036	0.140	0.039	0.305	0.139	-0.011
30	RAND.1	0.893	0.073	-0.018	-0.010	0.006	0.024	0.006	0.024	0.036	0.927	0.011
31	MPTRCC	0.925	0.100	-0.075	-0.111	0.115	-0.289	0.091	-0.074	-0.046	0.064	0.079
32	CCMPCY	1.029	0.048	-0.049	0.086	-0.057	0.025	-0.025	-0.011	0.035	0.018	-0.097
33	CCCTCY	1.037	0.112	0.002	0.050	-0.025	0.160	0.003	0.058	-0.005	-0.053	0.032
34	CC MGR	1.044	0.061	-0.045	0.029	-0.091	-0.204	0.050	-0.008	-0.055	-0.008	-0.021
35	CTTRCC	0.816	0.125	-0.026	0.020	0.027	0.049	0.026	-0.020	-0.050	0.017	-0.012
36	R-IMCC	0.974	0.100	0.216	0.002	-0.013	0.081	-0.105	0.144	0.108	-0.112	0.311
37	R-EXCC	0.854	0.240	0.012	0.026	-0.014	0.189	0.027	-0.125	0.063	0.140	0.446
38	NEWSCC	0.742	0.653	0.056	-0.044	0.059	0.091	-0.028	0.191	0.259	-0.019	-0.038
39	DIP.CC	0.731	0.583	0.032	0.162	0.022	0.035	-0.081	0.026	0.120	-0.086	0.206
40	BOR.CC	0.772	0.206	0.281	0.027	-0.287	-0.152	0.127	-0.117	0.165	0.020	-0.085

TABLE B-21 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1963)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13	14	15	16*	17	18*	19	20
SUM SQUARES OVER VARIABLES			4.044	1.549	1.363	1.525	2.016	2.160	1.199	1.781	1.207	1.098
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	DIS.CC	0.815	-0.189	-0.098	-0.002	-0.129	-0.008	0.087	0.006	-0.264	-0.009	-0.127
42	EAI.CC	0.779	0.133	-0.047	0.019	-0.032	0.042	-0.150	-0.004	-0.053	-0.008	-0.010
43	STU.CC	1.186	-0.002	-0.033	-0.092	0.005	0.070	-0.075	0.004	-0.096	0.052	0.302
44	T-IMCC	0.878	-0.066	0.147	-0.223	0.119	0.008	-0.242	0.022	0.149	-0.138	0.183
45	T-EXCC	1.002	0.184	-0.014	-0.015	0.057	0.053	-0.256	-0.140	0.054	0.132	0.221
46	MPTREE	0.959	0.163	-0.090	0.064	-0.052	-0.142	-0.220	0.046	-0.108	0.002	-0.061
47	EEMPCY	0.913	0.119	-0.103	0.064	0.026	0.101	-0.111	-0.118	-0.025	-0.020	-0.048
48	EECTCY	0.959	0.233	-0.051	0.097	-0.006	0.128	-0.025	0.118	-0.031	-0.012	-0.056
49	CTTREE	0.995	0.078	0.014	0.139	-0.044	0.043	-0.118	0.026	0.024	-0.014	-0.107
50	R-IMEE	0.948	0.311	0.179	0.081	0.337	0.536	0.113	0.058	0.270	0.059	-0.136
51	R-EXEE	0.997	0.274	-0.084	-0.009	0.115	0.870	0.035	0.048	0.067	0.026	0.087
52	NEWSEE	0.814	0.392	0.060	-0.071	-0.019	0.069	-0.013	0.645	0.097	-0.029	0.020
53	DIP.EE	0.660	0.695	0.098	0.151	0.065	0.115	-0.017	-0.002	0.027	0.071	0.010
54	BOR.EE	0.715	0.096	-0.070	-0.021	-0.031	0.073	-0.092	-0.055	-0.043	0.039	0.023
55	DIS.EE	0.917	-0.245	0.312	0.003	-0.056	-0.121	-0.276	-0.005	-0.036	0.101	-0.140
56	EAI.EE	0.878	0.157	0.236	0.025	0.067	0.068	-0.747	0.183	-0.026	0.000	0.087
57	STU.EE	0.793	0.369	-0.137	0.344	0.088	-0.210	-0.271	0.124	0.242	-0.051	0.100
58	T-IMEE	1.109	0.104	0.162	0.088	0.121	0.280	0.041	0.102	0.124	-0.011	-0.231
59	T-EXEE	0.973	0.081	0.057	-0.068	0.064	0.433	-0.025	0.019	0.175	-0.011	-0.147
60	MPTRUS	0.932	-0.107	-0.002	-0.106	0.065	-0.047	0.029	-0.031	0.099	0.053	-0.021
61	USMPCY	0.710	-0.130	-0.080	-0.053	-0.024	-0.009	0.097	0.076	0.075	-0.016	0.161
62	USCTCY	0.790	0.124	0.076	0.080	0.211	0.038	-0.048	-0.074	0.004	0.029	-0.189
63	US MGR	0.917	-0.058	0.008	0.037	0.070	0.026	-0.071	-0.042	-0.048	0.023	-0.044
64	CTTRUS	0.670	0.067	-0.031	0.128	-0.008	0.046	-0.136	0.009	-0.026	-0.045	0.013
65	R-IMUS	0.849	-0.155	0.025	-0.053	0.050	0.027	-0.010	0.011	0.023	0.003	-0.011
66	R-EXUS	0.793	-0.197	0.047	-0.004	-0.070	-0.011	0.005	0.016	-0.018	-0.006	0.031
67	NEWSUS	0.621	0.095	0.051	-0.327	0.089	-0.019	0.030	-0.128	0.251	-0.012	-0.123
68	DIP.US	0.881	-0.017	0.043	0.124	0.015	0.206	0.080	-0.143	0.278	0.071	0.073
69	BOR.US	0.848	-0.016	0.128	-0.003	0.001	-0.045	0.016	-0.032	0.084	-0.000	0.032
70	DIS.US	0.820	0.074	0.209	-0.017	0.088	0.010	-0.085	0.002	0.016	0.152	0.036
71	EAI.US	0.867	0.122	-0.008	-0.036	0.032	-0.013	-0.015	0.042	0.006	-0.063	0.069
72	STU.US	0.801	0.092	0.014	-0.019	0.015	0.016	0.067	0.045	-0.013	-0.033	-0.011
73	T-IMUS	0.912	-0.020	0.086	-0.075	0.105	0.018	-0.008	0.092	-0.004	-0.026	0.072
74	T-EXUS	0.758	-0.097	-0.000	-0.074	0.175	0.002	0.039	0.097	-0.008	-0.016	0.075

*Reverse signs of variables on this factor for proper interpretation.

TABLE B-22
DATA ANALYSIS FOR MATRIX C, MISSING DATA DELETED, 1963
TABLE OF POSITIVE EIGENVALUES AND COMMUNALITIES

MAJOR ACTOR INFLUENCE DATA (COMPARED 1963)

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (74) FACTORS		20 ROTATED FACTORS	
1	15.442	20.9	20.9	18.2	18.2
2	8.319	11.2	32.1	9.4	27.6
3	6.033	8.2	40.3	8.7	36.3
4	4.970	6.7	47.0	9.0	45.3
5	3.700	5.0	52.0	6.8	52.1
6	3.549	4.8	56.8	5.9	58.0
7	3.344	4.5	61.3	4.8	62.8
8	2.950	4.0	65.3	3.7	66.5
9	2.567	3.5	68.8	2.7	69.2
10	2.280	3.1	71.8	3.5	72.7
11	1.668	2.3	74.1	6.3	79.0
12	1.411	1.9	76.0	2.4	81.4
13	1.315	1.8	77.8	2.1	83.5
14	1.173	1.6	79.4	2.4	85.9
15	1.100	1.5	80.8	3.2	89.1
16	0.970	1.3	82.2	3.4	92.5
17	0.951	1.3	83.4	1.9	94.4
18	0.950	1.3	84.7	2.8	97.2
19	0.878	1.2	85.9	1.9	99.1
20	0.876	1.2	87.1	1.7	100
21	0.823	1.1	88.2		
22	0.742	1.0	89.2		
23	0.723	1.0	90.2		
24	0.650	0.9	91.1		
25	0.616	0.8	91.9		
26	0.556	0.8	92.7		
27	0.487	0.7	93.3		
28	0.455	0.6	93.9		
29	0.436	0.6	94.5		
30	0.421	0.6	95.1		
31	0.350	0.5	95.6		
32	0.333	0.5	96.0		
33	0.324	0.4	96.4		
34	0.315	0.4	96.9		
35	0.269	0.4	97.2		
36	0.268	0.4	97.6		
37	0.262	0.4	97.9		
38	0.235	0.3	98.3		
39	0.214	0.3	98.6		
40	0.204	0.3	98.8		
41	0.199	0.3	99.1		
42	0.183	0.2	99.3		
43	0.172	0.2	99.6		
44	0.168	0.2	99.8		
45	0.156	0.2	100.0		
46	0.142	0.2			
47	0.140	0.2			
48	0.125	0.2			
49	0.124	0.2			
50	0.115	0.2			

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (74) FACTORS	20 ROTATED FACTORS
51	0.114	0.2	
52	0.102	0.1	
53	0.092	0.1	
54	0.085	0.1	
55	0.084	0.1	
56	0.080	0.1	
57	0.079	0.1	
58	0.070	0.1	
59	0.059	0.1	
60	0.055	0.1	
61	0.052	0.1	
62	0.052	0.1	
63	0.052	0.1	
64	0.050	0.1	
65	0.040	0.1	
66	0.030	0.0	
67	0.017	0.0	
68	0.008	0.0	
69	0.007	0.0	

TRACE OF ORIGINAL MATRIX = 74.000
COMMUNALITY OVER 74 FACTORS = 73.992
20 FACTORS = 64.445

TABLE B-23
DATA ANALYSIS FOR MATRIX C
MISSING DATA DELETED -- MINIMUM EIGENVALUE: 0.5

MAJOR FACTOR INFLUENCE DATA (COMPARED 1965)

ORTHOGONALLY ROTATED FACTOR MATRIX

	FACTOR NUMBER	1	2	3	4	5	6	7	8*	9	10*
SUM SQUARES OVER VARIABLES		7.500	5.645	7.423	4.960	3.604	2.686	3.950	2.578	2.559	4.352
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS									
1	CAD.SU	0.768	-0.091	-0.072	-0.054	0.204	-0.063	0.159	0.118	-0.727	0.158	0.033
2	CAD.CC	0.806	-0.171	0.156	-0.164	-0.150	-0.031	-0.020	0.076	-0.587	-0.165	0.111
3	AIN.SU	0.817	-0.057	-0.052	-0.054	0.167	0.047	-0.029	0.127	-0.858	0.014	-0.027
4	AIN.CC	0.739	-0.067	0.174	-0.096	-0.206	-0.069	0.091	0.058	-0.667	-0.048	0.064
5	AIN.EE	0.909	-0.003	-0.035	0.013	-0.035	-0.006	-0.047	-0.001	-0.176	-0.042	-0.005
6	AIN.US	1.036	-0.093	-0.036	0.995	-0.015	-0.033	0.087	0.000	0.059	-0.096	-0.038
7	CP LST	0.769	0.000	0.180	-0.011	0.452	-0.028	-0.061	0.195	-0.136	0.063	-0.244
8	SU CPO	0.877	-0.029	0.013	-0.069	0.190	-0.083	0.037	-0.127	-0.047	-0.096	-0.042
9	CC CPO	0.829	-0.104	0.104	0.461	0.004	-0.021	0.368	0.595	-0.094	0.000	0.071
10	CP SPL	0.906	-0.049	0.057	-0.040	0.254	0.106	-0.069	-0.063	-0.018	0.044	-0.048
11	CP NEU	0.797	0.184	0.112	-0.045	0.209	-0.068	-0.170	-0.041	-0.161	-0.082	-0.001
12	CP MEM	1.061	0.220	0.175	0.950	0.045	-0.101	0.061	0.067	0.091	0.028	-0.024
13	POP.	1.005	0.126	0.955	0.046	0.110	0.055	0.081	0.091	0.053	0.052	-0.035
14	PR.FR.	0.729	0.215	-0.237	0.193	-0.355	0.453	0.255	0.001	0.013	0.028	-0.059
15	MPTRSU	0.902	0.073	-0.005	0.126	-0.046	-0.072	0.368	-0.040	0.023	-0.039	-0.027
16	SUMPCY	0.950	0.053	-0.006	0.014	-0.002	-0.022	0.224	-0.038	0.082	-0.010	-0.124
17	SUCTCY	0.906	0.488	0.118	0.023	-0.018	0.134	0.036	-0.016	0.131	-0.035	-0.414
18	SU MGR	0.848	0.108	0.420	0.630	-0.056	-0.075	0.062	-0.012	0.076	0.001	-0.099
19	CTTRSU	1.089	0.431	0.435	0.621	-0.047	0.082	0.043	-0.027	0.117	0.023	-0.511
20	R-IMSU	0.965	0.907	-0.005	0.127	-0.016	0.290	0.062	-0.059	0.012	-0.017	-0.003
21	R-EXSU	0.995	0.950	0.013	0.104	-0.019	0.041	0.047	-0.022	0.026	0.015	-0.256
22	NEWSSU	0.777	0.130	0.086	0.095	0.083	0.144	0.103	-0.016	0.014	0.053	-0.136
23	DIP.SU	0.784	0.129	0.164	0.062	-0.283	0.122	0.109	-0.007	0.081	-0.034	-0.095
24	BOR.SU	0.915	-0.038	0.010	-0.038	0.005	0.008	0.033	0.080	0.063	-0.007	-0.016
25	DIS.SU	0.887	0.036	-0.153	0.056	0.546	-0.097	-0.011	0.000	-0.020	0.041	0.214
26	EAI.SU	0.766	0.004	0.047	0.017	-0.000	-0.071	-0.040	0.117	0.002	0.030	-0.085
27	SU ADR	0.989	0.331	0.174	0.086	-0.034	0.732	0.043	-0.006	0.040	-0.046	-0.051
28	STU.SU	0.778	0.341	0.114	0.185	-0.098	0.228	0.616	-0.035	-0.032	-0.066	0.018
29	T-IMSU	1.000	0.949	0.153	0.158	0.011	-0.020	-0.034	-0.005	0.040	0.050	-0.043
30	T-EXSU	1.006	0.927	0.277	0.152	0.022	-0.069	-0.033	-0.006	0.041	0.059	-0.154
31	YE.IN.	0.775	0.120	0.120	-0.047	0.748	-0.030	-0.001	0.048	0.047	0.122	-0.181
32	RAND.1	0.613	-0.023	0.035	-0.009	0.003	0.060	0.030	-0.077	-0.078	-0.070	-0.033
33	MPTRCC	0.827	0.324	-0.048	0.752	-0.084	-0.094	0.034	0.001	0.052	-0.011	0.094
34	CCMPCY	0.790	0.226	-0.104	0.668	-0.104	0.346	0.083	-0.015	0.016	-0.027	0.050
35	CCCTCY	0.986	-0.038	-0.051	0.880	-0.047	0.406	-0.037	-0.043	0.007	-0.041	0.112
36	CC MGR	0.936	-0.035	0.063	0.102	0.004	0.082	-0.041	0.049	0.116	0.049	0.028
37	CTTRCC	1.015	-0.122	-0.063	0.986	-0.015	-0.031	0.090	-0.005	0.026	-0.031	-0.082
38	R-IMCC	0.780	0.024	-0.021	0.035	-0.147	0.792	0.010	-0.062	0.013	-0.034	-0.124
39	R-EXCC	0.930	0.320	-0.152	0.043	-0.018	0.183	0.198	-0.013	0.046	0.005	-0.472
40	NEWSCC	0.825	0.164	-0.162	0.171	0.291	0.429	0.098	-0.019	-0.007	-0.017	-0.149

TABLE B-23 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1965)

ORTHOGONALLY ROTATED FACTOR MATRIX

VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS	1	2	3	4	5	6	7	8*	9	10*
	FACTOR NUMBER		1	2	3	4	5	6	7	8*	9	10*
	SUM SQUARES OVER VARIABLES		7.500	5.645	7.423	4.960	3.604	2.686	3.950	2.578	2.559	4.352
41	DIP.CC	0.733	0.213	0.089	0.147	-0.289	0.356	0.208	-0.033	0.032	-0.018	-0.145
42	BOR.CC	0.748	0.007	0.327	0.402	-0.041	0.258	-0.024	0.065	0.052	-0.000	0.097
43	DIS.CC	0.839	0.090	-0.216	-0.206	0.328	-0.127	-0.150	-0.319	0.036	0.002	0.150
44	EAI.CC	0.801	-0.060	-0.014	-0.045	-0.009	0.048	0.409	-0.019	0.133	0.017	0.165
45	CC ADR	0.784	-0.002	-0.060	0.120	-0.105	0.540	0.152	-0.058	0.071	-0.053	0.042
46	STU.CC	1.003	0.265	-0.027	0.956	-0.037	0.022	0.045	-0.030	0.002	-0.011	0.022
47	T-IMCC	0.856	0.102	0.007	-0.038	-0.111	0.543	0.033	-0.047	0.041	-0.009	-0.552
48	T-EXCC	0.683	0.542	-0.131	0.058	0.073	0.053	-0.023	0.026	0.118	0.063	-0.351
49	MPTREE	0.766	0.009	-0.031	0.115	-0.004	-0.017	0.813	-0.006	-0.114	-0.032	-0.142
50	EEMPCY	0.902	0.130	0.458	-0.044	-0.015	-0.061	0.505	-0.021	-0.061	0.068	-0.306
51	EECTCY	0.712	0.426	0.175	0.056	-0.159	0.043	0.005	-0.014	0.129	-0.046	-0.063
52	EE MGR	0.939	0.146	0.916	0.044	-0.054	0.015	0.018	0.002	-0.011	0.038	-0.016
53	CTTREE	0.854	0.677	0.418	-0.007	-0.071	0.290	0.061	-0.033	0.031	-0.017	-0.062
54	R-IMEE	0.844	0.071	0.116	-0.054	-0.116	0.409	0.119	-0.006	-0.080	-0.048	-0.628
55	R-EXEE	0.928	0.444	0.145	-0.003	-0.030	-0.060	0.152	-0.002	-0.024	0.070	-0.762
56	NEWSEE	0.757	0.176	0.055	0.115	0.457	0.201	0.120	-0.057	0.080	0.034	-0.162
57	DIP.EE	0.687	0.070	-0.177	0.065	0.001	0.087	-0.049	-0.111	0.070	-0.129	-0.085
58	BOR.EE	0.726	-0.054	0.054	-0.031	-0.100	0.234	-0.047	0.005	0.045	-0.006	-0.051
59	DIS.EE	0.777	0.006	-0.064	0.140	0.640	-0.033	0.024	0.159	-0.083	0.038	0.201
60	EAI.EE	0.964	0.179	0.056	-0.032	-0.024	0.042	0.008	-0.031	0.056	-0.010	-0.921
61	EE ADR	0.754	0.253	0.128	0.026	-0.021	0.112	0.112	0.067	0.190	0.023	0.043
62	STU.EE	0.817	0.142	0.074	0.443	-0.100	0.247	0.618	-0.051	-0.002	-0.068	0.002
63	T-IMEE	0.950	0.219	0.659	0.049	0.033	0.160	0.011	0.041	0.053	0.004	-0.609
64	T-EXEE	0.972	0.543	0.484	0.073	0.089	-0.149	-0.037	0.025	0.021	0.147	-0.576
65	MPTRUS	0.859	-0.046	0.125	-0.046	0.152	-0.125	-0.095	0.619	-0.143	0.013	-0.051
66	USMPCY	0.944	-0.019	-0.055	-0.020	0.029	-0.020	-0.011	0.956	-0.033	0.038	0.015
67	USCTCY	0.870	-0.022	0.077	-0.041	0.111	0.017	-0.045	0.906	-0.063	0.016	0.043
68	US MGR	0.941	0.004	0.103	-0.025	-0.004	-0.054	-0.041	0.936	-0.096	0.037	-0.028
69	CTTRUS	0.849	-0.038	0.472	-0.069	0.342	-0.144	0.028	0.228	-0.177	-0.010	-0.004
70	R-IMUS	0.862	-0.091	0.146	-0.125	0.830	-0.068	-0.119	0.228	-0.075	0.010	0.052
71	R-EXUS	0.816	-0.165	0.065	-0.114	0.779	-0.111	-0.018	-0.099	0.027	0.251	0.124
72	NEWSUS	0.797	0.072	0.075	-0.044	0.172	-0.112	0.010	0.123	-0.015	0.839	-0.054
73	DIP.US	0.673	-0.326	0.180	0.012	0.153	-0.146	-0.006	0.068	-0.060	-0.448	-0.028
74	BOR.US	0.767	-0.040	-0.009	-0.012	0.159	-0.020	-0.014	-0.115	-0.068	0.836	0.031
75	DIS.US	0.750	-0.184	0.139	0.123	-0.466	0.078	0.182	0.285	-0.030	-0.175	-0.100
76	EAI.US	0.881	0.044	0.456	-0.005	0.125	0.057	-0.113	0.181	0.050	0.763	-0.054
77	STU.US	0.854	0.229	0.791	-0.024	0.179	-0.064	-0.005	0.077	-0.068	0.078	-0.124
78	T-IMUS	0.703	0.050	0.574	-0.041	0.450	-0.101	-0.041	0.095	-0.154	0.208	-0.083
79	T-EXUS	0.650	-0.017	0.314	-0.053	0.542	-0.172	0.079	-0.009	-0.265	0.151	0.002

*Reverse signs of variables on this factor for proper interpretation

TABLE B-23 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1965)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13*	14	15	16	17	18*	19*	20*
SUM SQUARES OVER VARIABLES			3.172	1.750	1.937	1.773	1.875	1.315	3.502	1.565	3.188	1.760
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
1	CAD.SU	0.768	0.184	-0.019	0.001	-0.047	-0.169	0.133	-0.135	-0.078	0.046	-0.051
2	CAD.CC	0.806	-0.195	0.409	0.068	-0.140	0.177	-0.042	-0.001	0.108	0.137	-0.135
3	AIN.SU	0.817	0.040	-0.015	0.012	0.015	-0.080	0.079	-0.061	0.028	-0.013	-0.065
4	AIN.CC	0.739	-0.241	0.079	0.102	-0.104	0.174	0.042	0.018	-0.049	0.098	0.235
5	AIN.EE	0.909	-0.027	-0.057	-0.020	0.035	0.071	0.927	0.015	0.018	-0.006	-0.035
6	AIN.US	1.036	0.011	-0.047	0.112	0.061	0.004	0.009	0.019	0.046	0.024	-0.022
7	CP LST	0.769	0.151	-0.307	-0.015	0.240	-0.354	-0.251	0.002	-0.210	-0.002	-0.000
8	SU CPO	0.877	-0.110	-0.034	0.032	-0.024	-0.862	-0.067	0.089	0.157	0.018	-0.042
9	CC CPO	0.829	-0.090	-0.114	0.088	-0.035	0.076	-0.028	-0.093	-0.009	-0.093	0.191
10	CP SPL	0.906	-0.057	-0.049	-0.005	-0.004	0.124	-0.024	0.102	-0.879	0.068	0.033
11	CP NEU	0.797	0.420	-0.275	-0.294	0.349	0.320	-0.146	0.015	0.203	0.112	-0.012
12	CP MEM	1.061	0.013	0.074	-0.080	-0.090	-0.074	-0.002	0.037	-0.059	0.035	0.132
13	POP.	1.005	-0.006	-0.005	-0.089	0.076	0.048	-0.035	-0.033	-0.076	-0.057	0.105
14	PR.FR.	0.729	0.036	-0.027	0.008	0.005	0.282	0.134	-0.102	0.061	-0.243	0.120
15	MPTRSU	0.902	-0.017	-0.068	-0.031	0.061	0.037	-0.033	0.140	0.077	-0.834	-0.009
16	SUMPCY	0.950	0.023	-0.146	0.026	0.034	0.126	0.033	0.008	0.019	-0.331	-0.050
17	SUCTCY	0.906	0.107	0.096	0.167	-0.017	0.121	0.015	0.065	0.065	-0.604	0.084
18	SU MGR	0.848	-0.093	-0.206	0.004	0.044	-0.015	-0.082	0.043	0.030	-0.413	-0.029
19	CTTRSU	1.089	-0.043	0.028	0.107	-0.084	0.097	0.045	-0.023	0.041	-0.072	-0.009
20	R-IMSU	0.965	0.030	-0.058	-0.009	0.018	0.034	-0.020	0.109	0.028	0.096	-0.073
21	R-EXSU	0.995	-0.034	0.017	-0.016	-0.009	-0.054	-0.007	0.069	0.001	-0.032	0.029
22	NEWSSU	0.777	0.086	0.003	-0.040	-0.003	-0.115	-0.103	0.775	-0.090	-0.180	-0.097
23	DIP.SU	0.784	0.084	0.026	-0.034	0.067	0.113	0.074	0.742	-0.053	-0.100	0.135
24	BOR.SU	0.915	0.915	0.135	0.005	-0.084	-0.006	0.023	0.053	-0.033	-0.161	0.080
25	DIS.SU	0.887	-0.303	0.189	-0.134	-0.013	-0.037	0.099	-0.410	-0.228	0.074	-0.349
26	EAI.SU	0.766	0.833	-0.038	-0.066	0.086	0.059	-0.037	0.098	0.042	0.098	-0.039
27	SU ADR	0.989	0.088	0.243	-0.065	-0.064	-0.141	0.056	0.267	-0.180	-0.155	0.267
28	STU.SU	0.778	-0.024	0.021	0.117	-0.106	0.110	-0.111	0.265	-0.023	-0.163	-0.135
29	T-IMSU	1.000	0.025	0.000	0.010	-0.002	-0.017	0.008	0.014	0.007	-0.027	0.019
30	T-EXSU	1.006	0.003	0.047	-0.052	-0.020	-0.047	-0.008	0.009	0.013	-0.043	0.046
31	YE.IN.	0.775	0.232	-0.008	0.071	0.029	-0.136	-0.159	0.148	-0.069	-0.040	0.012
32	RAND.1	0.613	0.072	0.754	0.094	0.039	0.021	-0.055	0.021	0.018	0.001	-0.009
33	MPTRCC	0.827	-0.025	-0.027	0.078	0.303	0.015	-0.008	0.069	0.050	-0.135	-0.003
34	CCMPCY	0.790	-0.021	-0.015	-0.287	-0.016	0.079	0.011	0.130	0.083	0.067	-0.151
35	CCCTCY	0.986	-0.017	0.039	-0.020	-0.065	0.043	0.022	0.071	0.006	-0.080	0.049
36	CC MGR	0.936	0.064	0.019	0.014	0.936	0.013	0.051	0.074	0.016	-0.065	-0.015
37	CTTRCC	1.015	0.004	-0.018	-0.047	0.046	0.025	-0.010	-0.009	-0.005	-0.019	0.027
38	R-IMCC	0.780	-0.082	-0.031	-0.236	0.116	0.048	-0.009	0.111	-0.004	0.127	-0.029
39	R-EXCC	0.930	-0.107	0.177	-0.334	0.440	-0.132	-0.013	0.243	-0.087	0.080	0.257
40	NEWSCC	0.825	-0.129	0.097	-0.120	0.048	-0.028	-0.145	0.423	-0.095	-0.435	0.009

TABLE B-23 (Cont.)
DATA ANALYSIS FOR MATRIX C

MAJOR ACTOR INFLUENCE DATA (COMPARED 1965)

ORTHOGONALLY ROTATED FACTOR MATRIX

		FACTOR NUMBER	11	12	13*	14	15	16	17	18*	19*	20*
SUM SQUARES OVER VARIABLES			3.172	1.750	1.937	1.773	1.875	1.315	3.502	1.565	3.188	1.760
VARIABLE NO.	NAME	COMMUNALITY 20 FACTORS										
41	DIP.CC	0.733	-0.143	0.109	-0.153	0.025	0.026	-0.060	0.395	0.031	-0.351	0.202
42	BOR.CC	0.748	0.069	0.127	0.198	-0.025	0.044	-0.017	0.072	-0.305	-0.196	0.441
43	DIS.CC	0.839	-0.212	0.102	0.069	-0.086	-0.159	0.173	-0.216	0.040	0.149	-0.526
44	EAI.CC	0.801	0.271	0.308	0.013	-0.010	-0.056	0.237	-0.034	-0.102	-0.528	0.248
45	CC ADR	0.784	-0.161	0.047	-0.517	-0.051	0.268	0.012	0.203	-0.039	-0.102	0.064
46	STU.CC	1.003	0.014	0.040	0.014	-0.004	0.007	0.031	0.039	-0.063	0.033	0.049
47	T-IMCC	0.856	-0.086	0.018	0.005	0.387	0.017	-0.084	0.215	-0.108	0.051	0.044
48	T-EXCC	0.683	-0.048	0.218	-0.148	0.231	-0.144	-0.037	0.195	-0.147	0.007	0.110
49	MPTREE	0.766	-0.014	0.037	-0.062	0.025	-0.060	-0.006	-0.026	0.062	-0.186	0.082
50	EEMPCY	0.902	-0.041	0.120	-0.011	-0.005	0.034	0.071	-0.020	0.040	-0.482	0.233
51	EECTCY	0.712	0.003	-0.307	0.033	0.001	-0.196	-0.013	0.207	0.005	-0.497	-0.153
52	EE MGR	0.939	-0.123	0.046	0.006	0.011	-0.113	0.073	-0.062	0.128	-0.062	0.073
53	CTTREE	0.854	-0.136	-0.112	0.055	-0.039	0.119	-0.012	0.147	0.095	-0.191	-0.070
54	R-IMEE	0.844	0.193	-0.192	-0.140	-0.008	-0.133	-0.063	0.299	-0.014	0.072	-0.120
55	R-EXEE	0.928	0.132	-0.008	-0.142	0.030	-0.164	-0.026	0.160	0.002	0.028	0.057
56	NEWSEE	0.757	0.003	-0.155	-0.161	0.141	-0.323	-0.066	0.289	-0.180	-0.258	-0.096
57	DIP.EE	0.687	0.079	-0.005	0.003	0.073	-0.062	0.073	0.755	0.011	0.060	0.030
58	BOR.EE	0.726	0.136	-0.149	-0.774	0.034	-0.003	0.011	-0.017	-0.007	0.049	-0.055
59	DIS.EE	0.777	-0.249	0.156	0.043	-0.072	0.003	0.063	-0.279	-0.276	0.005	-0.129
60	EAI.EE	0.964	-0.029	0.026	0.100	-0.062	0.081	0.037	0.013	0.026	-0.221	0.030
61	EE ADR	0.754	0.347	0.073	-0.460	-0.045	-0.175	0.085	0.247	0.027	-0.295	0.281
62	STU.EE	0.817	-0.065	-0.065	-0.012	-0.042	-0.068	-0.074	0.282	0.022	-0.169	-0.086
63	T-IMEE	0.950	0.161	-0.070	0.049	-0.031	-0.049	0.039	0.151	-0.013	-0.007	-0.057
64	T-EXEE	0.972	0.090	0.097	-0.048	-0.073	0.043	-0.006	0.079	-0.108	-0.067	-0.049
65	MPTRUS	0.859	0.582	0.008	-0.110	0.105	0.083	-0.008	0.056	0.060	0.084	-0.053
66	USMPCY	0.944	-0.055	-0.049	0.016	-0.015	-0.003	-0.003	-0.117	0.041	0.032	-0.006
67	USCTCY	0.870	0.102	0.047	0.037	0.015	0.025	0.009	0.030	-0.050	-0.013	0.041
68	US MGR	0.941	0.166	-0.053	-0.031	0.016	0.024	0.001	-0.046	0.037	0.043	-0.010
69	CTTRUS	0.849	0.232	0.233	-0.083	0.097	0.015	0.066	0.132	-0.213	-0.100	-0.443
70	R-IMUS	0.862	0.083	-0.053	0.096	0.048	-0.132	0.041	-0.080	-0.004	0.027	0.042
71	R-EXUS	0.816	-0.053	-0.064	0.028	-0.044	0.100	0.090	-0.106	0.119	0.074	0.066
72	NEWSUS	0.797	0.022	-0.036	-0.009	0.037	-0.006	-0.124	-0.015	-0.003	0.037	-0.012
73	DIP.US	0.673	0.010	0.095	0.333	0.060	-0.155	0.036	0.320	-0.125	-0.025	0.110
74	BOR.US	0.767	-0.042	-0.039	0.017	-0.003	0.046	0.057	-0.031	-0.100	0.010	0.033
75	DIS.US	0.750	-0.044	0.124	-0.127	0.085	0.257	0.067	0.160	-0.111	0.011	0.392
76	EAI.US	0.881	0.077	-0.002	0.059	0.049	-0.008	0.034	-0.044	0.051	-0.028	-0.034
77	STU.US	0.854	0.269	-0.076	-0.009	0.001	0.036	-0.147	0.060	-0.031	0.036	-0.002
78	T-IMUS	0.703	0.051	0.091	0.057	-0.038	-0.026	-0.034	0.045	-0.208	0.094	-0.026
79	T-EXUS	0.650	0.018	0.112	0.025	-0.035	0.102	-0.070	0.061	-0.226	0.098	-0.177

*Reverse signs of variables on this factor for proper interpretation

TABLE B-24
DATA ANALYSIS FOR MATRIX C, MISSING DATA DELETED
TABLE OF POSITIVE EIGENVALUES AND COMMUNALITIES

MAJOR ACTOR INFLUENCE DATA (COMPARED 1965)

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (79) FACTORS		20 ROTATED FACTORS	
1	14.222	18.0	18.0	11.2	11.2
2	8.365	10.6	28.6	8.4	19.6
3	6.213	7.9	36.5	11.1	30.7
4	5.174	6.6	43.0	7.4	38.1
5	4.166	5.3	48.3	5.4	43.5
6	3.738	4.7	53.0	4.0	47.5
7	3.180	4.0	57.0	5.9	53.4
8	3.088	3.9	61.0	3.8	57.2
9	2.652	3.4	64.3	3.8	61.0
10	2.377	3.0	67.3	6.5	67.5
11	2.118	2.7	70.0	4.7	72.2
12	1.953	2.5	72.5	2.6	74.8
13	1.645	2.1	74.6	2.9	77.7
14	1.510	1.9	76.5	2.6	80.3
15	1.411	1.8	78.3	2.8	83.1
16	1.276	1.6	79.9	2.0	85.1
17	1.160	1.5	81.3	5.2	90.3
18	1.135	1.4	82.8	2.3	92.6
19	0.875	1.1	83.9	4.8	97.4
20	0.849	1.1	85.0	2.6	100
21	0.795	1.0	86.0		
22	0.770	1.0	86.9		
23	0.726	0.9	87.9		
24	0.646	0.8	88.7		
25	0.612	0.8	89.4		
26	0.606	0.8	90.2		
27	0.535	0.7	90.9		
28	0.501	0.6	91.5		
29	0.474	0.6	92.1		
30	0.442	0.6	92.7		
31	0.362	0.5	93.1		
32	0.326	0.4	93.6		
33	0.318	0.4	94.0		
34	0.294	0.4	94.3		
35	0.270	0.3	94.7		
36	0.266	0.3	95.0		
37	0.262	0.3	95.3		
38	0.261	0.3	95.7		
39	0.243	0.3	96.0		
40	0.237	0.3	96.3		
41	0.228	0.3	96.6		
42	0.224	0.3	96.9		
43	0.223	0.3	97.1		
44	0.221	0.3	97.4		
45	0.213	0.3	97.7		
46	0.200	0.3	97.9		
47	0.195	0.2	98.2		
48	0.186	0.2	98.4		
49	0.179	0.2	98.6		
50	0.175	0.2	98.9		

NO.	EIGENVALUE	PERCENT OF COMMUNALITY OVER ALL (79) FACTORS		20 ROTATED FACTORS
51	0.170	0.2	99.1	
52	0.154	0.2	99.3	
53	0.149	0.2	99.5	
54	0.149	0.2	99.7	
55	0.144	0.2	99.8	
56	0.143	0.2	100.0	
57	0.134	0.2		
58	0.113	0.1		
59	0.101	0.1		
60	0.087	0.1		
61	0.080	0.1		
62	0.068	0.1		
63	0.059	0.1		
64	0.053	0.1		
65	0.049	0.1		
66	0.048	0.1		
67	0.044	0.1		
68	0.035	0.0		
69	0.035	0.0		
70	0.034	0.0		
71	0.030	0.0		
72	0.017	0.0		

TRACE OF ORIGINAL MATRIX = 79.000
COMMUNALITY OVER 79 FACTORS = 78.991
20 FACTORS = 67.108

APPENDIX C

ABSTRACTS OF RESEARCH ON POLITICAL INSTABILITY AND VIOLENCE

This appendix contains abstracts of quantitative studies on political instability and violence within and between states. The results of these research projects are relevant to the NRL Special Warfare program because they seek the description and explanation of the kind of conflict which could involve hazards to U.S. interests and, thus, the use of naval forces to deter, limit, or terminate warfare before it has escalated to a major confrontation. Generally excluded from this survey are conjectural essays and non-empirical work on the causes of violence, insurgency, and interstate warfare.

Part A deals with eight studies on intrastate warfare and instability. Part B contains abstracts of two major studies of national political systems, including aspects of political stability and violence. Part C summarizes eight studies of interstate conflict (including warfare).

These three groups of studies all bear heavily on regional stability in many areas of the world. In an era where the line between interstate war and intrastate upheaval has been blurred by subversive and insurgency movements, it is necessary to isolate potential causes of various types of political conflict. Movements, organizations, and wars may spillover from state to state, or they may be confined to localized disputes. Thus, there may be great implications in intrastate war for regional stability, or there may be little regional danger. The causes of intrastate and interstate war may be similar or very different; predictive knowledge about world trouble spots depends on more careful studies of conflict at various political levels. The array of studies reviewed in this section isolates some tentative relationships between and predictors to various types of conflict.

A. Internal War

The first pair of studies deal with external influence as a motivation for civil unrest in Latin America. They are pertinent to U.S. policy interests, as they test for the effect of U.S. economic involvement on civil unrest.

Manus Midlarsky and Raymond Tanter, "Towards a Theory of Political Instability in Latin America," Journal of Peace Research, 3, 1967.

Purpose and Theoretical Framework

The authors investigate foreign influence on domestic political instability, testing the common supposition that such instability is produced solely by internal factors. Specifically, the link between U.S. economic presence and Latin American instability is examined.

Independent Variables

1. U.S. economic presence - multiplicative product of two ratios:

   a. Dollar value of private U.S. investments (1956) divided by the population for each country (1956) and

   b. Country's trade with the U.S. divided by the total value of that country's trade (1956).

2. GNP/CAP - level of economic development (1957).

Dependent Variables

Measures of Political Instability and Hostility Toward the United States, 1958-1960:

1. Deaths as a result of domestic group violence (1958-60)

2. Number of revolutions (non-violent coups d'etat), (1958-60)

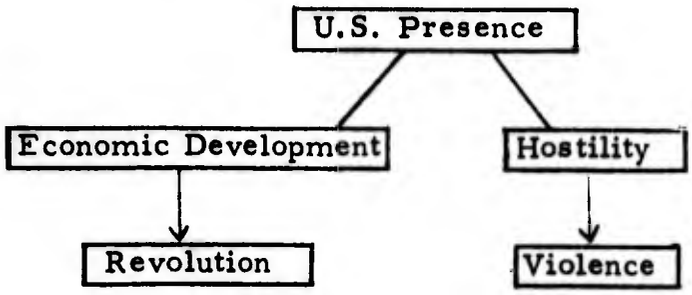
3. Number of occasions of hostility toward the United States (1958-60).

Hypotheses

1. In theory, two possible sequential reactions to the U.S. economic presence may exist. The first suggests that the U.S. economic presence may lead to hostility directed at the U.S., which may result in domestic violence (Merle King, 1956; Leland Johnson, 1965). The second sequence derives from theories of the revolutionary process which indicate that the increased level of economic development resulting from this economic

* The full citations for textual references are in Appendix E, pp. 33-37

presence may lead to the occurrence of revolution, (Alexis Tocqueville; Crane Brinton, 1952; James C. Davies, 1962). Since Latin American revolution usually takes the form of a non-violent coup d'etat, it is assumed that violence and revolution are distinct from one another.



2. The distinction between threat and legitimacy systems were thought to be critical. If the local government is sanctioned by a legitimizing agency such as a constitution and free elections, then a high degree of economic dependence may not be resented. In a non-democratic setting the demonstration effect (resentment) may vary directly with the degree of inequality in the distribution of land or income. (The higher the degree of inequality, the greater the resentment at seeing economic development without an equal distribution of land or income.)

Analysis

The analysis of the significance of relationships is tested first for all cases under consideration (N = 18) and then twice where populations of cases is divided into countries which are considered to be democratic and those which are considered to be non-democratic by "Latin American specialists." The correlational analysis is based on a 3-year time lag (1956 economic data) and 1958-60 violence data, which may be justified since the effect of foreign investment on local attitudes may take time to develop.

Major Findings and Their Relationship to Hypotheses

1. Correlational analysis (product-moment correlation coefficient):

   a. Relationships between U.S. economic presence and hostility and violence are not significant.

b. Relationship between hostility towards the U.S. and violence is significant* and positive.

c. Relationship between increasing GNP/CAP and revolution is significant and positive. It is useful to note that this finding may conflict with Russett's regression analysis showing high levels of economic development associated with low civil violence and a possibly curvilinear relationship. The countries dealt with here, however, were all at the less developed or developing end of Russett's continuum, so that they may not have reached high wealth levels.

d. The relationship between violence and revolution is significant and positive, which suggests that perhaps the tradition of non-violent coup in Latin America may be changing.

e. The relationship between hostility and revolution is significant and positive, which indicates that hostility toward the U.S. may be a motivating force in those successful and unsuccessful revolutions which do not conform to the classic model of the domestically inspired coup d'etat. (We should be aware, too, of the possibility that U.S. presence is used as a scapegoat by domestic groups with other grievances.)

f. As expected, none of the relationships for the "democratic" countries are positive; i.e., U.S. economic presence does not seem to foment resentment. (note that N = 4 for this category.)

g. Positive relationships for "non-democratic" countries are: U.S. economic presence with economic development and revolution (significant at $P \leq 0.1$), and economic development with revolution. The direct relationship between U.S. economic presence and hostility does not seem statistically significant; rather the idea that U.S. economic presence leads to higher economic development which in turn is associated with revolution and violence is supported.

* Significance tests were made for illustrative purposes despite the fact that $N \leq 18$. With so few cases considered, valid interpretations can really only be made for Latin America, and not necessarily for states in general.

2. Causal inference analysis:

   a. U.S. economic presence leads to, or appears to cause, higher level of economic development. Economic development and hostility both lead to revolution (primarily in non-democratic countries, but true for total cases as well).

   b. Violent forms of revolution may be replacing the bloodless coup d'etat in Latin America.

   c. Thus, the Latin American countries may be penetrated societies, and violence and revolution may be explained in part by the U.S. economic presence as a linkage to the external environment.

3. Policy Implications:

   a. U. S. economic presence in democratic Latin American countries may produce cooperative Latin American attitude toward the U.S.

   b. The stability of non-democratic societies is affected by U.S. economic presence.

   c. Non-democratic Latin American countries may need economic increment that investment and trade can provide, but economic development may result in hostility to the investor nation as well as to local political instability.

Evaluation:

1. The fact that democratic Latin American states do not seem to react negatively to U.S. economic presence does not warrant the conclusion that U.S. investment fosters favorable attitudes in such states. Many other factors could apply, and the most that can be said is that investment alone does not produce hostility. It is also dangerous to attribute popular toleration of U.S. economic presence to popular satisfaction and democratic government. There are many factors that

might cause both pro-U.S. and democratic attitudes in a country.

2. The fact that there may be a direct link between economic presence and violence (as opposed to verbal hostility or peaceful coups) is not fully enough explored by the authors.

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Raymond Tanter, Toward A Theory of Conflict Behavior in Latin America, paper presented to International Political Science Association, September, 1967.

Purpose and Theoretical Framework

Tanter approaches the study of intrastate conflict behavior by examining the relevance of external influences on internal conflict. This paper goes beyond the Tanter-Midlarsky study, Toward A Theory of Political Instability in Latin America, by postulating different intervening conditions which ultimately lead to violence. The new intervening variables are level of urbanization and social mobilization.

This study also goes beyond those of Russett, Rummel, Feierabend, Gurr and Tanter (reviewed in this report)where intrastate violence is explained in terms of domestic conditions. These studies were unable to explain high magnitudes of violence in this way. In Tanter's study, the effect of foreign influence on domestic instability is examined. Economic growth alone is not enough to explain domestic upheaval or stability in Latin America. It should be noted, though, that it has been generally quite successful in accounting for low level warfare.

Independent Variables

A. External Involvement, 1953-61

1. U.S. private economic presence (1956)

2. U. S. overseas loans and grants (1953-61)

3. U.S. military assistance (1953-61)

4. Aid from International Governmental Organizations (1953-61)

Each measure is in the form of per capita data (population figures taken for 1957). The analysis treats each U.S. measure singly and also employs an overall index of total U.S. presence.

B. Intervening Variables: Urbanization and Social Mobilization

Urbanization and social mobilization are used as intervening conditions between the initial cause--external penetration--and the ultimate effect--domestic conflict behavior. A great deal has been written on the effect of urbanization on social development and change, economic development and conflict. Tanter did some empirical testing and discovered that urbanization seems to lead to both social mobilization and economic development; social mobilization then appears to bring about political development--defined as having representative institutions and inter-party competition (in Latin America).*

1. Urbanization: Per cent of a country's population in cities greater than 100,000 in the early 1960's.

2. Social mobilization is measured from data on the degree of unionization: union membership divided by the non-agricultural population.

Dependent Variable Total Magnitude of Civil Violence (TMCV) (1961-63), TMCV in Latin America is a combination of three attributes:

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* It is possible to compare this hypothesis to the causal path analysis carried out by Cnudde and McCrone - American Political Science Review, 1967--linking urbanization to education to media development to "political development"(in the form of democratic institutions). Cnudde, McCrone and others point to the dangers involved in a society that has sophisticated political institutions without first developing the necessary education and media to effectively communicate government policies and values to the society. There are likely to be revolutions in such societies. There may also be revolutions in societies which have well developed media but weak political institutions (parties, efficient bureaucracy, legitimate regime, etc.) The media will spread new ideas or people may begin to want things that the government cannot provide. See for example, S. Huntington, "Political Development and Political Decay," World Politics, 17 April 1965.

1. Extent of participation of those affected (e.g., the proportion of those participating for each nation).

2. Duration of conflict.

3. Intensity of actions.

The magnitude scale for each year runs from 1 to 63; the score for 1961-63 is the sum of all three years. Thus, external involvement data concerned 1953-61, intervening variable data was based on the early 1960's, and the TMCV data originated from 1961-63. Again we have the sequential time-lag described in the previous study.

Hypotheses

The working hypothesis relates three sets of variables: initial, intervening, and dependent, in that order, to determine their inter-relationships.

Analysis

1. Measures of the three sets of variables were intercorrelated across 18 Latin American nations.

2. To test linkage between initial, intervening and dependent variables, a causal model was used. The logic of the design is based on the idea that one can assess the relative explanatory power of alternative causes of violence by varying the initial variables while holding the intervening variables constant (i.e., choosing cases of nations with the same general levels of urbanization or mobilization). The author asks, "When one controls for the level of urbanization and social mobilization, is there a relationship between the level of U.S. private economic presence and the magnitude of civil violence?" If this relationship disappears when intervening conditions are controlled, this implies that the link between U.S. economic presence and violence is not direct, but rather is part of a causal sequence with urbanization and mobilization necessary for the link to hold.

3. A regression analysis (seeking a linear relationship between levels of domestic violence and the sets of independent variables) was used as another way of exposing the relative impacts of external assistance upon violence. From the regression line obtained on a graph, Tanter attempted to estimate the level of violence for each Latin American nation.

Major Findings and Their Relationship to Hypotheses

1. No clear pattern emerged, and only two of the six external measures were associated positively with violence (private economic presence and total U.S. involvement), while three were associated negatively (U.S. AID, IGO assistance, and total U.S. Government assistance). Most significantly, U.S. military assistance had no direct relationship to violence.

2. The results of the causal inference analysis generally disconfirm the hypothesis that the link between external assistance and violence is through urbanization and mobilization. Only for military assistance might this idea hold, yet it is conceptually difficult to see how military aid alone leads to greater urbanization or social mobilization (i.e., more vital national interest groups), and that these then lead to violence. In general, there remains notable, though not strong, direct links between U.S. economic assistance (non-military) or presence and levels civil violence even when urbanization and mobilization are used as intervening variables.

3. It is important to note the contrast between the relationship of overall U.S. economic presence and violence, on the one hand, and U.S. economic aid and violence on the other. The former is a moderate positive relationship (indicating that greater U.S. presence is associated with greater violence) and the latter is a stronger negative relationship (possibly indicating an inhibiting effect of aid on violence).

4. U.S. military assistance per capita is generally unrelated directly to the magnitude of civil violence (1961-63).

5. International organizational assistance per capita (1953-61) is associated negatively (26% of explained variance) with total magnitude of civil violence (1961-63).

6. Tanter found that his variables and model work best for the countries having a level of violence near the mean of .44; they were less reliable for countries having high or low levels of violence. The level of violence for Brazil is well predicted; that of the Dominican Republic is greatly underestimated. Tanter concedes that this is not an improvement over the Rummel (1964) and Gurr (1967) studies which predicted well to countries having little or no violence but were not able to predict high magnitudes of violence.

7. Basically the relationship between external assistance and civil violence is not strongly affected by urbanization and social mobilization.

8. Only about 30% of the total magnitude of civil violence 1961-63 can be explained by one of the types of external financial assistance or economic presence in conjunction with urbanization and social mobilization.

Evaluation

1. The negative results of the study indicate at least that in Latin America urbanization and social mobilization are not significant intervening variables between external economic assistance and conflict, and that U.S. military assistance does not correlate with domestic violence in Latin America. External financial and military assistance in general do not seem to be major causes of violence in Latin American domestic politics.

2. This does not mean that other intervening variables, such as colonial history or previous political experience with the U.S. or internal price levels, might not be very important intervening variables in determining the effect of U.S. economic presence on domestic violence.

*

*

The following three studies (Gurr, Feierabend and Nesvold) examine possible causes of internal war, and deal especially with frustration or relative deprivation. Though their methods differ, their findings are similar. Gurr also deals with the effectiveness of force in putting down civil upheaval. Nesvold goes beyond factor analysis to other methods of categorizing violence, and thus allows comparison of conclusions across many research methods.

Ted Gurr, A Causal Model of Civil Strife: A Comparative Analysis Using New Indices, Princeton, prepublication version, November, 1967.

Purpose and Theoretical Framework

The study describes some results of a successful attempt to assess and refine a causal model of the general conditions of civil strife (not to be taken as a specific prediction of any particular type of violence or revolution) using data collected for 114 political units. It is an attempt at identification and systematic analysis of conditions that dispose men to strife generally, revolution included.

Theoretical Framework - Psychological Theory:

The basic theoretical proposition is that a perceptual variable, relative deprivation, is the main precondition for civil strife of any kind, and that the more widespread and intense deprivation is among any interacting population, the greater the magnitude of strife in one or another form. Relative deprivation as used here is similar to the Feierabends' concept of frustration: the actors' perception of discrepancy between their value expectations and their value capabilities. The response to perceived deprivation tends to be anger, and anger is manifested in violence, or aggression. The effect is, however, mediated by a number of intervening, social conditions. The model stipulates four intervening variables: "coercive potential," "institutionalization," "social facilitation," and the "legitimacy" of the political regime.

Independent Variables

With the exception of magnitude of strife and its components, the underlying variables examined in this study cannot be measured directly and must be inferred from indicators. Summary measures are therefore

created by combining two to seven indicators, which afford greater validity than any single measure.

1. Measures of Deprivation

A set of comparable cross-national indices of conditions which imply pervasive and potent types of deprivation were constructed. Any sharp increase in peoples' expectations that is unaccompanied by the perception of an increase in possibilities of fulfillment, or any abrupt limitation on what they have or can hope to attain, constitutes relative deprivation. Reliance was placed partly on aggregate data and partly on indices constructed by coding narrative and historical material. Measures representing short-term and some persisting conditions of economic, political, and sociocultural deprivation were constructed. Separate measures were included first of the intensity of inferred deprivation and second of its pervasiveness (proportion of population affected), plus a third measure combining the two elements.

a. Persisting Deprivation:

Six indicators of what Gurr inferred to be persisting deprivation were combined to obtain a single long-run deprivation measure: economic deprivation (exclusion of groups from high economic value positions); political deprivation (group exclusion from elite political positions); separatism (strength of historically separatist regional or ethnic groups); dependence on private foreign capital (indexed by negative net factor payments abroad as a per cent of Gross Domestic Production in the late 1950's); religious cleavages; lack of educational opportunity (per cent of children aged 5-19 not in primary or secondary school, ca. 1960).

b. Short-term Deprivation

Indicators were devised for five kinds of short-term economic deprivation and two of political deprivation: short-term trends (per cent of change in total trade value) in trade value, 1957-60 compared with 1950-57;

short-term trends in trade value, 1960-63 compared with 1950-60; inflation 1960-63 compared with 1958-61; 1960-63 GNP growth rates compared with 1950's growth rate; adverse economic conditions, 1960-63; new restrictions on political participation and representation by the regime; and new value-depriving policies of governments, 1960-63. Summary short-term deprivation scores were calculated for each country from these seven indicators by adding summary scores of the five economic variables and two political deprivation variables.

Intervening Variables

2. Coercion:

   a. Coercive force size was measured in terms of military and internal security forces participation ratios.

   b. Coercive Potential - Coercive force size weighted for the degree of loyalty of coercive forces to the regime (loyalty being measured by the time duration since the last military intervention in politics).

3. "Institutionalization" in terms of the extent to which societal structures are broad in scope, command large resources and/or personnel, and are stable and persisting.

   Three indicators are: ratio of labor union membership to non-agricultural employment, central government budgeted expenditures as a percentage of Gross Domestic Product, ca. 1962, and the stability of the political party system (as judged by number of parties and history of the party system). Highest institutionalization scores go to Eastern European Communist states, with Western European democracies slightly lower. Lowest scores are Ethiopia, Haiti, Nepal and Yemen.

4. "Facilitation," i.e., social and environmental conditions that facilitate outbreak and persistence of strife:

a. Past Levels of Civil Strife - i.e., frequency of internal wars from 1946-59.

b. Social and Structural Facilitation

Aspects of organizational and environmental facilitation of strife. The variables used are: terrain and transportation network of a country; relative strength of the Communist Party organizations; and extent of external support for initiators of strife in the 1961-1965 period.

c. Legitimacy - i.e., an index combining the circumstances under which regime attained its present form with an indicator of the durability of the regime.

These independent variables cover a population of 114 national and colonial political entities, each of which had a population of 1 million or more in 1962.

Dependent Variables

Magnitude of Civil Strife (1961-65) defined as: collective, non-governmental politically relevant attacks on persons or property within an autonomous or colonial political unit.

(Strife events occurred in 104 of the 114 polities during the 1961-1965 period).

a. Pervasiveness - sum of participants as a proportion of population;

b. Duration - sum of the spans of time of all strife events in each polity;

c. Intensity - total estimated casualties, dead and injured, in all strife events in each polity as a proportion of the total population.

Scores were calculated separately for turmoil (relatively spontaneous mass strife - e.g., political strikes, riots, etc.); conspiracy (intensively organized relatively small-scale strife); and internal war (large scale civil war and guerrilla war) for each country, and for all strife taken together for each polity.

Hypotheses

1. The greater the perceived relative deprivation, the greater the magnitude of civil strife.

2. Governments' coercive potential may affect the relationship between relative deprivation and civil violence. This may be a curvilinear relationship, whereby medium levels of coercive potential increase the magnitude of strife. Only very high levels of coercion would effectively limit the occurrence of strife. Thus, Gurr hypothesizes that coercive force size varies curvilinearly with levels of strife and that coercive potential (based on the loyalty of the forces) has a linear relationship with strife (i.e., strife decreases as troop loyalty increases).

3. Since greater institutionalization in society (measured in labor unions, etc.) may provide greater social satisfaction and also non-violent means of social protest, the relationship between institutionalization and strife is likely to be linear (i.e., the greater the institutionalization, the lower the magnitude of strife).

4. Certain phenomena, such as past level of civil strife or social and structural opportunities, facilitate civil strife; i.e., greater levels of past strife or of social and structural facilitation allow greater magnitude of strife.

5. The hypothesized effect of legitimacy as an intervening variable is also linear: the greater the legitmacy at a given level of deprivation, the less the magnitude of consequent strife.

Analysis

Four multiple regression analyses were performed. The dependent variables in the four analyses were, respectively:

1. Total magnitude of civil strife;

2. Magnitude of conspiracy;

3. Magnitude of internal war;

4. Magnitude of turmoil

Independent variables were the ten summary variables. A causal path analysis was performed, using the correlations between certain variables, controlling for the effects of others. In this way the importance of certain variables as intervening effects in the causal sequence leading to civil strife could be estimated.

Major Findings:

1. The initial model of the causes of civil strife postulated that all the mediating variables intervened separately and simultaneously between deprivation and strife. The results of the causal analysis indicate this is only partly correct: none of the mediating variables appear to affect the relationship between persisting deprivation and strife; i.e., there is a certain inevitability about the association between such deprivation and strife. Persisting deprivation is, moreover, equally potent as a source of conspiracy, internal war, and turmoil. With the partial and weak exception of institutionalization, no patterns of societal arrangements nor coercive potential which are included in the study have any consistent effect on persisting deprivation's impact on civil strife. The intervening variables of facilitation and coercive potential, however, do tend to reduce short-term deprivation's effects.

2. The hypothesis (#2) of a curvilinear relationship between coercive potential and strife is supported. Medium levels of coercive strength do seem to go along with increased strife, though it is hard to determine whether the strife is "caused" by resentment of the troops or whether troop strength is increased in response to on-going strife (though Gurr did remove from this test all countries with protracted political violence over a number of years).

3. The multiple regression analysis shows that 65% of the civil strife variance can be accounted for by 8 of the 10 independent variables (excluding coercive force size and short-term deprivation). Forty per cent of the variance in "conspiracies," 42% of internal war, and 28% of "turmoil" can be so accounted for. Prediction of the total magnitude of civil strife for each individual country from the formula containing these 8 independent variables was, in general, good. The countries in which prediction was poorest (Congo, Rwanda, Yemen, Indonesia) probably had the most inaccurate strife-death reports (no explanation is offered for the fact that Italy and Belgium had much higher levels of violence than predicted).

4. Looking at the interrelationships of the intervening variables themselves, we find that institutionalization has no direct link to strife, but does seem to lead to greater coercive potential and "facilitation." "Legitmacy" (or lack of it) seems to have a direct causal link to strife, independent of the causal effects of deprivation on strife. Legitmacy also leads to greater coercive potential. Coercive potential seems to be a pivotal variable, arising out of increased legitimacy and leading to more "facilitation," but with little direct effect on strife itself. Past strife seems to be a poor predictor of future strife since it has no direct effect.

5. Most generally, then, we find "social and structural facilitation" to be the best predictor of strife (about 50% of variance accounted for), while deprivation is important as well, accounting for about one third the variance. We should not underestimate psychological variables such as "relative deprivation" in accounting for domestic civil strife, especially if conditions leading to such psychological reactions are persistent. Coercive potential and facilitation opportunities are also very important, and perhaps easier to measure. We should note that only at relatively high levels of coercive potential does strife tend to decline--moderate levels may exacerbate strife. Moreover, there is an outer limit past which the relationship tends to change: countries with the largest coercive forces tend to have more strife than those with somewhat smaller forces.

Evaluation

1. Gurr's study focuses directly on a form of internal strife that is clearly violent, and therefore, very relevant for this study of low level conflict. He is not dealing generally with political disagreements or changes of office, as the Feierabends do, in part, but with physical attacks on persons and property; i.e., violent societal conflict.

2. Gurr has attempted to measure a very complex psychological attitude ("relative deprivation") with aggregate data and subjective judgments about whether certain groups are satisfied with their access to certain positions. Before firm conclusions are made about the importance of relative deprivation, psychological studies should be undertaken which directly ask people or leaders how they feel about the position they are in, or which systematically analyze leaders' statements for such attitudes.

3. The concept of "social and structural facilitation" emerged as a very important predictor of strife. Yet the use of "Communist Party status" as the major indicator of "social facilitation" of strife leaves out many other possible sources of such facilitation (such as gun sales or ownership within the society, etc.).

4. Much of the conflict data, notably regarding casualties, were estimated.

5. No clear theoretical statement is made about time-lag effects or the implications of having data from various years. Conflict data was post-1960, and no measure was included of political changes in various countries in 1960 (especially the independence movement in Africa) before this conflict data was compared to pre-1960 deprivation data.

6. This study, like most others reviewed here, fails to weight various types of violent acts (although it distinguishes between them) according to their perceived importance in the society in question. Conceivably, a violent act means far less in an environment of frequent past violence than in one of past tranquillity.

7. Perhaps it would be useful to conceptualize deprivation in terms of what other countries in the world have as well as what the country in question lacks. Though difficult, it would be worthwhile to measure the perceptions of a poor society concerning rich ones. Groups within a state may rebel not so much because of a decline in domestic conditions, but because of a persistent failure of domestic institutions to provide growth rates and services comparable to those of neighboring states.

8. The size of bureaucracy in various countries was not included as part of the "institutionalization" score. Bureaucratic development and efficiency are certainly important aspects in satisfying the demands of deprived sectors of society.

9. Despite these criticisms, Gurr's study accounts for about two-thirds of the variance in total magnitude of civil strife - a remarkable piece of work. Until a better combination of independent variables is produced, Gurr's index is probably the best available measurement of domestic violence.

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Ivo K. Feierabend, Rosalind D. Feierabend, et al., "Aggressive Behaviors Within Polities, 1948-1962: A Cross National Study, "Journal of Conflict Resolution, 10 September 1966.

Purpose and Theoretical Framework

This study attempts to determine the relationship of social frustration and modernity to political stability and domestic conflict. As a theoretical framework, frustration-aggression theory (Dollard et al., 1939; Maier, 1949; McNeil, 1959; Buss, 1961; Berkowitz, 1962) and modernization theory (Lerner, 1958; Deutsch, 1961; Cutright, 1963) were used. Frustration is hypothesized to be induced by the gap between social wants and the satisfaction of these wants for segments of society. Frustration then leads to political instability. A second objective of this study was to examine a theory concerning the prediction of changes in political stability over time.

Independent Variables:

The highly theoretical notions of social "want satisfaction" and "want formation" were translated into indices based on observable phenomena.

Measures of GNP, caloric intake, telephones, physicians, newspapers and radios were singled out as representing indices of satisfaction. For "want formation" indices, literacy and urbanization were chosen as indicators (exposure to modernity). The eight indices were used to construct both a modernity index (sum of scores of all of the eight indicators for each of the eighty-four countries) and a frustration index (a ratio of a country's combined coded score for the six satisfaction indices divided by the country's coded literacy or urbanization score, whichever was higher.) Data on frustration and modernity were collected for 84 countries in the years 1948-1961. It was assumed that some time lag would occur before social frustrations would make themselves felt in political aggressions.

For the second phase, studying the effect of rate of change in modernization or technology on stability, nine independent variables were posited as predictors: caloric intake, literacy, primary and post-primary education, national income, cost of living, infant mortality, urbanization, and radios.

Dependent Variables

An index of instability was constructed from data on internal conflict behavior for eighty-four nations for a seven-year period, 1955-61. The data collected on internal conflict behavior were scaled and a sum total of each country's instability ratings was then calculated. The concept of internal conflict was rather broadly defined to include events such as demonstrations, riots, coups, guerrilla warfare, as well as non-violent political change.

Hypotheses

1. Systemic frustration is inversely related to political stability.

2. If systemic frustration is present, political stability still may be predicted if:

   a. It is a politically non-participant society (politically relevant strata are not organized).

   b. It is a participant society in which constructive solutions to frustrating situations are available (effective and legitimate regimes implied).

c. A coercive government is capable of preventing overt acts of hostility.

d. As a result of the coerciveness of government, the aggressive impulse is vented or displaced in aggression against minority groups and/or against other nations.

e. If individual acts of aggression are sufficiently abundant to provide an outlet, then stability may occur despite frustration.

3. In the relative absence of these equalifying conditions, aggressive behavior in the form of political instability is the predicted consequence of systemic frustration.

4. The higher (lower) the social want formation and the lower (higher) the want satisfaction, the greater (the less) the systemic frustration.

5. The highest and lowest levels of social modernity will produce maximum political stability (i.e., both well-developed and traditional states will be more "stable" than "developing" states).

6. The faster (slower) the rate of modernization, the higher (lower) the level of political instability.

Analyses:

1. Countries were rank-ordered on a seven-point domestic stability scale on the basis of their most unstable event and the frequency of all unstable events. Countries were also compared for the relative frequency of occurrence of all 30 instability behaviors for the seven years. The set of countries was then partitioned into those experiencing various levels of instability along with various levels of frustration, and various levels of modernity.

2. To supplement the analysis, a factor analysis of the conflict variables was performed although no hypothesis testing was done with it.

3. To investigate the effect of rate of change on stability, the 1948-62 period was split into two 7-year intervals and countries were given two stability scores. National stability scores were also taken on a yearly basis.

Major Findings and their Relationship to Hypotheses

1. The higher the level of systemic frustration, the greater the political instability.

2. Relationships between each indicator and stability are presented. All indicators do not predict degree of stability with equal efficiency. Level of literacy is best--.90 degree of relationship. GNP, caloric intake, physicians, urbanization are weaker predictors to stability.

3. A composite picture is presented of a politically stable country--90% or more literate; 65 or more radios and 120 or more newspapers per 1,000 population; 2% or more of population having telephones; 2,525 or more calories per day per person; not more than 1,900 persons per physician; GNP of 300 dollars per person per year; 45% of population urbanized.

4. Lack of support was found for the hypothesized curvilinear relationship between modernity and stability (see Hypothesis 5). The "modern" countries (determined by their composite score on eight development variables) were low in instability; the "transitional" countries were high; but the "traditional" countries instead of being low as expected, were almost as high in instability as the "traditional" countries. Perhaps the reason for this was that all of the countries in the sample had been exposed to modernity. It is also interesting to note that the produce-moment correlation between modernity and stability was greater than that between frustration and stability.

5. Instability is more prevalent than stability and has generally been on the increase in recent years, reaching a peak in the late 1950's and an even higher one in the early 1960's. Per country, the range of events was from 136 for France (most active, especially in changes of government) to Laos and Burma with only 28 and 26, for the period 1948-62.

6. Nine factors emerged from the rotated factor matrix with the first three accounting for substantial portions of the variance. The first factor was labelled "turmoil" and was characterized by violence and mass participation in open protest, perhaps denoting serious disturbance and governmental retaliation. The second factor was described as "palace revolution" or revolt, and was marked by a lack of mass involvement. The third factor represented "power-struggle" or purge (without actual coups d'etat as we found in the second factor).

7. The results of the second phase of the study, concerned with effects of modernization rates on stability, show that the higher the rate of change, the greater the increase in instability. Perhaps the most interesting finding was an inverse relationship between rate of change in national income and instability: in the case of this indicator, the higher the rate of change, the greater the stability. This may be due to the fact that national income is the one variable whose rate of growth is greater in developed countries than in transitional or developing countries. Change in primary education seems to be the best individual predictor of instability, and change in literacy the worst (although intuitively literacy and education seem closely related--the inconsistency may be due to low quality data, or data from a different time period on literacy).

Evaluation

1. The use of the frustration and instability indices to predict to instability proved to be of significance in the Feierabend study. After careful examination of the Feierabend scaling and method and the inclusion of more countries (especially the African nations), an attempt could be made to replicate the findings of this study. The phenomena of inequality and frustration (as measured by indices) seem to offer more promise of predicting to internal conflict than the raw attributes of nations used by Rummel and Russett.

2. One problem with the Feierabends' work is that their concept of instability may be too general to be useful. There is no specific definition of violence or the level at which a violent act takes on political significance. The study seeks predictors of "instability,"

yet "instability" includes regular change of office by election, or resignation of a cabinet official (rated at the lowest level of instability), as well as peaceful demonstrations. Conceivably, for some societies, these actions, and perhaps some far more turbulent, are viewed as ordinary and not destabilizing. By not limiting themselves to the study of violent political conflict, the authors may be taking on too great and explanatory task. An argument could be made, however, that the presence of feelings of "relative deprivation" or frustration may express itself more often in non-violent than in violent acts. The Feierabend data indicates this is not the case, though, since most "instability events" occurred above the "3" level of hostility, i.e., in the violent range.

3. There may be some doubt, as well, as to whether the most unstable event in a country's recent history actually characterizes that country's instability. (See evaluation of Nesvold's study below).

4. Not much confidence can be put in the distinction which the authors make between a frustration index and a modernization index. They use the same variables to measure both. It is not clear that frustration is a ratio of several economic indicators divided by certain media-development indicators, while modernization is the sum of all of these indicators. Other studies have shown such a close intercorrelation between economic and media development that it is hard to separate them conceptually. It is useful, however, to speculate on the implications of media growth without commensurate economic growth when and if we find such a pattern in the development of a single country over time.

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Betty A. Nesvold, "Scalogram Analysis of Political Violence: A Cross-National Study," paper presented to American Political Science Association, 1967.

Purpose and Theoretical Framework

The attempt is made to formulate and test an operational definition of political instability. It is postulated that as nations embark on the path to industrialization, large numbers of persons are attracted away

from their traditional environments to form a pool of labor for the developing factory system and the urban service trades. These people initially find frustration and poverty rather than the benefits of modern society, and a core of discontented persons living in close proximity results. The newly mobilized individuals look to the government for benefits and resort to violence to obtain them.

Independent Variables

Four measures of economic and social development were chosen as possible predictors to violence:

1. Percent of labor force engaged in agriculture (to indicate economic underdevelopment).

2. Daily newspaper circulation per 1000 population (to indicate mass media development).

3. Life expectancy (to indicate health and welfare development).

4. Percent of population voting in national elections (to generally indicate "political development") It should be noted that this equates democracy with political development).

Nations were also rated along the Almond and Coleman (Politics of the Developing Areas) typology of political structure (whether one structure performs many functions in traditional fashion or whether structures are specialized). This was done for 68 nations. Here GNP per capita was the indicator of economic development, and percent literate indicated "social development."

Several more specific measures of political development and social attitudes were included to be related to levels of violence. These measures included those of Banks and Gregg, as they found dimensions of political systems within countries in a recent factor analysis. These dimensions included: (1) "polyarchic"--on which nations with the highest loadings were western and industrial"; (2) "elitist"--with African nations predominating; (3) "centrist"--a predominantly communist nation factor; (4) "personalist"--dominated by Latin America; and (5) "traditional"--primarily underdeveloped states. McClelland's "achievement motivation" index, based on childrens stories, was also included.

Dependent Variables

A summary political violence score was calculated for each country (82) from 1948-61. The conflict data is similar to that used in the Feierabend study. Each type of conflict event was weighted as to degree of instability, and the scores were summed within each country.

Hypothesis

The higher the level of economic and social development, the lower the level of political violence.

Analysis

National instability scores were derived by a panel of judges on a set of events (ranging from boycotts to executions) as to degree of instability. Each country was then given an instability score on the basis of the sum of the mean values for each category. These data were then subjected to statistical techniques designed for ordering data: factor analysis and Guttman scaling. A separate factor analysis was then run for only the events which entailed incipient or overt violence. This factor analysis succeeded in grouping data into four dimensions that clearly contained increasing amounts of violence. Thus, four categories, or levels of violence, were identified.

The test of this increasing violence pattern is the Guttman scale, which determines how regularly the occurrence of events of type four (most violent) is also accompanied by events in classes three, two, and one (which are less violent and therefore should go along with or predate overt violence), or if there are no class four events, how regularly those in class three are accompanied by those in classes two or one, and so on. The methodological premise is that data will not "scale" perfectly (or near perfectly) unless there is a single underlying dimension going from "less to more" (in this case an "intensity of violence" dimension). This gives an advantage not found in factor analysis, since it provides justification for assigning weights to events as they fall into scaled categories, whereas some of these categories might be classified on separate factors with little interrelationship, by a factor analysis. Thus, for example, Rummel found that "turmoil," "revolution," and "subversion" were separate factors and presumably unrelated phenomena. But Nesvold relates these merely as increasing intensities of violence along a single

continuum, with weights attached to the events. High agreement was found between this and the panel rankings. Several correlational analyses of various independent variables as they relate to violence were also conducted.

Major Findings and their Relationship to the Hypothesis

1. The four scale positions of violence, in ascending order of severity, consisted of:

   Position 1 -- Riots and demonstrations, boycotts against the government, politically motivated arrests, government actions against specific groups, and sabotage.

   Position 2 -- Martial law, coup d'etat, revolt.

   Position 3 -- Guerrilla warfare, politically motivated assassinations.

   Position 4 -- Politically motivated executions, civil war (except for Communist countries, where politically motivated executions were more commonplace and did not depend on a civil war).

2. The results of a multiple correlation of violence with the various independent variables shows that only a modest amount of variance in political violence can be explained by using any single predictor variable. The most powerful single explanatory variable was "life expectancy" (a supposed measure of social development) with only 27% of the variance accounted for. The indicator of political development (voting turnout) was very weak, adding little or nothing when it was included as a second explanatory variable in a number of relationships.

3. There are two significant increases in predictive power when two independent variables are used to explain violence instead of one. The combination of "% labor force in agriculture" (economic development) and "life expectancy" raise the variance accounted for in violent acts from 27% to 46%. A gain (from 22% to 32%) is also achieved by combining "% labor force in agriculture" with daily newspaper circulation. Neither of these, however, provides extremely high prediction--certainly not to the level Gurr achieved.

4. Using the alternate (Almond and Coleman) measures of political development, and the GNP and literacy ratings of economic and social development as predictors to violence, Nesvold found a striking pattern of what might be called a "typical syndrome of national instability." Steady increase in economic and social development was related curvilinearly to political violence experienced. The greatest amount of violence occurred at the middle levels of development. Nations with the highest and lowest GNP per capita and highest and lowest literacy rates experienced less violence.

5. Nesvold also has included a series of correlational relationships between several more specific measures of political development or social motivation and violence. These measures include those of Banks and Gregg and McClelland (see para. 3 under "Independent Variables" above). The results show that "polyarchy" is consistently negatively related to political violence. If violence does occur in Western industrial states, it seems most likely to be of the "position 1" type (see above under "Dependent Variables"). The "elitist" country factor has a moderately positive relationship with "position 3" events on the violence scale--guerrilla warfare and political assassinations. The "personalist" country factor has the strongest relationship to violence, especially the "position 2" variety--here Latin American's history of coups, martial law, and revolt seems reflected. The "traditional" countries show almost no relationship to violence, again pointing to the low level of violence in the poorest countries.

6. Surprisingly, McClelland's achievement index correlated positively with political violence and negatively with standard of living, i.e., the more motivation, the more violence, and the less economic progress. These relationships are not very strong, but nevertheless puzzling. They may cast doubt either on the adequacy of Nesvold's measurements of development or on McClelland's measurements of motivation or both. These findings are somewhat at variance with those of the Feierabends' and Sleet in the study reviewed below, in which there seemed to be little relationship between McClelland's achievement motivation measures and political upheaval, and with Russett's study which showed no positive relationship between motivation and national income in Europe and Latin America (see below).

7. When correlating the separate development variables (% in agriculture, newspapers, life expectancy, and % voting) with violence, few very strong relationships are found, and the strongest (15-35% of the variance) are predictive of "position 2" events. The % of population voting, though, seems inversely related in a moderately strong correlation to "position 4" violence--i.e., high level violence, perhaps coming in politically non-participatory countries (though further study of this possibility is needed.)

Evaluation

1. Like Russett's conclusion about a curvilinear economic development-violence relationship, Nesvold's finding must remain tentative since the GNP and literacy scores were not for a single nation or a number of nations over time (they were taken at only one point in time). Time series analyses are necessary to trace the violence pattern in developing nations.

2. Nesvold provides some useful comparisions with the other studies cited in this report. Though the time periods were different (1961-63 as compared to 1948-61) there is moderate agreement between Gurr's civil violence scale and Nesvold's instability scale. However, Nesvold scores France, Bolivia, Korea, Lebanon, Morocco and Ceylon as much more violent than Gurr; Gurr scores Laos, the Dominican Republic, Ethiopia, Belgium, and the Philippines as much more violent than Nesvold, probably because of the different time-periods studied. This raises the conceptual question of whether a country's violence profile is stable over time, whether we should note its long term violence or its most recent violence. Much more attention should be paid to the time span which best "describes" the proneness to violence of a state; there may be a good

argument that nations' scores should be measured over many years.* This requires data for more years, though, than we have accumulated so far on domestic violence (though Singer, Denton and Phillips, Cattell and Rummel have done extended studies on foreign conflict data).

3. The use of Banks-Gregg and McClelland measures of political development and achievement provide uncertain results, since these studies suffer from conceptual imprecision. Banks and Gregg provide ambiguous labels for their factors (e.g., "centrist" for Communists states) and McClelland does not prove the adequacy of childrens' stories as reflections of societal motivation (see evaluation of Feierabend-Sleet study below). Also, data coming from Banks and Gregg and Nesvold's own study vary in time periods covered; no adequate justification nor any interpretative guide is offered for the use of data from different years.

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* To illustrate the problem of comparing violence measured by the studies cited, Bendix correlated the ranks which four investigators assigned to countries on violence. These rank-order correlations show how closely Gurr, Feierabend, Nesvold and Bendix agree or disagree in their ranking of countries. The probable sources of disagreement are: (1) different years covered; (2) different countries studied; (3) different definitions of domestic instability. We find, firstly, that only 38 countries are included in all four studies, too few for statistical significance, except in the correlation between Nesvold's and Feierabends' studies. The Feierabend and Nesvold rankings are very similar. If we leave out the smaller Nesvold and Feierabend studies, we find that Gurr and Bendix share coverage of 65 countries, and that they show moderate agreement in ranking (Kendall's tau correlation of .38 with a probability of the relationship occurring by chance of less than .01). Bendix conflict data covered the years 1945-65, compared to Gurr's 1961-65. This indicates that the difference between long and short term violence reports may not be insurmountable, if the number of countries and definitions of violence are sufficiently the same.

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Nesvold and the Feierabends' treat social achievemen as a predictor to both violence and economic development. This idea is investigated further in the following study.

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Rosalind L. Feierabend, Ivo K. Feierabend, and David A. Sleet, "Need Achievement, Coerciveness of Government, and Political Unrest: A Cross-National Analysis," paper presented to American Psychological Association, 1967.

Purpose and Theoretical Framework

Fitting into the small but growing trend of research which attempts to explain national behavior in terms of group psychological motivations, this study thinks the findings of two types of cross-national research. McClelland's findings about need for achievement and its effect on national behavior are joined with the Feierabend conflict data. According to McClelland, economic development requires not only sifficient capital for economic growth, but a stratum of individuals within the society with drive, imagination and purpose ("need for achievement"). McClelland measured the society's achievement motivation as it was reflected in childrens elementary school readers. McClelland found that "need for achievement" measured in this way for 1925 was positively and moderately related to (accounting for 20-25% of the variance in) economic growth measured in per capita national income and kilowatt hour production per capita for a number of countries from 1952-58 (the effect on economics supposedly coming with the maturity of the 1925 generation). "Need achievement," then, serves as an economic growth predictor.

Independent Variables

1. McClelland's need-achievement measurements.

2. Feierabend's measures of "coerciveness of regime." (i.e., subjective ratings of its degree of "dictatorship.")

Dependent Variable

Feierabend's political instability measurements for 84 nations (see their study reviewed above) from 1935-61, and, as a supplement, scores calculated from 1948-54.

Hypotheses

1. The higher (the lower) the level of need achievement characterizing a society, the higher (the lower) the level of political instability within that society (due to resultant high growth rate triggering dislocation and political unrest).

2. The higher (the lower) the level of need achievement characterizing a society, the higher (the lower) the level of coerciveness of the society's political regime (since need achievement leads to economic growth which, if uneven, may lead to popular frustration and, therefore, to government coercion to put down unrest).

3. Countries with high motivation in 1950 and not previously included in the 1925 measurements are likely to be at the beginning stages of economic development, and therefore to have low development scores and high civil unrest by 1960.

4. Countries whose need for achievement increases between 1925 and 1950 (thus showing a lack of satisfaction) are more likely to undergo political violence than those whose need for achievement is stable or declining.

Analysis

Correlations were run between the independent and dependent variables for 62 countries (23 from McClelland's 1925 measurements of need achievement and 39 more from his 1950 measurements) to ascertain the closeness of their relationship. Thus, there were some cases of need achievement from 1925 childrens' stories and some from 1950--separate analyses were seen relating each of these to instability and coerciveness measured from 1948-1962. Since the 1925 generation is hypothesized to be in control by the 1950's, we might expect the relationship between 1925 levels of achievement and 1948-62 behavior to be different than that between 1950 levels of achievement (of a generation that has not grown up yet) and behavior. In order to test for a difference in meaning between high motivation for fully technological states and high motivation for newly independent or poor states, the 1950 sample was also subdivided into two groups on the basis of their 1957 GNP/capita.

Finally, hypothesis No. 4 was tested by calculating the difference between each country's 1950 score and the 1950 score it would be expected to have if it had maintained its 1925 need achievement level relative to other countries. This difference was used as a measure of change in need achievement and was then related to the 1948-54 instability measure. This was done only for the 23 countries having 1925 scores; i.e., older countries.

Major Findings and their Relationship to Hypotheses

1. None of the relationships between 1925 and 1948-62 coerciveness or political instability were strong, but the direction of the relationship was, without exception, contrary to the hypotheses above. The indication was that countries high on a level of need achievement tend to be low in degree of regime coerciveness, low in level of sys emic frustration, and low in level of political unrest. Evidently, the authors conclude, high level of need for achievement in 1925 led to nearly complete technological development by the mid-1950's, meaning relatively little frustration and unrest.

2. The 1950 motivation scores were positively and weakly related to the beginnings of economic development and to resultant civil unrest within 10 years. A tentative conclusion, in light of these weak relationships, is that achievement level is not a good predictor of other societal variables, such as economic growth or political unrest.

3. Need for achievement (motivation) has, on the whole, risen with the influx of new nations between 1925 and 1950. States like Turkey, Lebanon, or India have evidently adopted Western motivational symbols, at least in their educational literature.

4. Testing separately the relationship between independent and dependent variables for highly developed and then for poor states in 1950 (highly developed defined as between $475 and $2577 GNP/capita, and poor between $70 and $395), it was found that the poorer states tended to have social unrest between 1955-62, and that the richer states had for the most part gotten their violence out of the way by 1954 (1948-54). Again, none of the relationships were statistically significant because the numbers of countries involved was so small, and we can only take the

general direction of the relationships as some indication of possible trends in social and political development.

5. A significantly strong relationship was found between increase in need for achievement and high instability from 1948-54, and between relatively stable or decreasing need for achievement and low instability. But significant exceptions were Uruguay, Hungary, Norway and Chile which all had decreasing motivation and yet high instability. A tendency was also shown (among only the 23 countries involved in this final analysis) for those states increasing in popular motivation also to show coercive political systems.

Evaluation

1. Serious conceptual difficulties are involved in this study:

   a. The concept of "need for achievement" is not utilized with any consistent meaning throughout the study. Initially it is suggested that high need for achievement reflects, as McClelland indicates, motivation, drive, and perhaps implicitly, hope. Indeed a relationship (contrary to the authors' hypotheses about disruption as a consequence of economic progress) is found between high need achievement and tranquality in the society. Later in the study, however, the authors insert their own interpretation of "need for achievement" as something akin to frustration, especially if this need continues for a number of years. When a country increases in "need for achievement" from 1925 to 1950, the authors claim that this represents frustration. Conceivably it could just as well represent success seeking more success. It is hard to reconcile the simultaneous use of a concept as both hope and frustrated hope.

   b. The whole exercise of relating achievement score levels to economic development or political unrest 25 years later is dubious. There is no guarantee that those who read the 1925 childrens' stories were actually in positions of power either in or outside of the government, or that they internalized the stories. Indeed elementary school texts may be a better measure of the aspirations of the text-book writers in 1925

or 1970, or of the government's Ministry of Education, than of values or motivations upon which governments or citizens act. "Need for achievement" is not well-measured in this study nor in McClelland's.

c. It is also extremely difficult to relate motivational or social trends of the 1920's, 1940's or 1950's to political instability in the late 1950's and early 1960's, because the context of world values changed with the birth of a stream of new states after 1957. Attitudes about unrest, protest,and violence may have changed greatly after 1957, and even the 1950 or 1925 list of countries may have begun to react or behave differently. No adequate safeguards for such attitudinal change was made in this study and we have no indication of "need for achievement" levels in the post-1957 states.

2. A concept that might usefully have been added to the theory underlying this study is that of "institutional development." Conceivably the relationship between "need for achievement" and violence may depend not so much on the coercive power of the government as on its ability to satisfy newly generated demands. For this reason, some measure of "strength of bureaucracy" or "governmental efficiency" should have been included. This should have been followed by a causal analysis,testing the effect of both institutionalization and coercion as intervening variables as Gurr did in his study.

3. Once again attention must be drawn to the very general nature of the Feierabend's definition of "political instability"--ranging from changes in office to civil wars.

4. The relationships found in this study were extremely interesting and provocative, yet few were statistically significant. Therefore, much more work is needed in more specific and detailed examinations. This is especially true of the finding that richer states tended to have their upheavals from 1948-54, while poorer states underwent instability from 1955-62.

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The next pair of studies (Mitchell and Almond-Verba) deal with violence in individual countries. The importance of local conditions and the distribution of resources in Vietnam is reviewed by Mitchell, Almond and Verba present findings on attitudes within Mexico and their implications for violence.

Edward Mitchell, "Inequality and Insurgency: A Statistical Study of South Vietnam," World Politics, 20 April 1968

Purpose and Theoretical Framework

This study tests the proposition: "The more prosperous the peasant, the more discontented." It questions the view that economic privation and inequality are the principal causes of internal conflict and political instability; thus it also questions the conclusions of Russett and Feierabend that civil violence is related to inequality of land tenure and lack of modernity.* Thus, the study asks:

1. What types of South Vietnamese provinces, in terms of present land distribution, are most securely under government control?

2. How do we account for variation in control from province to province?

Independent Variables:

1. Four measures of inequality of land distribution:

   a. Index of inequality of landholdings by size;

   b. The percentage of land in the province that is owner-operated;

   c. Per cent of land subject to redistribution formerly Vietnamese controlled (indicating a breakup of large estates).

   d. Per cent of land subject to redistribution formerly French-owned (reflecting in 1960 a single owner -- the government -- since much former French-owned land was taken over by the government but little was redistributed to peasants).

* The author seems to forget that Russett also showed evidence of a weak curvilinear relationship between economic development and violence.

2. To assess the average degree of accessibility within a province, measures of road density, ruggedness of terrain, and degree of cross-country mobility were used. The latter proved to be the only one predicting well to governmental control, and was measured by the per cent of land area composed of plains and hills without dense forest, swamps, marshes, paddies, or mountains.

3. Population density per square kilometer of the province.

Dependent Variable

Extent of government control of provinces in South Vietnam measured by the per cent of hamlets under government control in each province. The data sources were detailed maps published in the Los Angeles Times (after 1963) and originating from "unspecified" government sources.

Hypotheses

Inequality of land distribution in Vietnam is positively associated with government control; i.e., the more inequality, the greater the control.

Analysis

Government control was related to the independent variables in a linear regression model. The weight of each variable was determined and reflects the effect of that variable on government control.

Major Findings

1. All of the independent variables together account for about 46% of the variation in government control, with the land tenure variables alone accounting for about 37% of the variation. Only one variable by itself (land size inequality) has a statistically significant relationship to control. It is only when the independent variables are taken jointly that they predict even moderately well to government control.

2. Greater inequality means greater government control. Most ex-Vietnamese land subject to redistribution seems to be in less controlled areas, while the reverse is true for ex-French

land subject to redistribution. Perhaps, then, redistribution has had a negative impact on control.

3. After a separate analysis excluding most provinces with substantial religious minorities, much the same results were obtained. Thus, though religion may be a factor affecting control, it seems unlikely that its exclusion from the analysis distorts the effects of the other variables.

4. Good mobility was found to be inversely related to government control. One possible explanation is that poor mobility reduces external social contacts, preserves traditional societal institutions, and thus contributes positively to control. But the measure of mobility used here does not take account of transportation via canals and waterways which do reach otherwise isolated regions. Another interpretation might be that guerrillas make better use of terrain. It is also possible, however, that the relationship is merely one of chance.

5. Generally, the explanation of high government control correlated with high land inequality may be in the low aspirations and docility of poor peasants whose social and political life is highly controlled by the landlord.

Evaluation

1. There is a very real possibility that government control is not the dependent variable in these relationships because government control of a province may have significant effect on the land redistribution of the province. The author seeks to show that this is not the case, but he does not go far enough. He tests for control's effect on distribution only up to 1960, since this is when the census data for the land distribution variables of the study were taken. Viet Cong or government influence on land tenure after 1960 do not concern the author since the statistics he uses are from 1960. But he forgets that the Los Angeles Times ratings of government control came since 1963. Thus, implicitly, he is interested in control after 1960, yet he does not test for possible effects of control on tenure after that date.

The author explains that the Viet Cong probably had little effect on the distribution of land either in government-controlled areas (where the landowner rather than the peasant proprietor would still be the registered owner) or in Viet Cong-controlled areas (where he observes that if any land redistribution--basing his conclusion rather dubiously on 1957 data prepared for the Diem government land reform). In assessing the effect of Communist control on tenure, however, he has neglected the effect of the government's control. Firstly, the author admits that the government records land as belonging to absentee landlords even when claimed by peasants. Secondly, no effort is made to evaluate the influence of large landowners who might pressure the government into sending troops to their own provinces while neglecting others. Therefore, the presence of government troops may very well maintain the land inequality, rather than land inequality leading to greater government control. Landlords may exert greater control on the government (which in turn controls the peasant) than they can on the peasant. A measure of violence in these provinces would have been interesting to indicate the degree of coercion the government must employ to maintain control.

2. The data sources are open to obvious question:

   a. The Los Angeles Times reports of government-controlled area could be biased and this would affect the strength of the derived relationships, especially if the overstatement is greater for some provinces than for others, a likely circumstance, given landlord political pressure.

   b. Census data in South Vietnam is subject to great inaccuracies. Not all hamlets in the provinces were visited--rather a sample of about 10% of the hamlets was taken and there was no specification of the sampling technique used.

3. The finding that as the percentage of owner-operated land increases, government control decreases is difficult to interpret in light of the author's earlier contention that the Viet Cong did very little to change land tenure in areas under their control.

4. It is not surprising to find government control highest in the areas owned by influential landlords in Vietnam--greater government effort would be likely in such areas. This study is the weakest methodologically of any reviewed here, and therefore the findings are listed merely to indicate areas of interest, pitfalls, and the need for further research.

Sidney Verba and Gabriel Almond, "National Revolutions and Political Commitment," in Internal War, ed. by Harry Eckstein, New York, The Free Press, 1964.

Purposes and Theoretical Framework

This study examines the effect of attitudes on civil violence and of civil violence upon attitudes. It examines the attitudes of citizens of Mexico, where national consciousness was molded by a violent revolution. Mexico has had 40 years to build a political culture out of a violent revolution and may be a useful gauge of future political loyalties in today's new and unstable states.

In analyzing attitudes toward the government, Almond and Verba use a three-fold classification: "parochial,"(denoting absence of orientation to the national political system), "subject" (passive orientation to the system), and "participant" (active orientation). To judge the implications of these orientations for future stability and tranquility in the country, another classification is employed. It centers on the consistency or inconsistency between prevailing attitudes and the prevailing political institutions of the state--"When a participant, subject, or parochial finds his political system appropriate or satisfactory his views are termed 'allegiant'; when he rejects the political system he is 'alienated;' and if he displays great emotion for, but little knowledge about, the government he is an 'aspirant'." The aspirant may be found in a transitional society emerging from tribalism and subject to nationalistic fervor.

Variables and Analysis

The data-base consisted of approximately 1000 interviews in both Mexico and Italy (which is used as a comparision country), plus about 125 in-depth follow-up interviews in the early 1960's. These interviews covered such variables as: (1) national government's effect on citizens;

(2) exposure to media; (3) pride in nation and political institutions; (4) educational levels; (5) political competence (perceived ability to deal with the government).

Major Findings

1. In Mexico respondents are much more likely than in Italy to report that the government has no impact on their lives. There is a much greater frequency of "alienative" or "parochial" responses in Mexico. Even among the relatively small group of Mexican respondents who show awareness of governmental impact, a substantial portion feels that it would be better-off without the activities of the government. Even Mexicans with higher education showed relatively low awareness of governmental significance. Mexican respondents are very likely to expect inequitable treatment in a government office or from the police, and are likely to expect their view to be ignored in administrative situations.

2. When questions are asked about interest in politics or evaluations of the system as a whole--rather than about specific performance--Mexican respondents are more positively oriented than the Italians. Thus, Mexican belief in the inadequacy of governmental performance is not accompanied by indifference to politics.

3. One explanation of the seeming paradox of the previous findings is that Mexico may still be subject to the "politics of aspiration" of the revolutionary past. The aura of the revolution and pride in self-government seem to be there, even if knowledge of or confidence in the prevailing government is not. Indeed, 30% of Mexicans compared to 3% of Italians expressed pride in the political institutions of the country.

4. In Mexico, there is little difference among groups who are high, medium, or low "subject competence" on their attitude toward the government's actions. However, respondents who consider themselves more able to participate in their political system are more likely to express pride in the institutions than those low in "subject competence." Thus participation in Mexican politics seems to be a symbolic act.

5. The Mexican pattern may be typical of post-revolutionary societies in which awareness of national politics comes suddenly through involvement in a highly emotional struggle and in which symbols of nationalism and social change play an important role. As long as this pride remains and even if small improvements in economic and social conditions raise the legitimacy of the government in the public eyes, there remains the promise of the revolution. The corollary to this, however, may be that failure to produce improvement or improvement that is not steady may cause popular emotional upheaval with the government as target. There may not be passive mass disappointment, but rather active popular uprising.

Evaluation

1. This study fills an important gap in aggregate data analysis; it gives the first direct indication of popular reaction to the development process. It focuses on peoples attitudes toward government, perhaps the key background variables that cause mass rebellion to break out.

2. We must note that Almond and Verba Mexican sample was deficient in that it questioned only people living in fairly large towns. The mass of rural dwellers, including Indians, was not effectively sampled.

B. Political Systems and Violence (Inter-and Intrastate)

The following two studies show dimensions underlying political behavior, in general, and which may lead to violence within states.

Phillip Gregg and Arthur Banks, "Dimensions of Political Systems: Factor Analysis of a Cross-Polity Survey," American Political Science Review, 54, September 1965.

Purpose and Theoretical Framework

The authors are seeking the basic dimensions of complex behavior within political systems, and the set of concepts having the greatest empirical relevance for describing the dimensions. The authors

factor-analyzed political data from A Cross-Polity Survey in order to answer the above questions and to seek specific propositions about conflict behavior.

Variables

The input data comprised 68 variables, all but five of which were derived from the polychotomous characteristics of the Survey. The Survey characteristics were political variables and were either ordinally scaled or nominally scaled. The Survey provided no specification of the years covered by the variables, but most sources have publication dates between 1959-1961. The number of countries covered by individual variables varied greatly. Five measures of conflict were added in order to examine the relationship of conflict to the other political phenomena: System Stability, Demonstrations, Domestics Killed, Expulsion of Ambassadors, and Foreign Killed. All but the first were taken from Rummel's work.

Analysis

The first seven factors* were rotated to an orthogonal and an oblique

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* The authors found partial correspondence between their factors and those of independent studies, by Rummel, Russett and Berry. Rummel's and Russett's factor analyses of social, economic and political variables yielded the following five factors: "Economic Development," "Communism," "Intensive Agriculture," or "Density," "Size," and "Catholic Culture" or "Religion." These factors correspond to five of eleven which the authors calculated in an earlier factor analysis of the social and economic in addition to the political variables of the Survey. The remaining six factors closely resemble the political factors reported on in the text. Berry (1966) also attempted to condense country scores on many economic variables into certain basic dimensions. He had to exclude many underdeveloped countries, however, for lack of data; thus, the four factors - (1) "technological (economic) development;" (2) "demographic" (revealing similarities in nations' population characteristics and well-being; (3) a contrast between high domestic income and low international communications involvement (i.e., rich states tend not to trade much); (4) and size of countries - do not necessarily apply to today's new states. The trouble with Berry's study, however, was that he chose variables so closely interrelated that nearly all loaded highly on the "technology" factor.

solution. The seven factors account for 72 per cent of the total variance among the 68 variables; i.e., an average of 72 per cent of the variance of each variable. Of the 68 variables, only seven failed to be loaded higher than $\pm$ .50 by at least one factor, while only three were loaded higher than $\pm$ .50 by more than one factor. (It should be noted that such high correlations are not rare when nominal data is used.) These findings indicate that the political phenomena measured by the data do not occur randomly from one polity to the next; they occur in highly associated patterns or dimensions. Furthermore, the authors assert that these dimensions are largely independent of each other. In order words, basic dimensions (or patterns) do underlie the complex behavior within political systems.

Major Findings

1. The following factors emerged:

   Factor I — Degree of access to political channels (ranging from hierarchical to competitive political institutions).

   Factor II — Differentiation of political institutions within former colonial dependencies (not wholly "political development").

   Factor III — Degree of consensus and cooperation among political participants.

   Factor IV — Pattern of institutional differentiation occurring in a political system exhibiting high sectionalism.

   Factor V — Means by which political authority is legitimized.

   Factor VI — Patterns of interest circulation between society and government and within government.

   Factor VII — Strong executive leadership in both domestic and foreign affairs.

Gregg and Banks therefore feel the factors provide evidence for inferring seven basic political dimensions: Access, Differentiation, Consensus, Sectionalism, Legitimation, Interest, and Leadership.

2. Despite the authors' claim that they derived some specific propositions about conflict in political systems, their evidence concerning the findings appears to be very slim. Four of the five conflict variables have less than 50% of their variance explained by the seven factors. Nevertheless, the authors feel that their propositions (see below) in large measure substantiate those advanced by Rummel and Tanter in their conflict research.

3. The two political phenomena are identified (lack of consensus and strong executive leadership) which are most frequently associated with domestic and foreign conflict, respectively.

The propositions are as follows:

1. The political dimension, leadership, which accounts for foreign conflict, does not account for domestic conflict.

2. The presence of strong executive leadership is frequently accompanied by both diplomatic and violent foreign conflict.

3. Access to political channels, differentiation of political institutions, sectionalism, within developing systems, kinds of legitimation, and type of interest circulation tend to be unassociated with violent and diplomatic foreign conflict.

4. The political dimension, consensus, which accounts for most of the domestic conflict, does not account for diplomatic conflict, but is moderately associated with violent foreign conflict.

5. An absence of political consensus is associated with violent domestic conflict.

6. An absence of political consensus is moderately associated with non-violent domestic conflict.

7. The degree of differentiation of political institution, kind of legitimation, and type of leadership tend to be unassociated with violent and non-violent domestic conflict.

Evaluation

1. The fact that all variables are either nominally or ordinally scaled means that their use in factor analysis, while yielding the underlying of basic structure, may not accurately measure the interrelationships. This may seriously impede the researcher's ability to properly interpret the factors emerging from the analysis. Gregg and Banks attempt to rectify the situation by collapsing the data into two and three place variables, which were then correlated. It doesn't appear that the clustering of 68 variables of such a small range would have a high reliability.

2. Because the factor model stipulates that the relationships between variables loading strongly on a factor are all caused by a single underlying dimension, it is important to identify that causal dimension accurately. Some of the factors identified by Banks and Gregg lack the precise and convincing description.

3. While the factors may be statistically independent, they may not be conceptually as unrelated. It is improbable that an "access" factor containing a variable like "status of legislature" is fully independent of another factor called "differentiation" containing variables like "political modernization" and interest group strength.

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Bruce Russett, Hayward Alker, Jr., Karl Deutsch, and Harold D. Lasswell, World Handbook of Political and Social Indicators, (New Haven: Yale University Press, 1964).

Purpose and Theoretical Framework

Broad comparison in comparative and international politics has frequently been neglected mainly because of gaps in our conceptual apparatus and the absence of reliable, valid and comparable data to make the comparison of many polities possible. This book attempts to fill this gap.

Variables

The authors use political and social characteristics of nations and the correlation between them. Data was obtained for every country for which

reliable data was available, a total of 133 countries. The dates of the data range from 1920 to 1960 but most of the data is for the mid-fifties.

Hypotheses

The basic purpose of the Handbook was to publish data rather than to test hypotheses. Therefore, only two hypotheses are listed here from the brief analysis at the end of the Handbook.

1. Economists have posited the idea of several clearly discernible stages of development which states must pass through; this is subject to testing.

2. Regarding domestic violence, Russett, et al., cite the hypotheses that above-average land distribution inequality promotes above-average social and political discord.

Analysis

1. The authors intercorrelated all 70 variables used in the Handbook.

2. On the basis of intercorrelations, certain variables seemed highly related and these could be used to create profiles like Rostow's economic stages of development.

3. Certain economic, social, and political development variables were plotted graphically against per capita GNP to find out which ones tended to increase fastest as wealth increased (see finding #12).

4. Through linear and curvilinear multiple regressions the authors look for associations of violent deaths and other variables of interest.

5. Convariance analysis and analysis of variance were employed to find the world-wide and regional relationships between variables. This method divides the total variance of the dependent variable (e.g., domestic violence) into influences coming from the whole world, from the region, or from the country itself.

6. Finally, using present growth rates for each separate region (see finding # 14) the authors project trends on the variables to the year 1975.

Major Findings and their Relationship to Hypotheses

1. Human Resources

   a. The primary relationship here is the high correlation between two indices--wage and salary earners and population in cities--both with each other and with a broad range of variables indicating several aspects of economic development. These latter include most of the communication indices, GNP per capita, labor force in industry and non-agricultural labor force, the health and well-being indicators, and most of the education indices. The vital statistics indices--birth, death, and to a lesser degree, natural increase rates--show a negative correlation with development. These variables together form a quite consistent cluster indicating the state of a nation's economic growth. To a substantial extent these development indices are interchangeable.

   b. Total population is correlated with area and GNP.

   c. Population increase rate for cities shows no correlation with economic development. It does, however, show a rather moderate correlation with most of the other change rates---GNP, labor force in agriculture, inhabitants per hospital bed.

2. Government and Politics

   a. There is a striking relationship between all of the various indices of government size--expenditures, revenue and employment--and most of the economic development indicators.

   b. There is a rather high correlation between total vote and government size, suggesting a (causal?) connection between wide popular political participation and wide government involvement in the economy.

c. There is an absence of any strong and theoretically interesting correlations with defense expenditures and military personnel.

d. There is a modest correlation between domestic violence and four measures of inequality: land distribution, rented land,and income before and after taxes.

e. Violence is negatively correlated with the foreign mail ratio suggesting that relatively isolated countries are more susceptible to unrest. There is a moderate negative linear correlation between economic development and violence.

f. There is a low correlation between violence and executive stability.

3. Communications

Most of these variables--newspapers, domestic and foreign mail per capita, radios, television sets and cinema attendance--are included in the larger economic development cluster.

4. Wealth

a. Area is positively correlated with total population but negatively with density.

b. GNP growth rates show a substantial correlation with government size, especially with government revenue.

c. Capital formation is correlated with government size.

d. There are negative relationships between foreign trade and size, population, total GNP and area.

5. Health

All four indices fit well into the economic development cluster.

6. Education

Literacy and primary education belong at the heart of the development cluster. Average annual increase in literacy shows a fairly consistent,

though not high, set of correlations with the other change rates, but it seems somewhat negatively correlated with "development."

7. Family and Social Relations

   a. There is a negative correlation between births and marriages.

   b. There is a high correlation between emigration, immigration and economic development.

8. Distribution of Wealth and Income

   Negative relationship between unequal distributions of land (and especially of income) and economic development.

9. Religion

   Percentage Roman Catholic seems not to be correlated at the world-wide level with anything. (Also see finding #14)

10.

   a. Regarding Hypothesis 1, the authors found enough strong relationships between economic and social development variables to specify five "thresholds" for stages of economic development. It was difficult to include political variables in this profile of stages, though, because the relationship between economic and explicitly political (like "central government expenditure") was weak. Nevertheless, voting per cent, per cent in military and per cent of central government expenditure were included.

   b. One finding contradicts the notion of poor populous states fielding hordes of men in large armies. Very large armies are usually to be found only in economically advanced states.

11. In a regression analysis of violent deaths on GNP/capita, a general pattern (though one statistically weak: $r = -.43$) does emerge which indicates a low level of violence is associated with high economic development. The curvilinear relationship between deaths and GNP/capita is indicated by a finding that violent deaths seem to be less frequent at extremely low GNP levels than at

somewhat higher stages. It also seems that the very poorest countries do not have as much violence as those slightly better off.

12. An economic development cluster similar to Rummel's economic development dimension was found. If one wanted to measure the level of economic development of several countries, only one indicator from either Rummel or the Handbook would be sufficient. Socio-economic variables, such as, number of physicians, higher education, radios, and urbanization increase much faster with increasing per capita GNP than do political variables such as voting, military personnel, and central government size.

13. Testing Hypothesis 2 through multiple regression analysis, it appears that there are numerous correlates of group violence and that their influence is complex. GNP/capita has the least effect of the independent variables used. The rate of change in GNP, however, is a powerful factor (both GNP variables show a negative relationship to violence, i.e., the higher the GNP the faster the increase in GNP, the less violence). Voting turnout is rather strongly associated with violence. "Life expectancy," as a complex indicator of welfare, has a strong negative relationship. Finally, inequality of land distribution seems to have positive and significant effects on levels of domestic violence.

14. Using convariance analyses and separate regression analyses for each world region to break down the relationship between "achievement motivation" (as measured through children's stories by McClelland) and national income into world regions, Russett et al., find significant relationships for Latin America and Europe. Thus, high achievement motivation may indicate high potential future growth of GNP in these areas. A relationship between Catholicism and agricultural pursuits was also found for Latin America. Interestingly, land distribution inequality contributed sizably toward explaining domestic violence in the covariance analysis, and additional variance (up to a total of 41%) was explained by "per cent of labor force in agriculture" as an intervening variable and by the interaction of both these agricultural indicators.

15. Distribution of inequality of a number of socio-economic variables (such as literacy, urban population, GNP, radios, hospital beds, etc.) projected at the same rates of change to 1975, show literacy becoming more equally distributed around the world along with urbanization. But economic amenities do not keep pace. Thus, expectations will be mobilized by increased media, but fulfillment will not keep pace--leading to a possible "revolution of rising expectations."

Evaluation

1. The findings about development stages and patterns of growth of various indicators are seriously weakened by the fact that the data are not longitudinal. Many states are studied at one time period (and not a uniform time period across states) and inferences about development are made. It would be far more accurate to follow individual states through their historical stages.

2. The utility in political research of curvilinear (as opposed to linear) relationships is pointed up. Some correlations may not be present at low or high levels.

3. Using present growth rates to predict possible outcomes in 1975 or later is hazardous. There is no proof that "development" is an open-ended phenomenon and that states can go on "developing" indefinitely.

4. The evidence that group violence reaches a maximum at the "middle" of economic development has great significance to those concerned with avoiding violence or using military force to deal with it.

C. Interstate War

R. J. Rummel, "Dimensions of Conflict Behavior Within and Between Nations," General Systems Yearbook, 8, 1963a.

-, "Testing Some Possible Predicators of Conflict Behavior Within and Between Nations," Peace Research Society, Papers, 1963b.

-, "The Relationship Between National Attributes and Foreign Conflict Behavior," in Quantitative International Politics: Insights and Evidence, edited by J. David Singer (New York The Free Press, 1968b).

Purposes and Theoretical Framework

The purpose of the 1963 study was to delineate foreign and domestic conflict dimensions, to determine the approximate position of each nation along these dimensions, to explore the relations between foreign and domestic conflict. Rummel then went on to determine whether the magnitude of a nation's position on attribute dimensions (such as "economic development") is related to its position on behavioral dimensions (such as domestic and foreign "conflict"). Essentially, this means relating the attributes of nations to their conflict behavior. This may be extended later, if more precise findings are obtained, to a mathematical relationship between national attributes and interstate behavior. The existence of a distinct conflict behavior dimension, and several distinct attribute dimensions (such as "size" or "economic development") was indicated in previous factor analyses by Rummel and others (Rummel, 1964; and Rummel, Sawyer, Guetzkow and Tanter, 1967) for nations in 1955.

Independent Variables

Of the total of 230 variables collected for the Dimensionality of Nations project, 217 were non-conflict variables including such concepts as domestic violence, economic conditions, trade, diplomatic status, international political stances, population trends, etc. Together these may be considered "national attributes." These variables cover the year 1955 for 82 nations.

The 1963b study tested predictors of conflict behavior utilizing attributes derived by other investigators. Brian Berry's 1960 and 1961 factor analysis results, showing four main factors on which countries' characteristics could be scored, wereused for 4 of the independent variables regressed upon conflict behavior. These were: "technology" (economic development), the demographic pattern in the country, a contrast of income and external relations, and a size of country. The

13 foreign conflict measures (see below) were combined into three main factors ("war" diplomatic sanctions" and "belligerency") and used in the regressions, as well.

Dependent Variables

There were 13 foreign conflict variables: (1) anti-foreign demonstrations; (2) negative sactions; (3) protests; (4) severance of diplomatic relations with other countries; (5) ambassadors expelled or recalled; (6) diplomatic officials of less than ambassadorial rank expelled or recalled; (7) threats; (8) military action; (9) wars; (10) troop movements; (11) mobilizations; (12) accusations; and (13) nationals killed in foreign violence. These variables cover the 1955-57 period of 77 nations.

There were 9 domestic conflict variables: (1) number of assassinations; (2) number of general strikes; (3) presence or absence of guerrilla warfare (defined as any armed activity, sabotage, or bombings carried on by independent bands, citizens, or irregular forces and aimed at the overthrow of the present regime); (4) number of major government crisis; (5) number of purges; (6) number of riots; (7) number of revolutions (coups or separatist movements); (8) number of anti-government demonstrations; (9) number of people killed in all forms of domestic violence (excluding murder and execution).

In the 1963b study, Rummel reduced the 9 domestic conflict variables to 3 factors--"turmoil," "revolutionary," and "subversive"--and used these as independent variables in his regression analysis to explain foreign conflict behavior. States were given "factor scores" on these dimensions so that calculations of how scores vary could be made. The 9 domestic conflict variables were taken individually, however, in 9 regression questions predicting each type of domestic violence.

Hypotheses

To assess the attribute-behavior relationship, Rummel restated several familiar hypotheses relating a nation's foreign conflict to:

Hypothesis 1: The level of economic or technological development of a nation.

Hypothesis 2: The level of international communications or transactions of a nation.

Hypothesis 3: The amount of cooperation of a nation with others.

Hypothesis 4: The "totalitariansim" of a nation's government.

Hypothesis 5: The "power" of a nation.

Hypothesis 6: The instability of a nation.

Hypothesis 7: The military capabilities of a nation.

Hypothesis 8: The psychological motivations of a nation's people.

Hypothesis 9: The values of a nation.

Hypothesis 10: The number of borders of a nation.

Hypothesis 11: The interaction of combinations of the above characteristics, such as economic development, instability, and totalitariansim.

Analysis

1. The 13 foreign conflict variables were intercorrelated and factor-analyzed separately and with 9 domestic conflict variables.

2. The foreign conflict variables were then regressed upon dimensions of national attributes. The 1963 studies also employed multiple regression of foreign conflict upon dimensions of domestic conflict (turmoil, revolution and subversion) and national attribute measures as independent variables.

3. The 94 variables directly concerning international policies and actions, including the 13 foreign conflict variables, were then factor-analyzed.

4. All 230 variables (plus 6 error measures) were factor-analyzed.

Major Findings and their Relationship to Hypotheses

1. The factor analysis of the foreign and domestic conflict variables together brought out two "very distinct primary behavioral dimensions"--one of domestic conflict and the other of foreign conflict. The independence of these seemed to be substantiated in part by a regression of the foreign conflict dimensions onto separately obtained domestic conflict dimensions for 1955-57 data, but it was brought into doubt by a later study in which the presence or absence of subversion in a nation (i.e., "guerrilla warfare" and assassinations) was found to have a small negative relationship to foreign conflict behavior. In general, however, other authors (Chadwick, 1963, and Tanter, 1966) have reiterated the general finding that the internal-external conflict behavior relationship is small. All relationships between socio-economic, political or domestic conflict variables and foreign conflict were small. The 1963 multiple regression relating domestic to foreign conflict also indicates that we cannot predict foreign conflict behavior well from domestic conflict behavior.

2. The factor analysis of 94 international relations variables brought out three major orthogonal (independent) dimensions: (1)"participation," (2) "conflict," (3) "aid." It also produced four intermediate dimensions: (1) "ideology," (2) "population," (3) "Latin America," (4) and "migrations." These are posited as international relations factors in the 1950's.

3. When all 230 variables were included in one factor analysis and rotated to orthogonal and oblique solutions, the following national attribute factors emerged: (1) "economic development," (2) "power bases" (size), (3) "political" ("totalitarianism"), (4) "foreign conflict behavior," (5) "density," (6) "Catholic culture," (7) "domestic conflict behavior," (8) "linguistic ethnic homogeneity," (9) and "trade to GNP ratio." Since the 13 conflict variables were included in this factor analysis and loaded onto a separate factor, the finding seems to indicate that foreign conflict was independent of the other dimensions of national characteristics. In general, across nations, foreign conflict behavior is not highly correlated with any other national attribute.

4. Rummel sought to further substantiate finding #3 by directly testing each of his 11 hypotheses. Despite detailed examination through factor analysis and regression analysis, the findings were almost entirely negative for the nations and time periods covered for all hypotheses. The evidence suggests that foreign and domestic conflict are not highly related; the characteristics of a nation are not highly predictive of the intensity of its involvement in foreign conflict. Of direct concern to those interested in the effect of internal instability upon foreign conflict is Rummel's finding of a negligible correlation for each of his nine internal instability variables with foreign conflict.

5. From the 1963a study covering 1955-57, Rummel obtained a factor analysis of intrastate conflict. The factors showed that the 9 conflict variables were highly interrelated in three patterns:

   (a) A "turmoil" dimension, with demonstrations, riots, and crises. This is a relatively spontaneous type of conflict behavior (39% of common variance of the conflict variables explained).

   (b) A "revolutionary" dimension characterized by far more violence and numbers killed in revolutions, purges and strikes (37.6% of common variance);

   (c) A dimension almost exclusively composed of guerrilla warfare along with assassinations--a kind of covert organized "subversive" dimension. (23.4% of common variance).

   (d) Each country was scored on each of these 3 factors. On the "turmoil" dimension the highest scorers were: France, Argentina, India, Pakistan, Guatemala, Haiti, Union of South Africa, Iraq, Italy, Jordan, Cuba, Indonesia, Poland and Chile.

   On the "revolutionary" dimension, highest scorers were: Argentina, China, India, Guatemala, Brazil, Paraguay, Hungary, Syria, Haiti, Egypt, Burma, Honduras, and Indonesia.

On the "subversive" dimension, highest scorers were: Cuba, Burma, Philippines, Argentina, Indonesia, Columbia, Costa Rica, India, and Lebanon.

6. In the 1963b study the result of the 9 regression equations predicting each type of intrastate conflict showed that revolutions, purges, demonstrations, and domestic deaths had about 29% of their variance explained by Berry's four national attribute dimensions and the three foreign conflict variables (war, diplomatic saction, and belligerency). For all 9 types of domestic conflict taken together, the seven independent variables accounted for only 14.5% of the variance. "Demographic pattern" is the independent variable with the most variance in common with the domestic conflict measures, but even this relationship is very weak. In general, the national attributes, as well as foreign war or belligerent behavior, are not good predictors of high domestic violence, though they may have some success in predicting lack of or low levels of domestic violence. High levels of conflict, such as those occurring in some Latin American countries like Argentina, Cuba, and Haiti, and other countries like India, Indonesia, and Hungary, may be better explained by economic and social conditions peculiar to the country.

7. The domestic conflict variable, "subversion," has the best record in accounting for variation in foreign conflict behavior and it seems to have a negative relationship; i.e., foreign conflict seems to depend, in part, on the lack of internal subversion. High levels of foreign conflict seem poorly predicted by the independent variables including domestic conflict.

Evaluation

Certain methodological and substantive weaknesses of the study should be kept in mind, as well as its strengths:

1. There is no agreement as yet among practitioners of factor analysis as to the effect on the validity of factors when the data contains different levels of measurement precision; however, there is great agreement among methodologists, e.g., Harman, Thurstone, Cattell, Burtt, Tucker, and Horst.

2. As Rummel points out, his hypotheses concern relating a nation's position on an attribute dimension to its magnitude along a conflict dimension. Since little relationship was found here, Rummel proposes that distances between pairs of countries on these dimensions may produce the hypothesized relationships. Perhaps social, economic, political, and geographic distances between states may influence their conflict behavior. Rummel's finding of negligible relationships between domestic and foreign conflict behavior is important, though subject to further testing. It fits in with the notion that a state undergoing domestic upheaval, and perhaps unsure of the loyalty of the armed forces, is unlikely to immediately get involved in foreign war. This disconfirms the theory that external conflict is often used to unify countries undergoing internal upheaval.

3. It might also be worthwhile to test the connection between internal (domestic) conflict and national attributes. Rummel states that the seven major dimensions of national characteristics have little correlation with each other; e.g., the domestic conflict behavior of a nation is largely unrelated to its economic development or political system. Yet Russett (see the review of the World Handbook above) and others have found with a regression analysis that a weak pattern does exist between domestic violence and economic development.

4. The seven factors referred to as "international relations factors" in the 1950's (see finding #2) are not fully enough explained to make them relevant for further study.

5. The fact the data covers only the year 1955-57 limits the conclusions. Tanter (1966) and Wilkenfeld (1968) have modified and replicated the study for other years. Tanter for the years 1958-60 finds essentially the same lack of significant relationship between internal and external conflict that Rummel found, while Wilkenfeld rearranged countries into categories of political systems to find out whether this had any bearing on conflict behavior. Wilkenfeld found that there is a moderately strong but statistically significant positive relationship between domestic "turmoil" and diplomatic sanctions and between turmoil and "belligerency," (16% of variance

explained, and between "internal revolution" and "war" (30% of variance explained) for "centrist" (Socialist) states. For the "polyarchic" group (primarily developed and Western) moderately strong but statistically significant positive relationships emerged between "turmoil" and "war (16%) and between "revolution" and "belligerency"(20%). "Personalist" (Latin American) states seemed to show strong positive relationships between "turmoil" and diplomatic sactions (44%) and between "subversion" and diplomatic saction (thus indicating a cooling of diplomatic relations when subversion within the country is felt (30%). Wilkenfeld also demonstrated that internal conflict has a time-lag effect on external conflict. The limited time-span, 1955-60, does not establish the importance of long time-lags. Thus, although we find little predictive relationship between intrastate and interstate conflict for individual states, we get an idea of the type of states prone to such a relationship. This fact might have been obscured in the Rummel and Tanter studies by their failure to break the study down and examine various types of countries separately.*

In the 1963 study, though, Rummel has shown that both his domestic and foreign conflict data agrees remarkably well with trends in conflict from 1825-1945 or 1837-1937 as measured by Lewis F. Richardson and Raymond Cattell.

6. Procedurally, we might question Rummel's failure to weight countries' foreign conflict scores with the population of the countries, since some stand to have more deaths than others. He did weight domestic violence scores in this way. Rummel may have also underestimated the possibility of systematic error in reports of the number of deaths due to violence.

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* It should be noted that Wilkenfeld's use of the Banks-Gregg categories for nations is of dubious value, since these categories often contain states with very different governmental and social systems. Also, very few of Wilkenfeld's correlations are strong (though they are statistically significant), indicating that many other variables complicate the relationship of intrastate and interstate conflict.

R. J. Rummel, "Dimensions of Dyadic War, 1820-1952," Conflict Resolution, XI, 2, June 1967.

Purpose and Theoretical Framework

Rummel employes factor analysis on war data collected by Lewis F. Richardson. Three main theoretical areas were explored: first, the search for the dimensions of violence; second, the interrelationships between group violence and group attributes; third, whether nations as a type of group manifest different patterns of violence toward each other than toward other types of groups.

Variables

Data consist of pairs of countries in conflict, along with the length of the violence, number killed, and some additional information on the countries involved (such as racial or religious differences or past history). All groups involved in violent conflict such as war, revolution or guerrilla war, in which 316 ($\log_{10} = 3.5$) or more people were killed, were included. The data matrix thus included 21 variables for 779 "dyads" (pairs of belligerents) from 1820-1952. Richardson's original 84 variables were reduced to 21 to eliminate those with more than 90% of the cases with the same value.

Analysis

Factor analysis was used first to determine the patterns of conflict for all pairs across 21 variables, and then only for the nation-state pairs on 12 appropriate variables.

Major Findings

1. The most powerful factor in both the "all group dyadic" and "nation dyadic" analyses was an "intensity of violent conflict" dimension, defined in terms of the number of pairs involved in the war, the length of the war, and the number killed.

2. There has been some tendency for violent conflicts between all groups to become more intense since 1820, but time is unrelated to the intensity (number of pairs involved) of inter-national conflict. Violent conflicts between nations have, on the whole, become shorter since 1820, a conclusion that seems to contradict general historical impressions.

3. A second basic dimension emerging was a "cultural distance" dimension, pointing out the dissimilarity of religion, philosophy, or language of combatants. Thus, cultural distance appears unrelated to the intensity of violent conflict and the nature of the belligerents, whether nation vs. nation, nation vs. group, or group vs. group; cultural distance constitutes a separate characteristic of violence.

4. Another fairly weak distance dimension turned out to involve difference in physique and clothing and was termed a "racial distance dimension."

5. Separate from and weaker than the intensity or distance dimensions was one involving mainly revolution and civil war, perhaps pointing to a lack of relation between such conflict and criteria of whether many groups took part or whether the groups were socially dissimilar.

6. Regarding the three theoretical questions asked (see above), Rummel concludes:

   a. Only one really strong "pattern of violence" emerges: intensity. Thus for all groups, whether nations or otherwise, the major variation in their mutual conflict behavior is along a dimension ranging from low to high intensity violence.

   b. The weakness of the racial and cultural distance dimensions, together with their lack of relation to intensity of conflict, seems to indicate that attributes of fighting groups have little association with the intensity of their violence.

   c. Nation-states, as a distinct group, do not manifest patterns of violence much different from sub-national groups.

7. From additional studies of many types of dyadic behavior (rather than merely conflict) Rummel concludes (The Dimensionality of Nations Project, "Research Report No. 10"):

   a. The behavior of a nation towards another varies along eight major dimensions:

1. "Saliance" (low to high mutual importance between countries as measured by treaties, translation of literature, tourists, shared organizational membership, etc.)

2. Emigration and communication (low to high)

3. UN voting similarity

4. Export totals between countries

5. Students exchanged

6. International organization co-memberships

7. Official conflict behavior (thus separate from all these other types of relationships between states)

8. Diplomatic representation

8. The conflict behavior between pairs of states varies along five major dimensions:

   a. Warnings and defensive acts

   b. Military violence

   c. "Negative communications" (e.g., denunciations)

   d. "Negative sanctions" (e.g., explusion of diplomats)

   e. Anti-foreign acts

9. The further apart two nations are in their economic development and size, the more salient each is to the other (i.e., the more treaties, translations, tourists, etc.). The more similar two nations are in economic development, political system, Catholic culture, and population density, the more aligned their UN voting and the less conflictual their interaction. Dissimilarities in size and economic development are the most important determinants of the variation in behavior of nations towards each

other, explaining about 85% of the variance in that behavior. The more dissimilar two nations are in economic development and size, and the greater their joint technological capability to span geographical distance, the more overt conflict they have with each other. Thus we have evidence for the idea that it is not the absolute position of a nation on various attributes that determines its conflict behavior but rather its relative position vis-à-vis other states.

Evaluation

1. Other studies (Wright, 1965 and Singer, 1965) indicate that Richardson's collection of data on conflicts, though quite extensive, is not complete or accurate.

2. We must remember, as Rummel cautions, that the findings identify characteristics of violence already underway; they do not offer ideas about causes of conflict. Thus states already in battle do not seem to base the intensity of their conflict on racial distinctions, for instance, but racial distinctions may have had a part in causing the violence in the first place.

3. It would be very useful to supplement Rummel's findings with a regression analysis linking intensity of conflict to certain potential influences, including racial or cultural distance. The mutual effects of important variables are usually better measured through regression analysis rather than through factor analysis, since factor analysis cannot specify the exact degree of change in intensity of war (or any dependent variable) obtained by specified changes in several independent variables.

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R.J.Rummel, "Measures of International Relations," Dimensionality of Nations Project, Research Report No. 8, May, 1967.

Purpose and Theoretical Framework

Just as Banks and Gregg sought basic dimensions of intrastate politics among the various nations, Rummel seeks basic dimensions of national attributes and interstate behavior in the DON project. In this phase of the

project, he isolates single variables which are so strongly associated with the dimensions that they may be used to represent the entire dimension. Since every other variable on that dimension (and on the other dimension) is expressed in terms of the one or more characteristic "basic measures," it is possible to use the basic measures as the dependent variable in a regression model.

Variables and Analysis

Factor analyses (complete with oblique rotations to find the degree of relationship between dimensions) were performed on the 236 DON variables and subsets of them for 82 nations for 1955. Separate factor analyses were performed for national attributes (e.g., energy consumption, population numbers killed in domestic violence, etc.), and internation behavior (e.g., tourist exchanged, shared organizational membership, military violence, etc.) between pairs of states. Since the behavior dimensions were based on pairs (dyads) of states, 346 nation dyads for 1955 were used.

In setting up the regression equations the factor loading (correlation) of the dependent variable on the factor indicated by the "basic measure" was used as the "basic measure's" weight in the equation.

Major Findings

1. The major dimensions, as mentioned in reviews of Rummel's work above, included:

   a. Attribute dimensions: (1) economic development; (2) size; (3) political system; (4) density; (5) Catholic culture; (6) foreign conflict; (7) internal conflict.

   b. Behavior dimensions: (1) perception; (2) transactions; (3) ideology; (4) internal salience: (5) external salience; (6) international organizations; (7) official conflict; (8) diplomatic; (9) self-determination; (10) anti-foreign demonstrations.

2. The "basic measures" used to index these dimensions in order were:

   a. Attribute dimensions: (1) energy consumption/population; (2) population; (3) bloc membership; (4) population/area; (5) Roman Catholics/population; (6) killed in foreign violence; (7) killed in domestic violence.

b. Behavioral dimensions: (1) tourist state A→state B; (2) emigrants A→B/A's population; (3) UN voting dissimilarities; (4) exports A→B/A's GNP; (5) students A→B/A's students to whole world; (6) IGO membership shared by A and B/A's IGO membership; (7) military violence scores for A and B; (8) embassy or legation A→B/A's total embassies or legations; (9) UN voting dissimilarity on "Self-Determination" issues; (1) anti-foreign demonstrations A→B.

3. Many variables can be expressed and linearly predicted to a substantial degree by combinations of the above 17 "basic measures."

For example:

1. A's trade = .57 (A's energy consumption per capita) + .75 (A's population).

2. Treaties A→B = .61 (tourists A→B/A's total tourists) + .55 (emigrants A→B/A's total emigrants).

3. Mail A→B = .52 (tourists A→B/A's total tourists) + .78 (emigrants A→B/A's total emigrants).

4. Exports A→B = .62 (tourists A→B/A's total tourists) + .36 (exports A→B/A's GNP) + .40 students A→B/A's total students).

5. NGO membership A↔B = .54 (tourists A→B/A's tourists) + .34 emigrants A→B/A's emigrants) + .35 (IGO memberships A↔B/A's total membership).

Evaluation

1. Although "basic measures" may be inadequate rough indices of a factor, they do not entail all of the variance of that factor. Thus, there is some distortion in substituting them for that factor in a regression equation, i.e., when the loading of the dependent variable on the factor indexed by the "basic measures" in the above equations is used as the weight of that particular measure.

In other words, the factor of economic development may have a .57 correlation with A's trade, but this does not necessarily mean that energy consumption per capita itself has that strong a relationship to A's trade.

Rummel's findings about the importance of cultural (religious, ethnic, etc.) distance between pairs of combatants in predicting to war may be compared to Russett's findings in the following study of states in various world regions. As an alternative to strictly geopolitical regions, Russett's investigates possible cultural, political, and economic regions.

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Bruce Russett, "Conflict and Integration," International Regions and the International System (Chicago: Rand, McNally and Co., 1967)

Purpose and Theoretical Framework

This is part of a larger study seeking to empirically identify "regions" of the world. Regions are found in the way states cluster on socio-cultural variables, UN voting, international-organizational membership, and trade patterns, as well as geographically. These regions do not have identical boundaries. In chapter 12, . Russett specifically concerns himself with the degree of proximity or "integration" within various regions, and the reflection of this solidarity in the limitation of conflict within the regions. Deutsch has described international "integration" as a condition in which there is minimum probability of conflict. Russett points out that this does not fully describe integration such as that occurring in Europe and elsewhere, where states become increasingly receptive to each other or where supra-national organizations grow. But violence-reduction does give some indication of an environment facilitating such "integration."

Independent Variables

1. Institutional and economic bonds among nations within regional groups are measured in terms of common international organization memberships within Western Europe, Latin America, the Middle East, Non-Communist Asia, Eastern Europe, and Africa. These are compared for 1951 and 1962.

2. Economic bonds are measured in terms of intra-regional trade as a percentage of Gross Domestic Product for the entire region (for each of the above regions for 1954 and 1963).

Dependent Variable

Pairs of countries involved in conflict resulting in over 100 battle-related fatalities, 1946-65. These included intrastate and interstate wars as defined by Bendix in a study published in 1966.

Hypotheses

A prerequisite of successful political integration is the ability to peacefully settle conflicts; while we cannot expect complete lack of conflict in regions firmly bound economically or culturally, we may expect some reduction of intra-regional as compared to extra-regional conflict. This is not to imply that increased integration is the sole cause of decreased violence.

Analysis

A list was compiled of all 41 pairs of nations involved in violent conflict (100 or more deaths) from 1946-65, and the total percentages of warring pairs that shared membership in the same region were calculated separately for international organizational regions, geographical regions, trade regions, socio-cultural regions, and regions defined by U.N. voting. The percentages of these warring pairs in each region were then compared with the "expected value" of warring pairs for each region if there had been no regional influence on war. These "expected values" were simply the percentages of all pairs of nations that shared membership in the same region in the 1960's (i.e., if 26% of the pairs of all states in the world shared membership in the same geographical region, you would expect 26% of all pairs of warring states to share the same geographical region if region did not affect the probabilities of war). The difference between expected and obtained percentages of warring pairs presumably tells the effect of the type of region being considered.

Major Findings

1. None of the five characteristics of a region--clustering by common institutional membership, geographical proximity,

economic interdependence, socio-cultural similarity, or similarity in UN voting behavior--seems to reduce the likelihood of war within that region. "At best, cultural similarity and voting behavior make no difference in the probability of conflict...But countries belonging to the same groupings by organizational membership, proximity, or trade are more than twice as likely to fight than are nations which belong to different groups, or to none." Furthermore, states' being in a common region by all five criteria is not sufficient to prevent war, as shown by conflicts between Russia and Hungary and Algeria and Morocco. Though these regional associations do not prevent war, we have no grounds for concluding that they cause war.

2. More specifically, of the 41 pairs of combatants, none were solely in the same socio-cultural international organization membership or UN voting region (they had other regions in common). Russett concludes that, "Countries which share similar socio-cultural patterns, or share similar orientations in world politics, do not fight each other unless they are brought together by proximity or by economic interdependence."

3. Trade pattern similarity and geographical proximity do, by themselves, account for substantial numbers of combatant pairs. Over one half of the warring pairs shared membership only in regions defined by trade or geography. Trade interconnection and geographical proximity, therefore, remain as possible causes of war. Trade and proximity may add burdens to political relationships. Proximity also affords the opportunity to fight.

4. Western Europe has the largest increase in trade ties and in international organizational memberships from 1954-63. The Middle East seems to have "integrated" in both a trade and an institutional sense with a trebling of international organizational ties and considerable intra-regional trade. Latin America has fallen back in intra-regional trade, but greatly increased institutional ties. Within Eastern Europe the number of international organizations remains low while intra-regional trade is fairly high. Non-communist Asia ranks average or below both criteria, but has significantly increased organizational ties. Russett concludes that the emergence of a stable Asia

capable of containing Communist China without substantial U.S. assistance appears unlikely. Finally, ex-colonial Africa seems the least integrated region both in trade and institutional ties. Nevertheless, parts of Africa, such as the former French colonies, may be significant trading regions, tied to France or other parts of Europe or the West.

5. Generally, the evidence indicates that conflict is related to the growth of capabilities for integration; but not in any simple or direct way. When mutual ties (or awareness of responsiveness) between two countries is low, violent conflict is unlikely. When ties and mutual salience are moderate and narrowly focused (as in trade) conflict may be common. When ties and mutual capabilities are numerous and varied, conflict may be rare. None of the 41 conflicts occurred in Western Europe (which has developed extensive ties in all aspects of "integration") and few in the relatively close-knit Communist community or the politically interdependent Latin American region. War is probably much more likely in the other areas of the world.

Evaluation

1. In general, Russett makes some rather broad statements about the effect of socio-cultural or political proximity or other aspects of "integration" invariably inhibiting war. We are dealing with very imprecise measures of such proximity and with only 41 conflicts. This is hardly the stuff from which iron laws of conflict behavior can as yet be made.

2. Attention is directed to the interesting notion that certain forms of regional proximity (trade and geographical) may encourage conflict by burdening relationships between states. Indeed, there may be some truth to the adage, "Familiarity breeds contempt," especially in the sense that states in proximity may have more interaction and therefore more opportunities for disagreements to erupt into conflict.

The following two studies (Brams and Smoker) deal with interactions between underdeveloped states. They afford insights into crisis behavior of such states, and Smoker includes some policy proposals designed to promote regional stability.

Steven J. Brams, "Transaction Flows in the International System," mimeo, 1966.

Purposes and Theoretical Framework

Some cross-national studies have examined the effect of characteristics of states or their behavior on their relations. Brams' approach reverses the process and looks for the effects of interstate relations on their behavior. This requires specifying the relations of members of the international system or parts of it, and Brams does this through the analysis of different kinds of transactions which nations have with each other. It is posited that the flow of messages and information from other countries fashions the images of other countries by decision-makers.

A "transaction flow" model was set up to specify transaction levels between countries. Brams seeks to specify the boundries of groups of states paying such close attention. If B is a large country, we would expect A to devote more attention to it than to a small country, if no special relationships other than reaction to size held between the two. Brams operationalizes this expectation by saying that A will devote to B approximately the same percentage of its attention as that percentage of the world's attention which B received from all countries combined. If B receives 1% of the world's diplomats, the model predicts that A (as well as all other countries) will send approximately 1% of its corps to B. This, then, is the expected transaction flow, and the actual flow between A and B can then be compared to it. Large nations, with envoys in and trade with many countries will probably have more salient as well as non-salient exchanges than small nations. In this sense large nations will be more involved in the overall world arena, but small nations may have certain relationships just as intense or salient as the large ones have.

Variables

The various kinds of transactions between nations selected for analysis were:

1. Diplomatic exchanges--i.e., the number of career-level diplomats each country received from all other countries in 1963-64.

2. Trade-data for 1962.

3. Memberships in 161 intergovernmental organizations (IGO's) which each country shared in 1963 with every one of 117 other countries.

Analysis

The increase in interaction over "expected" levels in diplomatic exchange, trade and IGO membership is examined. The criteria for "salient" (significant to each state in the exchange) interaction were:

1. In the case of diplomatic exchange, two countries will be considered salient to each other at a minimum level if and only if each sends to the other at least 25% more diplomats than the indifference model would predict their exchanges to be. They will have a high level of mutual salience above a 50% threshold.

2. In the case of trade interaction, the threshold criterion for mutual salience is set at $1-million and for high level salience at $2-million.

3. For shared IGO memberships the levels were set at 1 and 2 memberships.

A computer analysis program was used to separate the transactions between states at various levels into a model or structure showing the hierarchies of inter-nation relationship.

Major Findings

1. Of the three types of interaction tested, trade interaction in 1962 for the whole world deviates the most from expectations if all relationships had been caused by chance alone. Trade seems to be the most frequently used means of interstate interactions. Trade is probably a more sensitive and suitable barometer of changing political relations between two countries than either of the other kinds of transaction flows. Countries rarely break diplomatic or organizational relations, "but deteriorating political relations between two countries will usually dry up their trade in a great

hurry" (but perhaps not permanently). Perhaps, if tested over time, diplomatic exchanges would appear as the most tradition-bound and non-fluctuating of the transaction flows, shared memberships somewhat less steady, and trade the most sensitive.

2. From the hierarchical ordering of trading relationships, Brams concludes that geographical proximity seems to be the dominant influence in the structuring of most trading groups. The U.S. was included in the Latin American trade region. Some areas, such as the Middle East, are split on trade, with Egypt and Syria part of the Soviet trade sphere and Jordan, Lebanon, and Iraq closer to some African states, and Saudi Arabia close to Australasia, India and Iran. France has close ties to its former African colonies.

3. In diplomatic representation, geography seems to prevail even more than in trade patterns, with Latin America (with Spain and Portugal added as ex-colonial ties remain), Central Europe (Scandinavia, Eastern Europe, and USSR), much of Mediterranean-Middle East-North Africa, Southeast Asia-Australasia, and the British Commonwealth emerging as coherent groups.

4. Shared IGO membership also seems to break down along geographic lines, with regional organizations in: Western Europe, the Middle East, Eastern Europe plus Communist Asia, South and Central America (including the U.S.), Asia plus the rest of the British Commonwealth, and Africa. Former colonial status tends to blur the geographical regions here, but IGO membership appears to entail the fewest extra-regional ties of any type of relationship tested.

5. Combining the groupings of all three indicators to locate the boundaries of world inter-acting groups in general, Brams again points up the importance of both geography and ex-colonial or political ties in defining inter-nation relationships. But the results here are rather ambiguous, since many nations are left out (many do not share strong trade, IGO, and diplomatic ties) and the groupings that emerge vary according to the analytical procedures used. For instance, part of Eastern Europe emerges as a group on three criteria, but Russia and Rumania are absent, and 14 very small groups of 2 or 3 states emerge (for example,

Sudan and UAR, Iran and Pakistan, Malaysia and Thailand, Taiwan and South Korea, Brazil-Chile-USA, etc.). Another analysis allowed for states to be in more than one subgroup (as in reality they probably are) and came out with 12 groupings of three states, including much of the British Commonwealth, Eastern Europe, and Scandinavia but leaving the U.S. and USSR out of set groupings.

6. The general conclusion is that geographical proximity is the strongest force of attraction in the international system. While ideological ties may either reinforce or conflict with this force, former colonial ties are the factor most likely to tear nations away from geographical neighbors.

Evaluation

1. This is an interesting initial step in the mapping of world interactions and the closeness of relationships especially among underdeveloped states. We may usefully remember Russett's tentative finding that shared membership in a region does not seem to reduce the likelihood of conflict (it may even increase it).

2. The choice of trade, IGO membership, and diplomatic ties may be somewhat limited in that we don't have any direct measure of states' political reaction to one another. Interactions such as UN voting or other political behavior may be less subject to geographical influence. The idea that proximity is important in conditioning states' behavior is an important one, but more systematic work is necessary to specify the issues on which it takes on its greatest importance (especially in the area of conflict behavior).

3. It is difficult to accept the conclusion that Poland and Czechoslovakia are "more involved than any others in the affairs of nations on the map" because they straddle three or four small sub-groups (mostly of Communist states) or that Britain is most active because it is a member of several subgroups containing Commonwealth states. The U.S. and Soviet Union are supposedly too general in their interaction patterns to be members of any cohesive concrete subgroups, but this in itself points to greater activity than that of any other states. It is important, therefore, not to equate

strong-on-going interaction with a certain group of states to influence with those states; while the U.S. interacts most with Latin America, one or two of its interventions or relationships in Asia or Africa may carry more weight than any "permanent member" of these regions.

4. The fact that interacting groups on the three variables combined were so small (consisting of 2 or 3 states) tells us that there are hard-core groupings that stick together (e.g., Japan-Thailand-Taiwan) but does not tell us the extent of the relationships of this group and certain other groups (such as one containing the U.S.). Again we lack a clear picture of the relevant political interests of each small group and the size of the group of states it might be prepared to cooperate with in pursuing those interests.

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Paul Smoker, "A Time Series Analysis of Sino-Indian Relations," paper presented to the International Peace Research Association Conference, June 17-19, 1967.

Purpose and Theoretical Framework

Most of the studies reviewed have dealt with aspects of internal and international politics for short time periods. Smoker attempts to study Sino-Indian relations as they develop through time, and especially through crisis periods. The substance of the paper concerns communications between the decision-making elites of the Republic of India and the People's Republic of China during the period 1959-64. From the unfolding communications patterns inferences are drawn concerning some necessary conditions for international stability.

The study was essentially the same definition of crisis as that of Charles McClelland in "The Acute Crises of Berlin and the Taiwan Straits: A Summary Statement," University of Michigan, 1967, mimeographed. Crises are defined as "intense and periodic manifestations of underlying conflict configurations in international politics and may serve for brief periods as partial substitutes for war." McClelland isolates these characteristics of "acute crises" among others: (1) they are brief, never more than three months; (2) when a second crisis occurs in the same arena, it tends to be shorter than the first; (3) the total behavior of all parties to a crisis tends to have a repetitive quality in that the same types of acts are employed more frequently and regularly than others. In addition, McClelland suggests that while crises have been prominent features of international politics of the "Cold War" era they may be less frequent in the future.

Smoker also based his conceptualizations on the results of a previous paper on the relationship among trade, defense, and communications for Indian and Chinese decision-makers during the 1954-1964 period. The conclusions from that study were:

1. From 1950-64 the defense expenditure of India varied inversely with trade except during the 1959-61 period.

2. During the period 1954-64 India pursued a non-aggressive defense policy up to September 1962; i.e., increased tension was met with decreasing defense expenditures and increasing communications.

3. After this period India appears to have adopted a policy of national security through military strength.

4. Up to 1959 there was relatively little communication. From 1954 up to the crisis, however, there is a steady rise in communication rates, with two crisis peaks. (March 1959--conflict in Tibet, and February 1961--beginning of border crises).

5. After the ending of active fighting in 1962, there was a decline in Indo-Chinese communication. The maximum communication rate was reached just before fighting started and there was a subsequent drop in the rate. A similar effect was noted by Ole Holsti in a study of World War I crisis in Europe.

6. It is possible that the sheer bulk of communication helped precipitate the crisis as the decision-making apparatus on both sides was overloaded.

7. Many of the disputes were over a few soldiers and goats, and violence was often at the "stone-throwing level of intensity" rather than higher levels.

Additional propositions were incorporated from an unpublished study by Greaser (University of California, 1966) entitled, "Sino-Indian Border Dispute, 1954-62.":

1. India committed over three border violations for every one committed by China.

2. Throughout the time period, the first half of each year was comparatively peaceful in the Himalayas, with activity starting in about April, peaking in July through October, and then tapering off again.

3. Most violations were of small magnitude, involving few men and a low number of deaths.

4. Seventy-six percent of all violations occurred in the air and not on the ground.

5. The almost 700% increase in violations in 1962 should have warned India to be better prepared.

6. The frequency of communiques correlated highly with the frequency of intrusions and intensity of conflict.

Smoker seeks, then, to examine the "freedom of decision" of decision-makers in crisis or in "escalating" situations. He has shown that communications increase greatly in crises between India and China, and he goes on to determine the effect of that increase in "binding leaders' hands." The vital assumption in this study is that "interaction" means that at least two countries respond to each other at the same time (i.e., during the same week rather than in a subsequent week or not al all). "Reaction" in the paper is taken to mean a situation in which one country responds to another at a measurably later date. If such interaction or reaction is going on (as opposed to full decisional freedom), political behavior may be effectively predicted: i.e., "freedom of decision" is based on a high correlation between one week's behavior and the next, meaning that we can predict the second week's events knowing the first.

Variables and Analysis

The number of communiques sent by India and by China were coded by the week for the 1959-1964 period. To detect seasonal variations, each year was divided into 52 weeks. A statistical procedure was then used to delete trends that were due to the season or the year, leaving the strength of Sino-Indian interaction due to normal conditions or crises. The interactions over the 312 total weeks were then "serially correlated," meaning that an attempt was made to find out how much effect an event or communique at week "t" had on the events at week "t + 1" (the next week). The degree of correlation here can be taken as an indicator of "freedom of decision" for Chinese and Indian decision-makers; i.e., the degree to which their decisions are or are not bound by previous events (one week before or two weeks before).

Five indices corresponding to the variables of "freedom of decision," "interaction," or "reaction," were defined as the analysis proceeded:

1. Index of China's freedom of decision (China's actions a week after China's previous actions).

2. Index of India's freedom of decision (India's actions a week after India's previous actions).

3. Index of Sino-Indian interaction (China-India communications in same week).

4. Index of China's reaction to India (China's actions a week after India's).

5. Index of India's reaction to China (India's actions a week after China's).

Major Findings

1. At the beginning of the 1959-64 period, and through the first 30 weeks, both nations appear to have a high freedom of decision.

2. By week 40, and the Dalai Lama incident in Tibet, a crisis peak is reached and the interaction level is very high. Here India's (but not China's) freedom of decision falls. This interaction peak then gradually falls and both states maintain freedom of decision. Thus, the first crisis was stable, since neither side "locked itself in" and lost decisional freedom, and information overload was not apparent.

3. A second month-long crisis is reflected in decreased freedom of decision for both sides and high reaction rates at week 150.

4. At week 230 in late 1964 India appears to lose her freedom of decision and China's response to this is a dropping off of reaction.

5. Generally, it may be possible to identify stable and unstable patterns of behavior in terms of such concepts as freedom of decision, interaction, and reaction. Patterns of verbal behavior seem consistent with the violent and non-violent management of the crises.

6. Some policy implications are included:

(a) Observation stations might be established to take continuous readings on relationships in the various world trouble spots and potential trouble spots. When stability appears possible in any situation, conflict management procedures could be brought to bear.

(b) The decision-making machinery of national governments should be such that in crises their information-processing power can be greatly increased.

Evaluation

1. The finding that information interchange reflects political events is a useful one, but several qualifications are needed:

   (a) Several times the information exchange increased during non-crisis,and Smoker offers little explanation of that phenomenon.

   (b) Measuring a country's policies a week after previous policies is not a direct measure of "freedom of decision," since the country may or may not be able to change policies the next week. Little explanation is offered for the frequent loss of "freedom of decision" by one party in a crisis while the other party maintains such freedom.

2. As Smoker admits, more refined measures of countries' mutual reactions are needed to supplement communications. Troop movements, for instance, would be an interesting measure of crisis intensity.

3. Though both countries have high accessibility by sea, they are remotely connected by it, and the conflict took place in mountains along their common border. More study of of behavior in conflicts involving different types of force capabilities is needed in order to discover whether crisis decision-making would be relatively uniform regardless of the theatre of operations.

APPENDIX D

UNITED STATES NAVY CIVIC ACTION: ITS STATUS AND OUTLOOK IN 1966

PREFACE:

Civic action is the most appropriate military operation for use in the prevention of revolution or other less-organized challenges to the governments of new states. It is essentially a non-violent, humanitarian link between the government and the people. In traditional societies which have developed neither an efficient civil bureaucracy nor mass-participation political parties, only the military has the technical skill, efficiency, mobility, disciplined organization, and material resources to bring modernity to peoples in remote areas.

The United States has a military civic action doctrine and it performs the function in two ways: (1) by training foreign military forces and (2) by performing projects directly with U.S. forces. Military civic action is not a new concept nor is it consistently undertaken prior to combat. However, the U.S. national interest is best served by preventive measures, rather than reaction after violence has broken out. The Navy's and Marine Corps' unique technical skills, forward deployment and inherent mobility point to the need for careful scrutiny of civic action activities in relation to low-level conflict.

This Appendix contains the results of a brief survey in 1966 of how things stood with U.S. Navy civic action. It reviews the procedures used, the resources allocated, states some problems to be resolved, and makes recommendations. The report is based upon a study of documents, interviews in Washington and elsewhere, and a field trip to COMSOUTH. It is limited in scope because it does not deal extensively with the conflict in Vietnam which has caused a dislocation in normal civic activities of the Navy. It does not treat civic action by the U.S. Marine Corps because other studies have been made on that topic.

The most significant finding in the report is that action is not like U.S. doctrine: U.S. forces often work directly with foreign nationals rather than through the local military. The most significant problem not dealt with here or elsewhere to date is that the effectiveness of military civic action has not been assessed and related to its costs. The difficulties of assessing effectiveness lie in the varied objectives of military civic action and the problem of measuring change in human attitudes. Extensive field work and concrete objectives would help to solve the problem of measuring effectiveness. More elaborate cost accounting and consideration of opportunity costs are required before a systematic assessment can be made of the worth of military civic action.

I. INTRODUCTION

Every kind of warfare has its nonmilitary and noncombat aspects. In low-level conflict, noncombat operations often predominate, particularly in the preventive- and early-insurgent stages. While the individual or ad hoc military contributions to a nation's social and economic development have occurred for centuries, only in recent years have they been canonized under the name of civic action[1] and been made a formal command responsibility of all American armed services. Of the services, the Army has been assigned the principal role in civic action, providing about 75% of the men and equipment. In FY 1966 the Air Force's share in resource is 16%; the Navy's, 9%.[2] Clearly, the Navy's role has not been large.

Yet the U.S. Navy enjoys a deserved high reputation in disaster-relief, weather forecasting, quick and competent construction by its "Can Do" Seabees, research support, oceanography, polar exploration, the outer space program, its People-to-People program, and Project Handclasp, "which assists in the transportation to approved overseas addresses of foods, medicine, clothing, and other items donated by American individuals, organizations, and business concerns."[3] All of these activities are important, many of them can be fitted into the civic action rubric, and some of them are related to counterinsurgency, especially preventive counterinsurgency, which

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[1] Military civic action is defined officially as: "The use of preponderantly indigenous military forces on projects useful to the local population at all levels in such fields as education, training, public works, agriculture, transportation, communications, health, sanitation, and others contributing to economic and social development, which would also serve to improve the standing of the military forces with the population." (US forces may at times advise or engage in military civic actions in overseas areas.) U.S. Joint Chiefs of Staff, Dictionary of United States Military Terms for Joint Usage, JCS Pub 1 (Washington: Government Printing Office, 1964), pp. 90-91.

[2] Interview with Mr. W. James, Assistant for Civic Action, OSD(ISA).

[3] U.S. Navy, Bureau of Personnel. Education and Training, NAVPERS 10827-B (Washington: Navy Training Publications Center, 1964), p. 140. See Attachment D-1 to this Appendix.

may be defined as "those prophylactic measures of a social and economic nature instituted by a government to insure that ...insurgency does not begin in the first place."[4] This report contains a survey of Navy civic action in 1966, suggests ways in which it should be augmented to cope with low level conflict and makes recommendations.[5]

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[4] Edward Bernard Glick, "Conflict, Civic Action, and Counterinsurgency," Orbis, X (Fall 1966), 904.

[5] Compared to the other services, there is little about U. S. Navy civic action in the literature. Among the more informative items are: the Seabees in Action series of pamphlets published by the Naval Facilities Engineering Command; OPNAV Instruction 5726. 3A, of 28 August 1964, relating to "People-to-People/Overseas Community Relations; Project Handclasp"; D. L. Ashley, Dungaree Diplomacy: Seabee Civic Action Projects as an Instrument of United States Cold War Policy, a thesis submitted to the Naval War College (Newport, Rhode Island, 2 March 1964); U. S. Navy, Seabee Team Training Information Pamphlet (Port Hueneme, California: 31st Naval Construction Regiment, 1966); Ong Bien [Water Beetle], a pamphlet published by the Navy in Vietnamese (with inter-leaved English translation) "to introduce United States Navy Seabee Teams to the inhabitants of areas in which these Teams will operate", Inter-American Defense Board, Military Civic Action in the Economic and Social Development of the Countries, Document T-255 (Washington, 1965); United States Southern Command, Civic Action Projects Report, 1 January 1965-31 December 1965, 3 Vols. (Quarry Heights, Canal Zone, 1966); M. Dean Havron and Randolph C. Berkeley, Jr., The Role of Civil Affairs in Marine Corps Operations, ONR Contract No. N00014-66-C0065 (McLean, Virginia: Human Sciences Research, Inc., 1966); U. S. Navy, Seabee Technical Assistance Teams: An Existing Counterinsurgency Force (n. p., n. d.); and Edward Bernard Glick, Peaceful Conflict: the Non-military Use of the Military (Harrisburg, Pennsylvania: Stackpole Books, 1967). Also made available for this study was a file of civic action data supplied by LCDR J. Moger, Civil Engineer Advisor, United States Naval Forces, Southern Command; three unpublished documents, "Naval Mobile Construction Battalions," "A Navy View of Counterinsurgency," and an untitled chronology of Seabee Team deployments from November 1959 to November 1966, supplied by CDR R. W. Loomis of the Naval Facilities Engineering Command. Additonal material collected during the review of operational records for another task is included in this section as Attachment.

II. ASSUMPTIONS

A first assumption is that rivers, coastlines, and close-in offshore, and shallow waters are becoming more important as areas of naval operations. Secondly, as the number and use of overseas foreign land bases diminishes, the need for more and longer self-contained sea-based Naval/Marine Corps capability will grow. Thirdly, the nature of Marine Corps involvement in warfare may well be changing. Traditionally, the Marine Corps has, because of its floating availability, often been the first military group to enter as well as the first to leave a trouble spot. If Army forces came in at all in sufficient numbers, they usually did so later. In these cases, the Army supplied whatever civil affairs and action support the Marine Corps required. But if the recent examples of the Dominican Republic and South Vietnam are accurate guides to the future, the Marine Corps may still be the first to enter, but not the first to leave. It has been in Vietnam in large numbers for quite a while now, and the longer it stays, the more involved it will be come in civic action.

As these assumed trends--increased riverine, coastal, and shallow water operations, increased sea-based capabilities, and increasingly longer Marine Corps involvements--manifest themselves, so too will the need for increased U.S. Navy participation in noncombat, civic action/civil affairs activities.

III. FINDINGS: STATUS OF U.S. NAVY CIVIC ACTION[6]

Current Organization

The Army has its Civic Action Branch in the Civil Affairs Directorate of the Office of the Deputy Chief of Staff for Military Operation. By contrast, the Navy has no comparable civic action organization. The Special Operations Branch of the Strike Warfare Division of the Office of the Deputy Chief for Naval Fleet Operations and Readiness is generally concerned with civic action. However, there is no civic action billet in the top organization of the Navy. The closest one can come to this is Code O6A (Military Readiness - Seabees) in the Naval Facilities Engineering Command. At

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[6] The ONR-sponsored Human Sciences Research study on The Role of Civil Affairs in Marine Corps Operations includes civic action in its definition of civil affairs. Its Appendix D, with its discussion of open-looped and closed-looped civic action, is especially useful; consequently, this report deals very little with the Marine Corps.

lower levels, civic action is a collateral secondary duty assigned usually to Civil Engineer and Medical Corps personnel who, with some exceptions, must struggle to find the time and energy to plan and execute civic action on any ongoing basis.

Except possibly for the Naval Amphibious School at Coronado, the Navy has no schools which stress civic action as does the Army's Civil Affairs School at Fort Gordon, Georgia. Instead, the Navy prefers to send small numbers of Marine Corps and Navy personnel to Fort Gordon. (See Table D-1) In fiscal year 1965 there were only 4 Navy and 18 Marine Corps students out of a total of 1227 attendees at the Civil Affairs School.[7]

TABLE D-1

STUDENTS ATTENDING ARMY CIVIL AFFAIRS SCHOOL

(fiscal year 1965)

	Projected Quota	Actual
Army	290	455
Reserve	455	710
USMC	48	18
Civilians	1	3
Non-US	75	42
Navy	0	4
Total	869	1227

Source: M. Dean Havron and Randolph C. Berkeley, Jr. The Role of Civil Affairs in Marine Corps Operations, ONR Contract No. N00014-66-C0065 (McLean, Virginia: Human Sciences Research, Inc., 1966), p. 40.

[7] Havron and Berkeley, The Role of Civil Affairs in Marine Corps Operations. p. 40.

Furthermore, there are no civic action courses, as such, being taught at Navy schools and no Navy manuals and lesson plans like the Army's Basis and Directives for Civic Action,[8] Command and Staff Guidelines for Civic Action,[9] and Civic Action Lesson Plan.[10] This lack of concentrated formal attention to civic action (indeed to counterinsurgency) probably stems from the Navy's continued commitment to "general purpose" rather than "special" forces.

Civic Action Funding and Requests

The Agency for International Development and the Defense Department have agreed upon a funding formula for sharing civic action costs. Under it, the Defense Department, through the Military Assistance Program, pays for the purchase and maintenance of military equipment employed in civic action and in any training connected with it. AID pays the cost of consumable items like lumber, cement, gasoline, and oil, which the military use in training for or actually doing civic action.

Assume a decision has been made that a telephone system is a practical and feasible civic action project in country X. The Defense Department will pay for the team which studies the project and for the expendable military supplies for its installation if such supplies will enhance a military unit's ability to install the system. Anything that is actually part of the system itself, e.g., wire, batteries, switchboards, telephones, poles, etc., will be paid for by the Agency for International Development.

Typically, it is the Country Team that requests and monitors a civic action program in country X. The highest-ranking agency representatives posted to a given foreign country comprise the Country Team, headed by the head of the U.S. legation. The procedure for formal requests is generally, as follows: If the Ministry of Foreign Affairs of country X wishes to have American civic action aid, it will approach the American Ambassador (or its Defense Ministry will approach our military representatives) and request it. If the U.S. Country Team believes that the request (or one generated by the Team itself) is justified, it will pass it, with any necessary modification, to the appropriate Unified or Specified Command (such

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[8] Lesson Plan 5140, Civic Action Course 41-G-F7 (Fort Gordon, Georgia: Civil Affairs School, 1964).

[9] Special Test ST 41-10-90 (Fort Gordon, Georgia: Civil Affairs School 1964)

[10] C6: F2206-C3. F2204-6120 (Fort Bragg, North Carolina: Special Warfare School, 1964).

as the Southern Command for Latin America). From there it will go sequentially to the Office of the Assistant Secretary of Defense for International Security Affairs, to the Joint Chiefs of Staff, and if approved, to the Department of the Army, Air Force, or Navy for implementation.

If the American representatives already in country X do not themselves have military civic action capability, they will call for the dispatch of a team of temporary duty specialists to come there. This team may be inter-agency, inter-service, or a single service unit. Most often, it is an Army Civic Action Mobile Training Team (CAMTT); less often, a Seabee Team, formerly known as a STAT (Seabee Technical Assistance Team). Except for the relatively ad hoc and idiosyncratic People-to-People Program, Project Handclasp, disaster-relief, and Marine/Navy medical care to Vietnamese civilians, Navy civic action is performed essentially by the Seabees.

The Seabees and Civic Action

In April 1965, there were approximately 10,000 Seabees in the US Navy, half of whom were organized into two Amphibious Construction Battalions and ten Mobile Construction Battalions (MCBs). Though the normal staffing for an MCB is 21 officers and 563 men, five of the MCBs were at a strength of 525, three were at 400, and two at 200. During the build-up of forces in South Vietnam, the Seabees were augmented by about 13,000 men. About half of the MCBs are deployed to Southeast Asia. Seven battalions are or will be based in California, seven in Rhode Island, and five in Mississippi. The battalions have each been augmented to 738 officers and men. Primarily by offering petty officer ratings to qualified civilians in the building trades and recruiting them directly into the service at those ratings.

In 1965, there were four Mobile Construction Battalions stationed in Vietnam doing both civic action and non-civic action tasks. In 1966 there were eight. But since the MCB rotation schedule is eight months abroad and six months in the United States (for leave, reoutfitting, military and technical training, and equipment rehabilitation or replacement), the Navy in any given year deploys fourteen Batallions to Vietnam. This explains why almost all Mobile Construction Battalions are, for all practical purposes, now committed to Southeast Asia and are unavailable for use elsewhere.

Each Mobile Construction Battalion must maintain and be able to field two Seabee Technical Assistance Teams, whose members train together for 16 weeks. It normally consists of one Civil Engineer Corps officer and twelve men (See skills listed in Table D-2).

TABLE D-2

TYPICAL SEABEE TECHNICAL ASSISTANCE TEAM

Number	Type	Typical Skills
1	CEC Officer	Officer of the Civil Engineer Corps, graduate engineer of a leading college or university who has had practical field experience
3	Equipment Operators	Operate a wide variety of construction equipment
2	Equipment Mechanics	Maintain a wide variety of construction equipment
1	Steelworker	Welding, rigging, sheetmetal fabrication, structural steelwork
2	Builders	Carpentry, masonry, concrete work, bridge building
1	Construction Electrician	Interior wiring, small power plants, pole lines
1	Utilitiesman	Plumbing, pumps, refrigeration, well-drilling
1	Engineering Aid	Surveying, drafting, soils analysis
1	Hospital Corpsman	Emergency medical treatment, sick calls, clinics, routine diagnoses

Source: Ashley, op. cit., pp. 24-25.

The team is supposed not only to do, but to teach as well, often in the language of the host country. Each team is logistically self-contained, carrying its own supplies, tools, and equipment. Since 1959, at least three Seabee Teams have been deployed to Africa, five to Latin America, fourteen to Thailand, and over thirty to South Vietnam. They have built camps for Army Special Forces, served as construction advisors under the Military Assistance Program, and worked as technical instructors for the Agency for International Development which often finds it difficult, if not impossible, to get American civilian specialists to work in areas that are inhospitable, unhealthful, and unsafe. As the U.S. Ambassador to South Vietnam has stated:

> It is hard enough for our government to hire an... expert who is technically qualified and willing to serve abroad. To get an American who not only fills those requirements but is also tactful and able to make himself trusted and understood in a strange language and in a strange environment is even more difficult. Many of the difficulties connected with our so-called 'foreign-aid' programs stem from this fact. [11]

All Seabee Teams in Thailand in 1966 were there under AID auspices at costs indicated in Table D-3.

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[11] Henry Cabot Lodge, quoted in U.S. Navy, Dungaree Diplomacy, p 57.

TABLE D-3

MONTHLY COST

TO THE SPONSORING AGENCY FOR A SEABEE TEAM:
SOUTH VIETNAM AND THAILAND[12]

	RVN	THAI
Deployment per diem	$3,748	$3,758
Equipment operation/maintenance	1,750	2,242
Equipment overhaul	667	3,125
Allowance replacement and contingency	1,168	1,874
Estimated Total	$7,333	$11,000

NOTE: Construction Materials Paid For By Sponsor

While the monthly cost to AID of fielding thirteen competent civilian contract personnel to Vietnam and Thailand is unknown, it probably exceeds the $7,333 and $11,000 now being paid for Seabee Teams working in these two countries. That the teams have proved their worth is clear. They are usually not molested by the Viet Cong, and Ambassador Henry Cabot Lodge requested an additional forty teams for South Vietnam alone.[13] Their value is known in Latin America, Africa and the Middle East as well. However, the knowledge that requests for teams in these areas are not being honored at this time has inhibited demand.

Yet even without the large commitment to Vietnam, Seabee Team deployment capabilities would still be severely restricted. There were

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[12] Source: U.S. Navy, Naval Facilities Engineering Command, Military Readiness-Seabees-Code 06A (Washington, 1966).

[13] op. cit., "Naval Mobile Construction Battalions," p. 17.

in 1966 approximately nineteen Mobile Construction Battalions in the Navy. Each Battalion can field two Seabee Teams. Each Seabee Team numbers thirteen men. This means that out of an active duty roster of approximately 750,000 officers and men, the Navy allocated only 38 officers and 456 enlisted men for construction-type civic action duties on a regular basis. There are obviously limits to what the Navy can do worldwide with only 500 Navy "peace corpsmen" or "dungaree diplomats" specifically assigned and organized for construction-training activities.

Administrative fiat at the DOD or CNO level is not the only reason for the limited number of onboard Seabee Teams. Budget, personnel availablity and suitability, and training problems also play a role. Exclusive of training and living facilities, the yearly cost of a Construction Battalion, from which the Seabee technical assistance or civic action teams are formed, is $11 million.

Secondly, the number of construction specialists in the U.S. civil sector as a whole, and in the Navy in particular, is limited, as are the latter's training facilities. Even given increased training facilities, there are limits to how much one can step up the training cycle for such highly skilled trades as carpentry, electrical construction, and equipment operation and repair. Cross-training, or the training of a person in more than one skill, is a difficult problem. At the present time the Navy does not do it until a civic action team is actually assembled for the special 16-week Seabee Team training course.

Thirdly, as in every kind of human endeavor, there are human factors limiting Navy civic action. An American "sailor who can do, may not be able to teach. If he can teach, he may not be able to teach in a foreign language. If he can teach in a foreign language, he may have a personality or political orientation that prevents him from teaching and doing well in a particular country,"[14] or, for that matter, in any foreign country.

Foreign Naval Civic Action

Few countries have large navies with multi-ocean capabilities that underlie active foreign policies. Also, many countries assign their navies tasks which no military service in this country undertakes on a regular basis, e.g., the transporting of water to civilian communities along the coast, or the provision of nonmilitary cargo and passenger service to outlying areas. Some countries assign to their navies tasks which are performed

[14] Glick, Peaceful Conflict, p. 159.

by the civil sector of the U.S. economy, or, if performed by the government, are assigned to the Weather Bureau, the Coast Guard, the Coast and Geodetic Survey, the Maritime Administration, the Federal Aviation Agency, or the Public Health Service.

These foreign naval civic action experiences and the riverine and coastal orientation of many of the world's navies may provide useful ideas to U.S. Navy planners and personnel concerned with the noncombat aspects of low-level conflict. Moreover, so long as foreign governments and navies continue to turn to the U.S. Navy for certain kinds of technical and military assistance, it behooves us to be aware of what they do in the way of civic action. By way of illustration, Table D-4 lists typical categories of naval civic action in Latin America.

IV. THE FUTURE OF NAVAL CIVIC ACTION

Conclusions

A number of conclusions emerge from this brief survey. First, as shown by the costs in Table D-3, naval civic action is probably cheap when compared to civilian contractor costs.

Second, civic action is politically and technically worthwhile and is appreciated by both American and foreign officials. During World War II, General Douglas MacArthur wrote to Admiral Ben Moreel: "The only trouble with your Seabees is that you don't have enough of them." More recently, the Department of State Newsletter of May, 1964, described in detail the Navy's people-to-people activities in connection with the U.S.S. BACHE's ferrying of Ambassador Julius C. Holmes to remote villages in the Persian Gulf area of Iran. In 1960, the Commander-in-Chief of the Ecuadorean Navy praised the work of a Seabee Team in these words:

> The select and expert personnel of this Battalion deserves all our gratitude for the decided and brillant manner in which they are carrying out their task . . . I would like to ask . . . that the personnel of the Naval Construction Battalion that is working with us by permitted to continue in Ecuador until the completion of this project.[15]

[15] Quoted in U.S. Navy, Dungaree Diplomacy, p. 29.

TABLE D-4

CIVIC ACTION BY LATIN AMERICAN NAVIES

Activity	Countries
Civilian Rescue Service	Argentina, Brazil, El Salvador, Uruguay, Venezuela
Research (Oceanography, Hydrography, River Surveys Etc.)	Argentina, Brazil, Peru Uruguay
Naval Transportation of Civilian Cargo and Passengers	Argentina, Chile, Ecuador, Peru, Uruguay, Venezuela
Construction and Repair of Civilian Vessels in Naval Shipyards	Argentina, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela
Inter-City Teletype Communications	Brazil
Community Water Supply	Dominican Republic, Ecuador
Education (literacy campaigns, vocational training, school construction, etc.)	Chile, Colombia, El Salvador, Guatemala, Paraguay, Uruguay, Venezuela

Source: United States Southern Command, Civic Action Projects Report, 1 January 1965 - 31 December 1965 (Quarry Heights, C. Z., 1966). I-III.

Similarly, when a Seabee Team completed an AID-sponsored Skilled Manpower Development Center in the Dominican Republic in July 1963, the center was personnally dedicated by President Juan Bosch.[16]

Additonally, one can also cite a Costa Rican testimonial to U. S. Navy civic action. Several years ago, Costa Rica experienced a serious volcanic eruption, and the Seabees were called in. When the team arrived one of its members observed that the mud had "the density of cake batter and the speed of flood water with giant rocks riding on top." When it left, a high Costa Rican official remarked: "Without the Seabees we would have had a real catastrophe on our hands."[17]

Third, it is the Seabees Teams that do most of the Navy's civic action, as indeed they should. Man for man, they are usually better trained than their counterparts in the Army or Air Force and they have often been in the service longer. Apparently, the Navy does not suffer as much from the problem of attracting and retaining dedicated officers to civic action as do the other services even though the stereotyped career pattern may give a general perception that civic action is not the best and quickest way to be promoted. Perhaps because of this, Army and Air Force Civic Action Mobile Training Teams (Special Forces excepted) are usually ad hoc operations whose members frequently represent different branches of the same service, have not usually lived and served together before, and are afraid of being permanently typed in civic action or civil affairs careers.

The Civil Engineer Corps is a permanent and separate group within the Navy, with its own career line. CEC officers compete only with each other for promotion as do Seabee enlisted men. Both the officers and men appear to suffer no serious career degradation because of any commitment to or involvement in civic action. It appears too that CEC — Seabee esprit de corps is matched in the other services only by the Army's Special Forces.

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[16] Ibid., p. 35.

[17] The New York Times, 23 August 1964, p. 35.

Fourth, while the Navy can handle current formal requests for Seabee Teams, it can do so only because foreign governments and United States military and diplomatic personnel abroad are grudgingly aware that Vietnam and Southeast Asia have first call and hence are making few, if any, such requests. There is a kind of administrative illusion here which confuses surface appearance with subsurface reality. Requests will overtake resources just as soon as the requestors are convinced that it is no longer useless to make their requests and that they are no longer victims of the "Vietnam Fixation," with all of its deployment and logistics ramifications. Today a Seabee Team could be used adequately in every Latin American country. In 1964 a Southern Command report noted that a "billet exists for a full-time U. S. Naval officer advisor to the [Brazilian Naval Research] Institute and complained that "it is vacant at present due to delays in acquiring a fully qualified officer."[18]

The pressure for naval civic action support by the United States will continue because the U. S. Navy has unique capabilities, because particular foreign armies at particular times are not competent or well perceived internally or externally, and because other historical, political, psychological, or administrative reasons will lead to requests for civic action aid from the U. S. Navy rather than from the Army, Air Force, or Agency for International Development. A substantial increase in U. S. Naval civic action will require more men, more training facilities, perhaps a shorter training cycle, and more multi-language trained personnel.

Fifth, the practice of civic action – in the Navy as well as in the Army or Air Force – is subverting the theory of civic action. The JCS civic action definition begins with the prase: "The use of <u>preponderantly indigenous</u> military forces . . . ."[19] The Department of the Army's Field Manual on <u>U. S. Army Counterinsurgency Forces</u> (FM 31-32, 1963) says in its section on military civic action:

> The purpose of the military civic action program is to use <u>indigenous</u> military forces for the benefit of civilian communities . . . . Both U. S. and indigenous forces may engage in . . . military civic action; however, the <u>primary</u> effort of U. S. individuals and units will be to advise, train, or assist

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[18] United States Southern Command, <u>Civic Action Projects Report, 1 March 1964 - 1 January 1965</u> (Quarry Heights, Canal Zone, 1965), pp. 337-338.

[19] Italics added. (See no 1 above.)

the indigenous forces. The objective of such advice, training, and assistance should be to increase the capability of the indigenous forces and reduce dependence on US aid.[20]

In other words, the theory says that the civic action flow should be primarily from the American military to the foreign military. When the latter is fully trained and competent, skills should be transmitted from the foreign military to the foreign civilians. The flow is not supposed to be directly from the American military to the foreign civilians. Even when the pressures of the moment to impel United States military civic action personnel to interact directly with foreign civilians, they are supposed to work with them, not only for them.

But what is often the reality? Americans are impatient. There is so much to be done and so little time in which to do it. Moreover, in our society it is physical results that please superiors, not time spent slowly teaching foreigners how to do for themselves after the Seabees are gone. Those who judge the quality and quantity of naval civic action in relation to the time spent on it are very often non-CEC, noncivic action, even non-naval personnel. The result, especially as a Seabee Team nears the end of its overseas tour, is that the teaching of the foreigners is the first casualty and Seabee cross-training and practice in additional skills the second. The best carpenter on the team spends all of his time doing carpentry, the best bricklayer, laying bricks. Everyone is on a production schedule, rather than a civic action schedule.

Sixth, as has already been documented in the Human Sciences Research study of the Marine Corps, the Navy "does not and cannot — at present — support any Marine Corps civil affairs operations"[21], and it cannot always continue to expect civil affairs coverage by the Army. Except for ad hoc medical aid near Marine bases in Vietnam — a program often supported by Navy doctors and Seabee medics — the HSR observation applies to civic action as well as civil affairs. Specific civic action billets should be added to the top echelons of the Marine Corps and Navy. These men should be charged with the preparation of civic action training manuals, personnel selection and training, and so on.

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[20] P. 9. Italics added.

[21] Havron and Berkeley, op, cit., p. 54.

Recommendations

(1) There ought to be more Seabees and more of them ought to be regularly assigned to civic action.

(2) When they work, American civilians in the construction trades are paid well. During these periods of high building activity, Seabee recruitment and retention becomes more difficult and attendance at Reserve meetings and two-week training tours declines. Therefore, the feasibility of synchronizing Seabee recruitment, reserve training, and reserve call-up with slack or slump periods in the domestic building industry ought to be studied.

(3) That which is urgent may not be the only thing that is important at any given moment. A problem that is not urgent now can be just as important as one that is. In other words, that part of the "Vietnam Fixation" now preventing civic action deployments elsewhere, particularly in non-insurgent areas, must be resisted and reversed. In Latin America, for example, most naval Military Assistance Program support goes to Argentina, Brazil, Chile, and Peru, countries having "deep water" navies. But the states most prone to insurgency are in northern South America, Central America, and the Caribbean (the "shallow water" navies). The best kind of counterinsurgency operations are preventive, and these are best stressed where insurgency is absent from countries that are prone to it.

(4) If there are to be simultaneous multi-regional deployments of Navy civic action personnel, then more research and planning must go into the criteria for allocating men and material to civic action, the logistics of civic action support, and the language and culture training of civic action personnel. As matters stand presently, the bulk of resources are assigned to Southeast Asia, and the language and cultural training is for Thailand and Vietnam.

(5) More research is needed in the selection and training of civic action among foreigners. One problem that stands out is: How to insure that the U. S. Government gets credit for naval civic action, but not so much credit as to diminish the standing of the local government or its navy in the eyes of the civilian population?

(6) There are some problems with personnel which should be studied:

(a) What are the best criteria and methods for selecting naval personnel for foreign shore-based assignments?

(b) How can the training of "blue collar" personnel in foreign languages, particularly exotic, non-Western languages, be expedited?

(c) How can training (including cross-training) in construction skills be improved and/or expedited?

(d) Are there any skills especially useful in civic action that are not now required of or generally taught to naval personnel? If so, should they be taught at naval schools, and how?

(e) What is the best way of presenting the civic action concept generally to U. S. naval personnel at all levels?

ATTACHMENT D-1

EXAMPLES OF U.S. NAVY EMERGENCY RELIEF AND GOOD WILL OPERATIONS, 1955 - 65[1]

1955: U.S.S. W.M. WOOD (DDR-715) and U.S.S. ALBANY (CA-123) provided five rescue parties, medical supplies and personnel, and temporary shelter after Volos earthquake 19-21 April 1955.[2]

Following floods in New England, Pennsylvania, the Delaware River Valley, northern California, and Tampico, Mexico, the Navy carried out relief operations in which:

1. 10,400 persons were evacuated to safety.

2. 3,756 tons of food, bedding, and medical supplies were provided.[3]

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[1] This listing was prepared as a by-product of the review of records for the analysis of military operations. It is not all-inclusive; however, enough cases are presented to give an indication of the range and size of emergency relief operations carried out by the Navy.

[2] Commander in Chief, U.S. Naval Forces, Eastern Atlantic and Mediterranean, Report of Operations and Condition of Command, 1 July 1954 - 1 July 1955 (U), 19 July 1955 (SECRET), Enclosure (1), p. 4.

[3] Department of Defense, Semi-annual Report of the Secretary of Defense and the Semi-annual Reports of the Secretary of the Army, Secretary of the Navy, and Secretary of the Air Force, January 1 to June 30, 1956; Washington, D.C., GPO, 1956, p. 164.

For the Tampico, Mexico relief operations following hurricanes HILDA and JANET, Commander 15th Naval District (Commander Panama Section, Caribbean Sea Frontier) was designated Commander Task Group 84.7 with the following units assigned:

U.S.S. SAIPAN (CVL-48) (with helicopters), 2-10 October

U.S.S. BASSETT (APD-73), 4-9 October

U.S.S. OGLETHORPE (AKA-100), 10-13 and 18-22 October

U.S.S. SIBONEY (CVE-112) (with helicopters), 9-16 October

During this operation approximately 9000 persons were evacuated, 3000 tons of food, numerous inoculations, and medical care were provided. [4]

1957: In the aftermath of the Hungarian revolution of 1956, MSTS shipping was provided for the transport of approximately 10,000 refugees to the U.S. and 2,500 to Australia between December 1956 and February 1957. [5]

U.S.S. LAKE CHAMPLAIN (CV-39), U.S.S. THUBAN (AKA-19), and U.S.S. WASHTENAW COUNTRY (LST-1166) conducted flood relief operations at Valencia, Spain, 16-17 October. [6]

U.S.S. PHILIPPINE SEA (CV-47) and 3 destroyers engaged in the search for downed PAA aircraft finding the wreckage and several bodies. [7]

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[4] Commander in Chief, U.S. Atlantic Fleet, Annual Report, Fiscal Year 1956, 2 September 1956 (SECRET), p. 26.

[5] Department of the Navy, Annual Report of the Chief of Naval Operations to the Secretary of the Navy, Fiscal Year 1957, August 1957, p. 110; Department of Defense, Semi-annual Report . . . , 1 January 1957 to 30 June 1957, Washington, D.C.: GPO, 1958, p. 175.

[6] Assistant Chief of Naval Operations (Op 90c), Summary of Naval Accomplishments, 2nd Quarter, Fiscal Year 1958 (U), 7 February 1958 (SECRET) p. 2.

[7] Ibid., p. 6.

Atlantic Fleet units aided in the rescue of crewmen of the German ship PAMIR. [8]

Task Force 109, consisting of U. S. S. PRINCETON (LPH-5), 6 destroyers, 2 submarines, 1 fleet oiler, and patrol aircraft, participated in relief operations for flood victims on Ceylon from 28 December 1957 to 7 January 1958. Wells were sterilized, persons evacuated, numerous inoculations and medical care given, and over 200 tons of food supplied. [9]

1958: Pacific fleet aircraft flew supplies to inhabitants of Marshall Islands on 9 January following damage by Typhoon OPHELIA. [10]

Two Soviet grain ships entered Midway Island harbor on 25 January for emergency repairs and fuel. [11]

Nine-man medical teams from Naval Medical Research Unit Two (NAMRU 2) were dispatched for aid in cholera and smallpox epidemics at:

Dacca, East Pakistan, 7 May 1958

Bangkok, Thailand, 12 June 1958. [12]

1959: Chinese Nationalist transport YUNG FEN was pulled off Tizard Reef by Seventh Fleet ATF and ARS. [13]

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[8] Ibid., p. 6.

[9] Commander in Chief, U. S. Pacific Fleet, Report of Operations and Condition of Command, 1 July 1957 to 1 February 1958 (U), 1 February 1958 (CONFIDENTIAL), p. 9.

[10] Assistant Chief of Naval Operations (Op 90c), Summary of Naval Accomplishments, 3rd Quarter, Fiscal Year 1958 (U), 12 August 1958 (SECRET), p. 22.

[11] Ibid.

[12] Assistant Chief of Naval Operations (Op 90c), Summary of Naval Accomplishments, 4th Quarter, Fiscal Year 1958 (U), 12 August 1958 (SECRET), p. 22.

[13] Commander U. S. Seventh Fleet, Command History - 1959 (U), 2 January 1960 (SECRET), p. 4.

Medical supplies and personnel were sent to Djarkarta following a 30 May rail disaster.[14]

U.S.S. THETIS BAY (LPH-6) aided Taiwan flood victims 13-19 August, delivering 1,600,540 pounds of supplies and administering 5,000 inoculations.[15]

U.S.S. KEARSARGE (CVS-33) aided Nagoya, Japan typhoon victims 30 September - 5 October, evacuating 4610 persons, delivering 148,000 pounds of supplies, inoculating 17,750 persons, and treating over 60 injured.[16]

U.S.S. JOHN S. MC CAIN (DL-3) visited Calcutta, India, and presented local authorities with $5,000 worth of medical supplies.[17]

1960: Following the 29 February earthquake at Agadir, Morocco the Navy was able to provide numerous medical teams and rescue parties (including the first outside help to arrive at the scene from Port Lyautey) as well as establishing the first outside communications (set up by a Navy ham operator). The U.S.S. NEWPORT NEWS (CA-148) was also sent to the area to deliver supplies. Overall, the Navy flew 136 flights from Port Lyautey carrying 350,000 pounds of cargo, 633 passengers, and 420 evacuees. Of 41 persons recovered alive from the ruins, 25 were flown to the Naval Hospital, Port Lyautey for treatment. A Navy Preventive Medicine Unit was sent from Naples to help prevent an epidemic. Cost of the operations was set at $60,468.19.[18]

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[14] Ibid., p. 5

[15] Ibid.

[16] Ibid., p. 6.

[17] Ibid.

[18] U.S. European Command, Annual Historical Report - 1960 (U), March 1961 (TOP SECRET), Appendix A, p. 4.

The U. S. S. KEARSARGE (CVS-33) rescued 4 Soviet soldiers adrift in an LCM about 1,000 miles northwest of Midway. They had been at sea some 49 days when found on 7 March.

U. S. S. TAUSSIG (DD-746) took the disabled Chinese Nationalist SS YUNGHSIN in tow of Taiwan on 1 February.[19]

U. S. S. TICGA COUNTY (LST-1158) rescued 9 Chinese Nationalist fishermen near Luzon on 2 February.[20]

Helicopters and boats of the U. S. S. GLACIER (AGB-4) aided flood victims at Fortaleza, Brazil, 2-13 April.[21]

U. S. S. YORKTOWN (CVS-10) helicopters rescued 54 crewmen of the British SS SHUNLEE aground on Pratas Reef on 8 June.[22]

The Navy leased 6 LCVP, 3 LCU, and 3 LCM plus spare parts to Chile for earthquake relief on 26 June.[23]

1961: On 19 April the U. S. S. STRONG (DD-758) brought 200 tents and a water tank (3,000 gal.) to Hodieda, Yemen, following a disastrous fire.[24]

Two Navy doctors and 3 hospitalmen were sent to Ethiopia to assist in fighting a yellow fever epidemic.[25]

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[19] Assistant Chief of Naval Operations (Op 90c), Summary of Naval Accomplishments, 3rd Quarter, Fiscal Year 1960 (U), 25 May 1960 (SECRET), p. 5.

[20] Ibid.

[21] Assistant Chief of Naval Operations (Op 90c), Summary of Naval Accomplishments, 4th Quarter, Fiscal Year 1960 (U), 31 August 1960 (SECRET), p. 5.

[22] Ibid., p. 6.

[23] Ibid.

[24] Commander in Chief, U. S. Naval Forces, Eastern Atlantic and Mediterranean, Annual Historical Report - 1961 (U), March 1962 (TOP SECRET), p. 11.

[25] Office of the Chief of Naval Operations (Op-007), Recent Achievements of the Navy: 1 February 1961 - 30 April 1961, p. 13.

In addition, Recent Achievements of the Navy contains descriptions of 8 rescues at sea, 29 humanitarian relief operations, and 13 good will missions carried out by the Navy during 1961. For example, good will cruise SOLANT AMITY III distributed 3000 tons of medical supplies, food, clothing and educational materials in Africa during 1961-2.[26]

1962: The U.S.S. STODDARD (DD-566) rescued the crew of the sinking Greek SS YANIX on 5 February.

On 10 February the U.S.S. CANBERRA (CAG-2) treated the ailing chief mate of the Turkish SS MEHMET IPAR after a rendezvous at sea.

On 17 February the U.S.S. MAUNA KEA (AE-22) rescued a number of fishermen adrift off Guam.

On 24 February the U.S.S. WOODPECKER (MSC-209) and WIDGEON (MSC-208) helped extinguish fire on Japanese tanker DAIYU MARU during an inland sea transit. Then WOODPECKER towed while WIDGEON took injured to Matsuyama.

On 1 March the U.S.S. ROBINSON (DDG-12) picked up survivors of SS MONARCH off Clipperton Is. (MONARCH sank on 2-6-62).

U.S.S. CORAL SEA (CVA-43) responded to call for medical assistance from SS ARTEMISION under adverse sea conditions on 27 March.

U.S.S. ST PAUL (CA-73) and U.S.S. CORAL SEA (CVA-43) aided injured seamen of the British SS CAPE CLEAR south of Honshu, Japan on 6 April.

On 15 April the U.S.S. DUXBURY BAY (AVP-38) extinguished fire on the Liberian SS THEOPAN in Beirut harbor.

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[26] Unless otherwise noted, all remaining cases are taken from the informal 3-month summaries titled, Recent Achievements of the Navy.

On 17 June the U. S. S. NEOSHO (AO-143) delivered 4,000 tents to Nemours, Algeria. Other tents were delivered by U. S. S. RANDOLPH (CVS-15) and U. S. S. FORT SNELLING (LDS-30).

Navy Preventive Medicine and Emergency Care Teams went to San Pedro Sula, Honduras to help combat epidemic gastroenteritis. $11,400 worth of medicine was used in this emergency and 1,600 additional pounds of supplies were required for subsequent menigitus outbreak.

In addition there were numerous good will visits and "People-to-People Program" operations in which food, clothing, medical supplies, and manpower for repair projects were furnished by naval units in situations not directly related to natural disasters.

1963: During 8-25 October the U. S. S. LAKE CHAMPLAIN (CVS-39), U. S. S. LIDDLE (APD-60), U. S. S. MULIPHEN (AKA-6) and U. S. S. THETIS BAY (LPH-6) participated in hurricane relief operations on Haiti and the Dominican Republic. Over 440 tons of supplies were delivered on this operation, plus some 1,500 passengers and evacuees were carried in the Navy helicopters which flew nearly 500 missions.[27]

In February the U. S. S. ALAMO (LSD-33) assisted flood victims in the Agusan River Valley, Mindanao, Philippines. In 38 helicopter lifts some 40 tons of food and emergency supplies were delivered.

On 1 February U. S. S. JOHNSTON (DD-821) rescued the crew of the Puerto Rican MV KIRKCO and towed the disabled craft to Mayaguez, P. R.

On 27 February an ill seaman was taken off the Danish SS NELLA DAN by the U. S. S. GLACIER (AGB-4).

U. S. S. MAUNA KEY (AE-22) rescued a 45-foot boat adrift 6 miles off Oahwon 27 February.

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[27] Commander in Chief, U. S. Atlantic Fleet, Annual Historical Report - 1963 (U), 20 April 1964 (TOP SECRET), p. 3; Recent Achievements of the Navy, ... op. cit., p. 6.

On 13 March the U. S. S. ALBANY (CG-10) gave aid to a poisoned seaman on the Norwegian SS JOTUNFJELL.

U. S. S. PRINCETON (LPH-5) and U. S. S. WEISS (APD-135) conducted a search and rescued some survivors of the Chinese Nationalist SS HAIZING on 29 March.

On 21 June the U. S. S. BUCHANAN (DDG-14) rendered aid to seamen on Chinese Nationalist SS FU YUN.

The U. S. S. CORAL SEA (CVA-43) located lost Norwegian yacht CYTHERA 87 miles east of Sidney, Australia, on 10 May.

On 28 May the U. S. S. HENRICO (APA-45) rescued a number of fishermen adrift in Taiwan Strait.

On 21 July the U. S. S. PERRY (DD-844), U. S. S. FARRAGUT (DLG-6) and U. S. S. WASP (CVS-18) participated in treatment of injured Norwegian seamen from the SS SAN JUAN.

Navy doctors were flown to Katmandu, Nepal, for treatment of two Everest climbers suffering from frostbite.

The U. S. S. VOGELGESANG (DD-862) rescued 4 men in open boat off Trinidad in August 1955.

The U. S. S. DUNCAN (DDR-874) sent a doctor to aid the master of the tug SEA RANGER off coast of Okinawa on 14 August.

The U. S. S. VANCOUVER (LPD-2) towed fishing vessel MISS FLORIDA to Acapulco, Mexico, on 26 August.

On 30 September the U. S. S. WASHOE COUNTY (LST-1165) rescued crew of Japanese fishing vessel near Miyuko Island.

On 21 October the U. S. S. CONE (DD-866) rescued 10 Indians off a barge adrift in the Indian Ocean.

1964: On 1 January the U. S. S. CONSERVER (ARS-39) floated stranded PPS ISABELLA with assistance from U. S. S. COCOPA (ATF-101) near Port Carreniaio, Luzon, Philippines.

U.S.S. MITCHNER (DL-2) aided in firefighting on a 65-foot Breek inter-island schooner at Volos on 9 July.

The U.S.S. SPRINGFIELD (CLG-7) assisted fighting brush fire near Villefranche, France, in July.

On 26 November helicopters from HU-2 and 4 assisted in the rescue after SHALOM-STOLT DAGALI collision off N.J. coast.

On 23 March helicopters from the U.S.S. GUADALCANAL (LPH-7) rescued 10 persons injured in an accident in the mountains near Iquitos, Peru. During November Task Force 76 (amphibious force) provided disaster relief for flood victims in the Republic of Vietnam. U.S.S. PRINCETON (LPH-5) with HMM-162 (heavy marine helicopter squadron) delivered:

> 1300 tons of relief supplies to Quang Tri,
> Quang Hgai, and Binh Dinh Provinces.
> PRINCETON supplied 40,000 loaves of bread.

In late December the U.S.S. BENNINGTON (CVS-20) with HMM-163 aided flood victims in Oregon and Northern California with evacuation and the supply of 161,000 tons of emergency provisions.

Following the Alaskan earthquake on 28 March the Navy assisted in restoring power with portable generators for emergency power and connecting ships power systems to feed electricity as well as steam into the damaged area.

On 10 April, after 10 days of effort in Alaska, the Navy's contribution totaled:

1. 1,135 Navy personnel expended 109,374 MH of work.
2. 5 Navy aircraft logged 1,428 hr.
3. Navy small craft logged 1,428 hr.
4. Navy vehicles operated 1,900 hr.

5. $6,000 of food, clothing and rations were issued including 540 blankets, 230 mattresses, 185 sleeping bags.

6. 512 persons were evacuated (279 billeted at Naval Station Kodiak, with 279 flows to Elemendorf AFB, and 211 flown to Seattle, Washington).

7. Drydock supplied to repair fishing fleet, and salvage started for sunken craft.

U.S. NAVY GOOD WILL OPERATIONS[1]

1962: 2/16/62 - U.S.S. BOSTON (CAG-1) erected playground equipment and distributed clothing at Barcelona school.

2/16-17/62 - U.S.S COOK (APD-130) with COMUS NAV FOR PHIL embarked. Attended the first Fil-Am Fiesta at Sagay, Camiguin Island, Philippines. School books and vitamins were given away.

2/24-25/62 - U.S.S. FORRESTAL (CVA-59) donated blood and constructed operating room for rural hospital on visit to Port-au-Prince, Haiti.

2/28-3/2/62 - U.S.S. HIGBEE (DDR-806) hosted orphan party, etc., in Rangoon.

1963: Self-propelled water barge, YW-122, leased to Peru for coastal delivery of water to dry areas in early 1963.

2/63 - U.S.S. RANGER (CVA-61) crewmen contributed $500 for education fund of Sasebo Rotary Club.

AVENTINOS (ARVE-3) aircraft engine repair ship (ex. LST), and POTAWATOMI (ATF-109) leased to Chile for civic action activity.

NAMRU 2 set up laboratory in Manila to assist in study and treatment of cholera (4th time this has been done in P.I.). Research also conducted in Thailand, Taiwan, Borneo, and Malaya. Unit is noted for its study of Japanese encephalitis and other Far Eastern diseases.

6/13-19/63 - U.S.S. CORAL SEA (CVA-42) contributed 256,500 gallons of water to Hong Kong during shortage.

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[1] The operations listed here do not all neatly fit in the category of "good will," but since they did not qualify as emergency relief and are a special form of humanitarian operation they form a separate category headed "good will."

Unless otherwise noted, all cases were taken from the CNO informal quarterly summaries, Recent Achievements of the Navy.

10/4-6/63 - U.S.S. LITTLE ROCK (CLG-4) donated blood and painted district hospital on visit to Famagusta, Cyprus.

10/1-7/63 - U.S.S INDEPENDENCE (CVA-62) constructed concrete road and playground at Arab refugee compound and repaired and painted orphanage while in Beirut for an operational visit.

11/24-12/1/63 - U.S.S. STRONG (DD-758) with Iranian Naval Ship BARR carried out joint civic medical action mission visiting Chahbar, Jask, and Bandar Abbas with 2,335 patients treated, HANDCLASP and CARE materials delivered, X-ray machines and air conditioners repaired in Bandar Abbas, and a hospital and girls high school refurbished.

11/8-12/63 - U.S.S. REHOBOTH (AGS-50) visited Nakhodka, Siberia.

1964: 1/1-4/30/64 - Navy ships gave 3,243,688 gallons of water to Hong Kong.

2/25-3/2/64 - U.S.S. BACHE (DD-470) visited small Iranian coastal town distributing Project HANDCLASP materials and medical supplies.

3/6-9/64 - 6th Fleet personnel donated 193 pints of blood to Istanbul. U.S.S. FARRAGUT (DLG-6) put on party for 57 crippled children. FARRAGUT and U.S.S. ENTERPRISE (CVAN-65) played soccer with local boys home. U.S.S. SPRINGFIELD (CLG-7) put on childrens party. Bands played concerts at 3 colleges.

3/17-23/64 - U.S.S. ALBANY (CG-10) put on childrens party and repainted dorm at Naples crippled childrens home.

3/8/64 - U.S.S. PROVIDENCE (CLG-6) received 19,000 visitors at Keelung, Taiwan.

3/5-9/64 - U.S.S. BACHE (DD-470) donated blood at Karachi, Pakistan, at request of anti-American paper Hurrijit (event covered in paper).

5/24-29/64 - U.S.S. DUXBURY BAY (AVP-38) and U.S.S. TURNER (DDR-834) hosted local blind children and orphans in Karachi, Pakistan. Repaired and painted two childrens homes and also distributed HANDCLASP materials and donated blood.

6/2-8/64 - DESRON 10 (DD-850 and 853) renovated orphanage at Naples.

7/22-24/64 - U.S.S. OKLAHOMA CITY (CLG-5) visited Saigon and distributed HANDCLASP materials.

1965: Atlantic Fleet maintained ten STATS with language capability of: 4 French, 4 Spanish and 2 English; and deployed as follows:

1 in Santo Domingo for equipment mechanic school and power line operation.

3 in Cartago, Costa Rica, for flood control measures work (terminated 3-65).

1 at Guantanamo for training Cuban exciles.

1 in Liberia for training construction workers and road building.

1 in Chile for support of Naval Arsenal construction.

3 in Germany for debugging Eastern European embassies.

1 in Azores for construction of earthquake emergency shelters.

1 in Central African Republic for equipment operations in highway construction.

Pacific Fleet maintained seven STATS with four deployed in RVN and three in Thailand.

Navy work in Laos involved construction projects worth $160K. Navy responsible for POL needs in Laos.

7/1/65 - Projects STORMFURY - Navy announces continued seeding of hurricanes and cumulus clouds in conjunction with Weather Bureau and Department of Commerce.

MISCELLANEOUS U.S. PACIFIC COMMAND ACTIVITY

A. Miscellaneous civic affairs notes[1]

1. A joint Canadian - U.S. oceanographic and hydrographic expedition was carried out in the Arctic Sea from July through September 1954 (p. 17).

2. Activity related to administration of Pacific trust territories: (p. 79)

   a. Land claim settlements on Saipan.

   b. Homestead program instituted for landless farmers on Saipan.

   c. A new hospital was established and a tubercular survey was conducted on Saipan.

   d. Assistance was provided the natives of Chichi Jima for the construction of new homes.

   e. Chichi Jima criminal code was revised by CINCPAC.

   f. A cooperative store was established on Chichi Jima.

3. A symposium on typhoons was held in Tokyo under sponsorship of UNESCO with USN participation. Naval patrol aircraft carry out typhoon reconnaissance in the Pacific.

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[1] Command in Chief, U.S. Pacific Fleet, CINCPACFLT Annual Report, Fiscal Year 1955 (U), (SECRET)

APPENDIX E

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Interviews were conducted at CNO (Op 61), OSD (ISA), CIA and DIA.