AD-A012 805

QUANTITATIVE INDICATORS FOR DEFENSE ANALYSIS

Bertram I. Spector, et al

CACI, Incorporated - Federal

Prepared for:

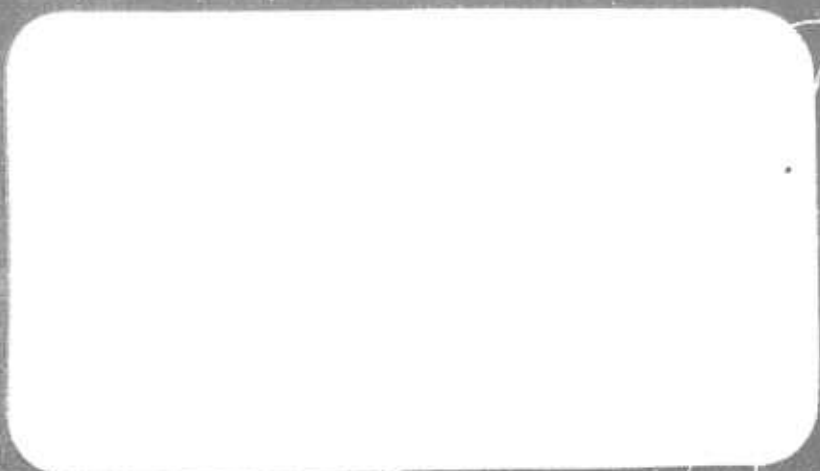Defense Advanced Research Projects Agency

June 1975

CONSOLIDATED ANALYSIS CENTERS INC.

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)	2a. REPORT SECURITY CLASSIFICATION
CACI, Inc.-Federal 1815 North Fory Myer Drive Arlington, Virginia 22209	UNCLASSIFIED
	2b. GROUP

3. REPORT TITLE

Quantitative Indicators for Defense Analysis

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Final Report

5. AUTHOR(S) (First name, middle initial, last name)

Bertram I. Spector   Gary A. Keynon
James R. Brownell, Jr.   James A. Moore
Margaret Daly Hayes

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
June, 1975		

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
MDA 903 75 C 0013	
b. PROJECT NO. ARPA Order #2873	
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	

10. DISTRIBUTION STATEMENT

Open

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
	Advanced Research Projects Agency Human Resources Research Office 1400 Wilson Boulevard Arlington, Virginia 22209

13. ABSTRACT

This report develops and demonstrates various means of using quantitative indicator technology in analyzing and predicting future international trends. Three generic types of indicators were created to enhance the analysts abilities to estimate future international interaction trends: international, internal, and economic. Issue content, intensity of participation, behavioral tone, and other types of indicators were used. Two innovative methodologies were devised to help the policy analyst: Event Patterning for Decision Analysis which combines usually and statistically the attributes of interactive tone, intensity, and time; and Power Strategy Impact Analysis, involving aspects of power strategies in statistical analyses of interactive tone over time. The results were a number of techniques of potential use to the analyst of international behavior.

DD FORM 1473
NOV 65

PRICES SUBJECT TO CHANGE

i

KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Prediction of International Behavior						
Quantitative Analysis						
Event Data Methodology						
Japan						
International Power Strategies						
Patterning of Event Data						

FINAL REPORT

QUANTITATIVE INDICATORS FOR DEFENSE ANALYSIS

Sponsored by:

Defense Advanced Research Projects Agency

ARPA Order No. 2863

The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Defense Advanced Research Projects Agency or the U.S. Government.

PROJECT PARTICIPANTS

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

APPENDIX

LIST OF FIGURES

CHAPTER 3

CHAPTER 4

CHAPTER 6

CHAPTER 1
GENERAL ASSESSMENT OF RESEARCH ACCOMPLISHED

1

GENERAL ASSESSMENT OF RESEARCH ACCOMPLISHED

GENERAL OBJECTIVES

This final report describes research efforts undertaken by CACI, Inc., to develop and apply quantitative indicators to national security problems. The overall objective is to demonstrate the value of quantitative indicator technology in assisting the defense and intelligence communities in predicting future international trends with greater accuracy. Toward this end, priority is given to the development of new indicators of potential use to intelligence analysts and national security policy-makers, especially in the areas of international issues, economic policy, and international/internal event linkages; new "barometer" and probability measures that forecast shifts in future international behavior; and new methods and techniques for predicting the probability of future international interaction. These technical advancements are applied to an area of national security interest, Japan, to assess their potential contributions to policy planning.

SUMMARY OF RESEARCH ACCOMPLISHMENTS, PRODUCTS, AND FINDINGS

The accomplishment of these research objectives has yielded several advances in the development and use of quantitative indicators. A summary list of these accomplishments is presented in Table 1.

Three generic types of indicators were created to enhance the analysts' abilities to estimate future international interaction trends: international, internal, and economic indicators. New international indicators were designed to measure:

- The issue content of international behavior,
- The average tone of international signals,

2

TABLE 1

Summary of Major Accomplishments and Products

A. New Indicators Developed

    1. International Indicators
       a. Issue Area Indicators
       b. Behavioral Tone Index
       c. Dyadic Intensity Index
       d. Power Strategy Indicators

    2. Internal Indicators
       a. Domestic Issue Area Indicators
       b. Behavioral Tone Index (for various government and non-government dyads)
       c. Public Approval/Disapproval Indicators

    3. Economic Indicators
       a. Indicators of International Economic Position
       b. Indicators of Current Economic Conditions
       c. Leading Economic Indicators

B. New Indicator Methodologies Developed

    1. Event Patterning for Decision Analysis
    2. Power Strategy Impact Analysis

C. Data Collected

    1. International and Internal Event Data on Japan, January 1972-July 1974
    2. Japanese Public Opinion Poll Data, May 1970-December 1974
    3. Japanese Economic Data, July 1971-July 1974

D. Data Management System Developed

    1. PULSE System

E. Prediction Models Applied

    1. Issue Area Prediction Models
    2. Event Patterning Models
    3. Power Strategy Impact Models
    4. Internal Prediction Models
    5. Economic Prediction Models

F. Research Findings Disseminated

    1. Paper on Event Patterning for Decision Analysis presented at the Annual Meeting of the Peace Science Society (International), Southern Section, April 4, 1975.
    2. Incorporation of Event Patterning Methodologies in an ARPA-Supported Project on Soviet Perceptions at CACI.

3

- The intensity of participation in dyadic interaction in relation to an expected normal frequency level, and

- The intention of nations to influence the goals and behavior of other nations by the use of power strategies.

Internal indicators were constructed to measure:

- Domestic issue content of events,

- The behavioral tone of bureaucratic, intra-governmental forces, as well as political parties and economic interest groups, and

- Popular approval and disapproval of government positions and performance.

Also, a set of relevant economic indicators were formulated that tap concurrent and leading international and internal economic phenomena:

- Indicators of international economic position,

- Indicators of current economic conditions, and

- Leading economic indicators.

Two innovative methodologies were devised to help the policy analyst track the flow of international dyadic interaction and forecast the probability of future interaction potentials. The first, Event Patterning for Decision Analysis, is a highly visual as well as statistically oriented technique that facilitates analytic identification, interpretation, and prediction of behavioral trends and changes in trends by combining the attributes of interactive tone, intensity, and time. This methodology was introduced to the research community in a paper, "The Effects of Issue Area on Dyadic Interaction: An Application to Japan, 1972-74," presented at the annual meeting of the Peace Science Society (International), Southern Section, on April 4, 1975. It has also been incorporated in the analysis of a current CACI project on Soviet perceptions under contract with ARPA.

4

The second methodology, a Power Strategy Impact Analysis, provides a quasi-experimental action-reaction structure for the predictive analysis of international response patterns. Both of these techniques can yield barometer and probability measures of potential shifts in dyadic behavior trends.

The final aspect of the research effort coordinated the newly developed indicators and indicator methodologies in several applications to assess their utility to the defense and intelligence communities. Event data were collected on Japanese international and internal interactions for the period 1972 to 1974, and non-event data were collected from public opinion and economic sources for the same period to enable these advancements to be tested in an area of national security interest. In addition, an integrated system of computer programs, the PULSE system, that can manipulate the data to form several indicators was developed.

Two types of findings resulted from these applications, the first concerning the value of the new indicators and indicator methodologies to aid the national security policy decision process, and the second concerning the interactive area of focus--Japan's international behavior. The most important of these findings are as follows:

Major Findings Concerning New Indicator Technology

- Increased descriptive subtlety, analytical interpretation, and predictive accuracy can be obtained by monitoring the issue content of international trends instead of employing flows of overall behavior. (Chapter 5)

- Issue area monitors of behavior received are useful predictors of reciprocated behavior sent in the same issue area. (Chapter 5)

- Event patterning techniques provide the policy analyst with effective and efficient methods for predicting the probability that future international dyadic behavior will fall in the normal range of relations, will be part of an issue-specific critical pattern away from the norm of relations, and will be characterized by particular behavioral traits such as direction and extent. (Chapter 6)

5

- Event patterning analyses also provide a useful framework for predicting reciprocal behavioral trends between nation pairs with and without a response·lag. (Chapter 6)

- Power strategy indicators and Power Strategy Impact Analyses assist the defense and intelligence communities in identifying power strategies that have been successful and unsuccessful for a nation attempting to influence the behavior and goals of another nation. They also provide probabilities of future strategy effectiveness in causing certain types of response behaviors by other nations along various issue areas. (Chapter 7)

- Internal behavior indicators monitored by issue content and domestic actor-target dyads provide greater predictive capability of international behavior trends than measures of overall internal behavior. (Chapter 8)

- Economic indicators are powerful short-term predictors of international behavior on economic and non-economic issue areas, usually with a lead factor of four to six months. (Chapter 9)

Major Findings Concerning the Prediction of Japan's International Behavior

- Japan's behavior toward the United States during the time period examined is slightly more conflictual than its interactions with the Soviet Union, the People's Republic of China, or the aggregate of Asian nations. (Chapter 5)

- Japan's international interaction with particular nations on economic issue areas such as trade and resource dependence is much more predictable than its behavior on other issues, although they are all tangentially affected by Japanese economic objectives. Japan tends to respond to friendly behavior on economic issue areas with even more intensely cooperative behaviors. Japanese responses to all other international issues are less intense, though cooperative. This tends to affirm Japan's concerted international policy of maintaining a low and non-intense posture on diplomatic and military concerns, while aggressively pursuing economic and commercial ties. (Chapter 5)

- When issues become salient, particularly those dealing with political-military security, Japanese international behavior appears to be a good predictor of the target's responsiveness. Thus Japan's initiatives toward the United States on political-military security issues tends to lead U.S. responses by one to four weeks and predicts fairly well the tone and intensity of the U.S. response. (Chapter 6)

- Third party interactions between the United States and Japan predict the emergence of political-military dialogue between the Soviet Union and Japan. When problems arise in the U.S. - Japanese alliance, the Soviets tend to increase their cooperative strategies toward Japan. (Chapter 6)

- Promise and material support strategies exercised by the United States predict increases in Japanese cooperation toward the United States. However, the use of punitive power strategies by the United States results in high probabilities of hostile responses by Japan. These findings, especially concerning trade interactions, suggest the gradual disappearance of U.S. hegemony over Japanese policy-making. Given these results, two potential paths for maximizing U.S. national security interests in Japan are presented. (Chapter 7)

- Japan's dominance over policy-making in Asian nations is affirmed by the Power Strategy Impact Analysis. Asia's subordination to Japanese national interests is emphasized by the high probability of favorable response that is elicited regardless of whether rewarding or punitive power strategies are initiated by Japan and targeted at Asia. However, there appear to be trends visible in the analysis that indicate growing Asian resistance in response to fears that Japanese economic leadership in Asia might again lead to political and military domination. (Chapter 7)

- Japanese international behavior can be better predicted by the institutionalized influences of political parties and government bureaucracy than by changes in public opinion patterns. The salient internal issues that exert the most influence on shifts in Japanese international interaction relate to economic questions. (Chapter 8)

- Decreases in Japanese cooperation toward the United States can be predicted in part by increases in exports to the Soviet Union. Normalization of relations with the Soviets appears to have negative impacts on Japanese-U.S. relations, especially on political-military security issues. (Chapter 9)

PROJECT TASKS

The tasks performed by CACI in this study are as follows:

A. UTILITY OF NEW INDICATORS

7

Task 1A. The Contractor, in agreement with the Technical Monitor, shall determine geographic areas of focus--single countries, dyads, or regions-- to provide the basis for data collection for the new indicators.

Task 2A. The Contractor shall develop additions or modifications to the current event-coding system in order to provide bases for the several new indicators.

> Subtask A. The Contractor shall develop statements of important issues for government(s) in the area of focus.
>
> Subtask B. The Contractor shall review economic event and non-event elements of the current coding system to determine if any modifications or additions are required.
>
> Subtask C. The Contractor shall review the internal event coding system to determine if any modifications or additions are required.

Task 3A. The Contractor shall code event data for a selected area by the coding system determined in Tasks 1 and 2 above, and enter the data into computer files.

Task 4A. The Contractor shall develop issue, internal, and economic indicators that shall be used in subsequent analyses to determine whether these indicators can predict other nations' behavior. (This task should take into account the initial efforts in these three fields undertaken by CACI in FY 74.)

Task 5A. The Contractor shall develop programs for manipulating event data to produce the new indicators.

Task 6A. The Contractor shall analyze the predictive contribution of the new indicators in the following subtasks:

> Subtask A. Test for differences in model structures and parameters across issues and issue areas.

Subtask B. Test for the contribution to prediction made by internal indicators in several models, especially seeking causal linkages between internal and international events and trends.

Subtask C. Formulate and test a model of economic linkages to the foreign policy and behavior of Japan.

Task 7A. The Contractor shall include in the final contract report a description of the several indicators used and a discussion of their values.

B. DECISION ANALYSIS

Task 1B. The Contractor, in agreement with the Technical Monitor, shall select two dyadic relations on which to focus analysis. After selecting the dyadic focus, the Contractor shall review and assemble indicator data from existing CACI data files.

Task 2B. The Contractor shall attempt to restructure the policy style indicator so that it becomes a "barometer" of shifts in future dyadic relations.

Task 3B. The Contractor shall construct probability measures suitable for forecasting changes in behavior.

Task 4B. The Contractor shall carry out a test of the probability measure in each of the dyads under analysis.

Task 5B. The Contractor shall include in the final contract report a presentation of the findings accomplished in Task B.

C. UTILIZATION

Task 1C. The Contractor shall encourage the dissemination of its own and other research findings in the field of quantitative indicators and decision analysis by means of meetings, seminars, and circulation of publications.

9

ACCOMPLISHMENT OF TASKS

Each of these tasks has been addressed and accomplished in the following manner.

Task 1A. In agreement with the Technical Monitor, Japan was chosen as the geographical area of focus.

Task 2A. Current event and non-event coding systems were reviewed, and additions and modifications were made to increase the sensitivity of the resultant data bases.

Task 3A. Event and non-event data on Japan were collected for the period January 1972 to July 1974. Computerized data files were created for easy access.

Task 4A. Four types of international indicators including issue indicators, three types of internal indicators, and three types of economic indicators were developed as the basic set of quantitative measures for use in subsequent analyses.

Task 5A. A system of computer programs, the PULSE system, was devised to manipulate event data to produce several indicators.

Task 6A. CACI performed six separate analyses to evaluate the predictive capabilities of the new indicators and indicator methodologies developed.

Task 7A. Descriptions of the indicators, methodologies, and applications performed in Tasks 1A-6A are included in the various chapters of the final report that follows.

Task 1B. In accordance with Modification Number P00001 of this contract, which reduced the amount of effort programmed for decision analysis, this task was not accomplished.

Tasks 2B and 3B. The Event Patterning for Decision Analysis methodology was developed as a "barometer" measure of shifts in dyadic interaction. The Power Strategy Impact Analysis also provides a methodology that yields probability measures to aid in the prediction of behavioral changes. With reference to Modification Number P00001 of this contract, full accomplishment of these tasks was not achieved.

Task 4B. In accordance with Modification Number P00001 of this contract, which reduced the amount of effort programmed for decision analysis, this task was not accomplished.

Task 5B. The results accomplished in Tasks 2B and 3B are presented in various chapters of the final report that follows.

Task 1C. A paper entitled, "The Effects of Issue Area on Dyadic Interaction: An Application to Japan, 1972-74," was presented at the annual meeting of the Peace Science Society (International), Southern Section, on April 4, 1975, in order to disseminate research developments in quantitative indicators. The Event Patterning for Decision Analysis methodology is currently being incorporated in an ARPA-supported project on Soviet Perceptions being conducted by CACI. In addition, a top secret document entitled, "Working Papers on Crisis Management" (CACI DC-227) was written and delivered to Dr. R. A. Young on April 22, 1975, in fulfillment of this task.

ORGANIZATION OF THIS REPORT

This final report is organized into nine chapters plus an appendix. The following list of chapters coordinates the sections of this report with the fulfillment of the various tasks in the contract.

Chapter Description	Task Fulfilled
1. General Assessment of Research Accomplished	7A, 5B, 1C
2. Data Base Description	
a. Japanese International Behavior	1A
b. Data Collection and Preparation	2A, 3A, 5A
3. New Indicator Development	
a. Issue Indicators	4A
b. Behavioral Tone Index	4A, 2B
c. Dyadic Intensity Index	4A, 2B
d. Power Strategy Indicators	4A, 2B
e. Internal Political Indicators	4A
f. Economic Indicators	4A
4. New Indicator Methodologies Developed	
a. Event Patterning for Decision Analysis	6A (Subtask A), 2B, 3B
b. Power Strategy Impact Analysis	6A (Subtask A), 2B, 3B
5. Issue Prediction Models of Japanese International Behavior	
a. Issue Area and Dyadic Dimensions of Japanese International Behavior	6A (Subtask A)
b. The Importance of Issues and Context in Predicting Japanese International Behavior	6A (Subtask A)
6. Application of Event Patterning for Decision Analysis	6A (Subtask A)
7. Application of Power Strategy Impact Analysis	6A (Subtask A)
8. Internal Prediction Models of Japanese International Behavior	6A (Subtask B)
9. Economic Prediction Models of Japanese International Behavior	6A (Subtask C)
Appendix	
a. Codebook	2A
b. Statements of Important Issues for Japan	2A
c. PULSE User's Manual	5A
d. Factor Matrices of Japanese Issue Area and International Dyadic Interaction	6A (Subtask A)

CHAPTER 2
DATA BASE DESCRIPTION

Japanese International Behavior
Data Collection and Preparation

The primary characteristics of the dyads that are the focus of this study are conditioned by the status of Japan as a generally low profile participant on the international scene. These dyads thus tend to provide a basis for analyzing "moderation in relations," to the extent that such a generic condition exists. Students of Japanese behavior frequently characterize Japan as having a very pragmatic international style. Because of its unique position as an insular, industrial nation, Japan must import nearly all of its raw materials. To maintain present levels of economic growth and standard of living, Japan must assure itself of a constant and even increasing supply of raw materials. In turn, it relies on exports for foreign exchange with which to pay for these. Among the manifestations of Japan's fundamental resource dependency is that in the past, it has pursued almost exclusively only those external goals

> ...that are susceptible to the kind of rational calculation of rewards commonly associated with economic problems. Even on issues such as recognition of China, where the Japanese could have exercised political initiatives without seriously jeopardizing their basic alliance with the West, nothing was done. Yet, Japan is not just conducting a calculated pursuit of limited goals. Having abandoned the military dimension of diplomacy, whenever possible, it has made a further effort to separate politics from economics. By restricting activities and defining aims in narrowly economic terms, the Japanese have not only minimized the risks inherent in international political actions, they have also developed a foreign policy more like that of a trading company than a nation. Undeniable benefits have resulted from this highly prudential, essentially non-political posture, but this very success will hinder the realistic acceptance of Japan's inevitably expanding role. Perhaps the most damaging legacy is the persistent illusion that the economic, political, and military dimensions of foreign policy are not interdependent and can be dealt with in discrete fashion (Hellmann, 1972: 8).

14

Another commentator has noted that Japan's external behavior may be char-
acterized as "the pursuit of a diplomatic policy of being friendly with
everybody, or at least not making serious enemies anywhere" (Okita, 1974:
723). As a consequence, Japanese international interactions are (1) exten-
sive, covering nearly all nations of the globe, (2) intensive at certain
times, particularly when important markets or supplies are threatened (as
when the United States sought restrictions on Japanese cotton goods imports
or imposed an embargo on soybean exports, or when the Arab oil embargo
threatened Japan's industry), and (3) infrequently, extreme in tone. In
addition, most scholars concur in the assessment that Japanese policy,
since the World War II period, has been largely reactive, rather than
active (Tsurutani, 1974). That is, Japan has responded to events or ini-
tiatives of other nations, rather than pursuing its own, independently
defined approach.

This pattern may still be the dominant characteristic of Japanese inter-
actions. However, there are several indications that, in response to the
changing world economic and political balance, recent Japanese governments
have sought to identify and act upon a set of goals that make explicit
both what has been implicit policy to date and new, more active independent
policies for the future. Among the important issues which Japanese policy-
makers are considering are: the redefinition of Japan's relations to the
Soviet Union, the two Koreas, and the two Chinas; the modification of polit-
ical, economic, and military relations with the United States; and a more
active role for Japan in the effort to develop Third World resources and
markets in general, and particularly in Southeast Asia (Wakaizuma, 1974).
The primary underlying concern in each of the policy areas is economic.
Japan is seeking to redefine relations with other nations in directions
which will guarantee an uninterrupted flow of resources to the home economy.

These economic efforts have important implications for Japan in other issue
areas and make it probable that future Japanese behavior will be a consid-
erably more complex mixture of political, military, and economic interests
than has been the case in the past. One of the first manifestations of
Japan's new efforts has been the change in relations with the United States.

15

Efforts to achieve rapprochement with the Soviet Union and China have meant that Japan has had to move out from under the U.S. political and military umbrella and assume a more independent and non-aligned political posture. This projected, increasingly active role in Southeast Asia, especially should U.S. interest in the area decline, implies to many that Japan will have to reevaluate its own military role and capabilities (Hellmann, 1972).

The Japanese are conscious of the fact that their efforts to move out of the shadow of the United States can have far-reaching implications for relations with other partners. The success of Japan's moves on the economic front is in part dependent upon the maintenance of the politico-military status quo in Asia. A warming of Sino-Soviet relations might cause Japan to think more seriously about rearmament, or closer military relations with the United States. Either alternative would inhibit Japan's efforts to become economically involved in Siberian or Chinese development and would close Soviet and Chinese markets to Japanese products.

Similarly, a substantial lessening of U.S. interests in Southeast Asia would leave Japan as the sole economic power in Asia. Japan's efforts to expand activity in Asia have been very cautious. A major trading partner of most Asian countries, Japan has been careful to dissociate political interests from economic ventures. The expansion of Japanese economic penetration in Asia has, nevertheless, been regarded with hostility by the less economically powerful countries there. They frequently equate Japanese economic power with Japanese military domination before and during World War II, as the Japanese were sharply reminded when Prime Minister Tanaka was greeted by demonstrating mobs during recent visits to Southeast Asian capitals.

In addition to these international economic and political considerations, the domestic political environment provides a certain impetus for policy changes toward Japan's traditional friends and enemies. Vocal Socialist and Communist parties within Japan have long argued for a diminution of economic and political ties with the United States and for rapprochement with China and the Soviet Union. Recent events closely tied to global

16

economic trends have made these opposition arguments more palatable to the Japanese leadership. Moreover, these same events have reduced overall popular support for the traditional ruling Liberal-Democratic party, with the result that opposition forces have greater voice in the Japanese Parliament, and prime ministers now must be more responsive to public and party opinion. Both domestic economic conditions and domestic political forces are more likely to influence Japan's international behavior now than ever before.

In spite of political changes occurring within Japan, it must be remembered that the bureaucracy and ruling conservative coalition remain the most important forces in Japanese international policy decisions. There may be dialogue between government and opposition forces, but government positions are likely to prevail in final decisions. These decisions are likely to be conservative, even when they represent change, and heavily biased toward maintenance of status quo relations.

Because Japan has very clear interests in its relations with the United States, the Soviet Union, China, and Asia, we have chosen to concentrate on these dyads. This brief introduction barely does justice to the highly complex subject of Japanese relations with these countries. Hopefully, however, it indicates some of the dimensions along which Japanese interactions can be expected to move.

A number of characteristic behavior patterns that are reflected in the literature on Japanese interactions with the United States, the Soviet Union, the People's Republic of China, and the Asian bloc of nations may be summarized as follows:

1. Japanese efforts to move out from the U.S. politico-military umbrella should be manifested by (a) greater Japanese activity toward other actors, and (b) cooling of the quality of relations with the United States. The major bone of contention between the United States and Japan should be the issues of trade and U.S. military presence in Japan.

17

2. Japanese international behavior will mainly involve
   economic questions. It is anticipated that Japanese
   diplomatic activities will concentrate in areas where
   Japan has economic interests.

3. Domestic economic conditions are likely to have a sharp
   impact on the quality of Japan's relations with other
   countries causing it to be more positive with countries
   that have natural resources and untapped markets and
   more negative with countries that are perceived to be
   responsible for domestic economic hardship.

4. Japanese international behavior is largely pragmatic
   in tone. Japan's habit of "seeking friends anywhere"
   will mute its responses to political rebuffs from
   other nations. Japan may retire from the arena of
   interaction, or respond with brief, intense activity
   designed to moderate a critical situation; but rarely
   would it respond with hostility.

5. Japanese international behavior is likely to be dominated
   by conservative, bureaucratic concern. The major actors
   influencing international policy should be the govern-
   ment bureaucracy and ruling Liberal-Democratic party
   leaders. The major themes of domestic dialogue on inter-
   national policy are likely to be economic conditions and
   opposition programs for greater political interaction
   with China and the Soviet Union.

6. Japan is a power of substantial economic and political
   importance to Asian countries and the People's Republic
   of China. The relationship between these actors (except
   the PRC) is one of dependence, with Japan the dominant
   power. Japan is an important power to the Soviet Union
   because of its economic and technological capabilities
   and because of its relations both to China a· the United
   States. In spite of the power differential l_tween these
   two countries, the Japanese-Soviet relationship is not
   necessarily one of dependence, because of the balancing
   of U.S. guarantees of military security to Japan and
   Japan's potential for contributing to Soviet development.
   Japan is clearly the subordinate power in the U.S.-Japan
   relationship, being dependent both upon U.S. military
   guarantees and U.S. trade. Japan is uncomfortable in this
   dependency relationship and has made several cautious
   efforts to alter it. These "counterdependent" (Singer,
   1972) efforts may be manifested in sporadic negative
   behavior toward the United States. Japan's relations
   with the United States are mirrored by Asia's relation-
   ship to Japan; thus counterdependent negative behavior by
   Asian countries is an hypothesized pattern.

DATA COLLECTION AND PREPARATION

Japanese interactions with other nations define the geographic areas of focus in this study. Only the most active dyadic pairs were analyzed. They include Japan's interactions with:

1. The United States

2. The Soviet Union

3. The People's Republic of China

4. Asian Countries (all nations excluding the PRC)

In addition, behavior sent and received by Japan to and from all other nations taken as an aggregate was examined.

EVENT DATA COLLECTION

Behavior is defined in terms of _events_ which have the following characteristics: "on a specific _date_ a specific _actor_ directs an _activity_ toward a specific _target_ regarding an _issue_ of mutual concern" (Azar, 1972). International event data on behavior received and sent by Japan between January 1972 and July 1974 were collected. Domestic event data were also collected for the same time period. A single source was used for this collection process, the _Foreign Broadcast Information Service_ (FBIS) _Daily Report for Asia and the Pacific_, which yielded 6940 discrete international events and 3668 discrete internal events.

The events were classified according to the categories of the Defense Events Coding Scheme (DECS). An evaluation of the existing system was undertaken and as a result certain modifications were made in the DECS codes to enable more sensitive categorization of behavioral events. All of these changes have been footnoted in the revised codebook that appears in the Appendix.

Modifications to the International Actor/Target Codes

Particular non-governmental actors and targets were added to enable classification of particularly important Japanese interactions. The Khmer Rouge and multinational corporations were among these new categories.

Modifications to the Subnational Actor/Target Codes

Political party factions play a large role in Japanese domestic politics. However the DECS system did not provide for their coding. New classifications for left and right party factions were added to capture this information.

Modifications for the Event Codes

A new class of events were collected and coded based on an addition to the DECS event character code. Coding of data through December 1973 includes only events that actually occurred. Data from January 1974 on, however, include events that were mentioned or announced in FBIS reports but which had not yet actually occurred. This new class of "rumored" events is a verbal category for domestic and international activity. They are coded identically to actual events, but receive a different "character" code. Rumored events can be considered potentially important predictors of upcoming actual events; they are comparable to "leading indicators" in economics. Often they serve as the catalysts or molders of actual events in the future.[1]

Several new event activity codes were added to the DECS system to differentiate between the positive, negative, and neutral intentions of particular actions. Also, several new domestic actions were included.

---

[1] None of the rumored events coded were included in the analyses that follow in this report because of the limited time span for which the data were collected.

Modifications to Issue Codes

The issue codes established in 1974 for Japan were judged to be ineffi-
cient in capturing the substantive content of events. Only about one-
third of all events could be coded into an existing issue category,
fundamentally because they are phrased in excessively specific language.
Such specific issues are temporal and do not reveal the overall bureau-
cratic task dimensions with which issues are concerned. Thus new issue
codes were not developed, although the old codes were maintained.
Instead, the generic subject categories were employed to code issue area
classifications. A discussion of issue area indicator development can
be found in Chapter 3. Statements of important issues for Japan during
the time span analyzed are presented in the Appendix.

NON-EVENT DATA COLLECTION

Opinion Data

The results of JIJI Press monthly public opinion polls were translated
from Japanese and made machine-readable to enable analysis of the
effects of public opinion on international behavior patterns. These
polls were conducted on a stratified random sample of the Japanese
population. They include questions concerning party voting habits,
support for the incumbent government, preferred countries, alignment
preferences, opinions on current economic conditions, and topical issues.

Monthly poll data were collected and coded for the 56 months between
May 1970 and December 1974. The specific questions coded from the surveys
are listed in Chapter 3.

Economic Data

Data on 18 economic indicators were collected for the period July
1971 through July 1974. The data were drawn from publications of the

Organization for Economic Cooperation and Development: Main Economic Indicators and Trade Statistics, Series A, and International Financial Statistics published by the International Monetary Fund. These data are described in depth in Chapter 3.

DATA PREPARATION

All of the coded data were placed in computer files for easy access. In its basic form, the data file is composed of 135 observations that consist of consecutive seven-day aggregates between January 1972 and July 1974. All of the analyses that follow in this report employ these seven-day (weekly) periods as the unit of observation, or they use some aggregate of these seven-day units (for example, seven-day periods are used in Chapters 5 and 8, 13-week moving averages are used in Chapter 6, 28-day units are used in Chapter 7, and approximations of calendar months based on 28- or 35-day periods are used in Chapter 9).

A system of computer programs, the PULSE System, that can manipulate the data to form several indicators has been developed on the General Electric Mark III Timesharing Network. It permits flexible retrieval and display of event data as well as providing computational and display options for various interaction indicators. In addition to analytical retrieval, the PULSE system allows retrieval of descriptive text for each event in the FBIS data file from January 1971 to December 1973. The "PULSE User's Manual" is presented in the Appendix.

CHAPTER 3
NEW INDICATOR DEVELOPMENT

Issue Indicators
Behavioral Tone Index
Dyadic Intensity Index
Power Strategy Indicators
Internal Political Indicators
Economic Indicators

CONCEPTUAL FRAMEWORK AND BACKGROUND

In this section a set of event-based indicators is developed that monitors
the issue content of international behavior. By subsetting a nation's
overall behavior into issue samples it is hypothesized that the ability
to predict international trends will be enhanced. There are reasons to
suspect that the relationship between incoming and outgoing behavior may
not be the same across different types of issues. Consider, for example,
an issue area breakdown into economic, military, and political categories.
Differences in response patterns could be expected either from a strategic
or organizational point of view. Strategically, similar responses may
carry greater or lesser risks depending on the type of issue involved,
and these different risks could result in different response patterns.
For example, Arab threats to reduce oil supplies (an economic issue) may
call for more conciliatory responses than threats to regain occupied
territory from Israel (a political/military issue). Organizationally,
different bureaucratic subunits responsible for particular issue types
may respond to the external environment using different approaches.

If response patterns do differ across issues, then the accuracy of response
predictors may improve by taking account of issue types. In this section,
various advantages and problems in developing issue indicators are dis-
cussed and a country-specific issue typology is constructed for Japan.
The operational issue indicators that result are based on the content of
international and internal events and can be employed to subset overall
behavioral interactions into content-specific samples of behavioral flows.
The value of using these issue indicators rather than analyzing overall
behavior in which all issues are combined is empirically elaborated in
Chapter 5. Based on these tests the issue indicators are employed in
other empirical analyses in Chapters 6, 7, 8, and 9.

24

Issues Defined

Issues identify the substance of international behavior over which there may be contention and controversy. Contested values and goals motivate specific sets of decision-makers and elicit certain types of response patterns (Rosenau, 1967). Robert Dahl's study of New Haven, for instance, attests to the fact that there is little decision-maker overlap between issues; decision-making actors, processes, and outcomes vary significantly between issues (Dahl, 1961). In the international context, Coplin (1971: 82-86) contends that the values and goals with which issues are concerned activate particular policy-makers as well as particular sub-national interest groups, and their joint interaction culminates in policy strategies that vary from issue to issue. In a case study of Japanese policy-making, Haruhiro Fukui (1974) analyzes the various ad hoc decision-making groups that participate in different issues and points to the importance of issues in accounting for policy variation. Thus, issues provide a situational element to the analysis of national policy that can be employed to explain variation in policy output.

Rosenau (1966) develops a typology that classifies international behavior by the controversial values, interests, and goals with which it is concerned. He elaborates four issue categories: territorial, status, human resources, and non-human resources. Another approach to issue value typologies is suggested by Andriole, et al. (1975) who conceptualize military, economic, territorial, scientific, cultural, organizational, and legal breakdowns. Charles Hermann (1969) has constructed an issue-process typology that deals with the dynamics through which value contests are conducted. He employs the concepts of threat, decision time, and anticipation to distinguish between various types of international situations: crisis, reflexive, innovative, deliberative, administrative, inertia, circumstantial, and routinized decision-making situations. In an empirical test of the utility of Hermann's scheme, Brewer (1973) found that issue types based on threat, decision time, and anticipation strongly affect the nature of decisional behavior. Other researchers (in Wilkenfeld,

1973) have utilized an issue-unit typology in their conceptualization of the internal-external behavioral linkage and its influence on policy output. Unit typologies define issues with respect to the spatial dimensions involved in a controversy, in this case domestic and international political and military behavior.

Levels of Issue Specificity

A major problem of issue research is the definition of a level of issue specificity proper to the research task to be undertaken.[1] There appear to be three levels of issue specificity, each appropriate to different research considerations. The most elemental level, the specific issue level, concerns contested values over rather unambiguous decisional sequences. (For example, Japan should or should not establish diplomatic relations with North Korea, or Japan should or should not take an active role in seeking a Middle East peace settlement.) A middle range level, issue areas, considers clusters of specific issues that involve similar value contexts (for example, the normalization of diplomatic relations or resource dependence). The third, more general issue arena level groups together basic categories of issues which are not in any way geographically specific (for example, issues grouped into economic, political, military, and technological categories, or issues grouped into territorial, human resources, non-human resources, and status categories).[2]

Each of these levels provides an issue context within which the type of actors, their motivation, and their behavior may differ; each distinguishes between various values, interests, and goals which underlie decision-making processes. Which level of issue specificity is appropriate depends on

---

[1] Rosenau (1966, 1967) deals in part with this question.

[2] Jargon in issue research can be confusing. What Rosenau (1966, 1967) refers to as "issue areas" corresponds to our issue arena level. Lowi (in Rosenau, 1967) uses the term "arena" as we do here. Dahl (1961) refers to specific issues as "decisions."

the type of decision-making analysis one desires. We should aim for a
level that distinguishes between different decision-making tasks within
the bureaucratic organization. To do this the chosen level must be able
to tap a particular set of players who are activated by similar motives
and who interact along similar behavior patterns (Rosenau, 1967).

There are certain costs and benefits associated with each level of issue
specificity. The specific issue level is potentially useful in analytical
problems concerned with the resolution of particular controversies. The
analyst could plot the goals and behavior of one nation on any salient
specific issues against the goals and behavior of another nation on the
same issue and measure the degree of conflict reduction and escalation
over time. There are, however, certain empirical and theoretical problems
connected with using the specific issue level. Many specific issues are
concerned with values and interests that are relevant for relatively short
time spans. Thus long-term analysis of many specific issues is practically
a contradiction in terms. Another empirical problem deals with the histor-
ical nature of specific issues. Since specific issues cannot be identi-
fied until they have reached saliency, a list of specific issues can only
be assembled a posteriori and analysis can only be conducted to postdict
already defined issue conflicts.

The issue area level allows the analyst to generalize about the policy-
making process by assuming that a range of related specific issues are
dealt with by the decision-making apparatus along similar patterns by
similar groupings of decision-makers. If the same motives, roles, and
behavior are evoked by particular clusters of specific issues, then it
appears reasonable to analyze them at that higher level of aggregation.
Thus, the level of issue area appears to be an appropriate level to
research decision-making on an organizational task basis; it is believed
that specific sets of decision-makers will be activated depending on the
issue area. Issue areas are sufficiently abstract to allow for the con-
struction of fairly stable categorizations of value controversies which
will be valid over time. Because of this, the problem of a posteriori

27

identification of specific issues is basically eliminated at the issue area level. Decisional processes on issue areas are continual and ongoing, even though conflict over specific issues may have terminated.

However, operational and conceptual problems do arise at this level. Whereas specific issues are relatively easy to identify in terms of the particular value conflicts involved, and while typologies of issue arenas are also identifiable, aggregating up to the issue area level is problematic. There are an infinite number of alternative typologies. Many assumptions must be made in order to "properly" cluster specific issues within boundaries which presumably mirror decision-making tasks. Such issue area clusters would almost definitely vary from country to country. Task structure and thus issue areas would also change gradually with time within one nation.

The grossest level of issue aggregation is the issue arena level. Groupings of value conflicts at this level appear to be too abstract to provide meaningful compartmentalization of the decision-making process. If the scope of the issue arena is too large, the workings of the decisional process may become blurred. Although bureaucracies may be broken down into large functional divisions, increasing specialization within them usually results in islands of decisional actors who are motivated by fairly concrete and limited value controversies. To replicate the specificity of decision-making tasks, we must choose the level of issue specificity which best measures the degree of role participation. If the issue categories are too large we are likely to pull together various decision-making groups which are functionally separate and therefore lose information about the process we wish to understand more fully.

The level of issue specificity chosen depends on the nature of the research task. It appears as if the middle range issue area level would be appropriate to many analytic situations, even though the construction of an acceptable typology for this level is probably the most difficult.

28

Issue clustering at this level can approximate closely the division of functional tasks among policy-makers. Furthermore, country-specific issue area typologies can be developed to accommodate the important value controversies facing the decision-making elite of particular nations.

OPERATIONALIZATION

A scheme to operationalize the issue content of international and domestic events must relate directly to the realities and foci of the national actors it attempts to monitor. For example, the behavior of petroleum-exporting countries certainly revolves much more around oil issues than the international behavior of Japan that centers on economic and diplomatic issues. In the present study of Japan, an issue typology is developed that is value-oriented, aggregated at an issue area level, and country-specific. This typology is then operationalized using event properties collected by the Defense Events Coding Scheme (DECS). A value-oriented issue typology pays specific attention to the goals and interests over which Japan is concerned, rather than the means with which it handles them (process-oriented typologies) or the spatial and geographic regions affected by them (unit-oriented typologies). Since we are trying to tap the actual substance of Japanese behavior in order to be able to predict it more accurately, it appears more direct and fundamental to focus on issue values than on the means or spatial units affected by issues. The issue area level is the appropriate degree of issue specificity with respect to tracking sustained behavioral content over time and Japanese policy-making on a bureaucratic task basis (Fukui, 1974). Finally, a country-specific typology accommodates Japan's particular policy perspective. The content of Japan's international and domestic interactions exhibits a limited number of areas of considerable saliency. The construction of an issue area typology appropriate to Japanese interests and goals should enable a more refined and subtle framework from which to predict Japanese actions.

Five issue areas have been identified as particularly suited to Japanese international behavior during the time period under examination, 1972-74. They are as follows:

1.   Political-military security

2.   Diplomatic relations

3.   Resource dependency

4.   Domestic economy

5.   International trade

A search of the scholarly literature on Japanese international and internal interactions, positions, and goals between 1970 and 1974 yielded a list of salient specific and general issues that demanded the attention of Japanese experts and policy-makers. (See the Appendix for this list.) These issues were carefully grouped into several categories in an attempt to develop mutually exclusive sets. The five issue areas listed above are the outcome of this procedure. In addition to this historical approach to typology construction, an empirical technique was employed with limited success. The FBIS Japanese data were sorted by generic subject code at an issue arena level to determine the occurrence and saliency of behavior content. Each event in the data set possesses from one to three subject codes that indicate whether behavior is concerned with political, economic, social, military, or scientific-cultural subjects, or some combination of these subjects. The tabulated results were rank-ordered in terms of degree of subject frequency as follows:

1.   Political issues

2.   Economic issues

3.   Political-economic issues

4.   Political-social issues

5.   Social issues

6.   Military issues

7.   Political-military issues

30

These general issue arenas are an indication of the importance of certain broad interests to Japanese policy-makers, which is reflected in the five issue area types listed previously. While the empirical results tend to confirm contentions in the literature of Japan's particularly intense focus on political, diplomatic, and economic areas, the extreme generality of the issue arena types was judged to be more broad-stroked than was desirable for analytic purposes. Thus, the five issue area types developed from the literature were maintained.

A brief description of the content of each of the five issue areas for Japan between 1972 and 1974 follows.

Political-Military Security Issue Area

Concern over the future of Japan's military capabilities -- rearmament questions and further expenditures to develop its self-defense forces, the status of U.S. bases in Japan, and the U.S.-Japanese Mutual Security Treaty -- are particularly salient issue areas for Japan. Especially because of the proximity of two potential military adversaries, the Soviet Union and the People's Republic of China, and the fear of becoming implicated militarily in the conflicts of Southeast Asia, Japan's interests in this area are intense. Ambivalence over questions on nuclear armament and maintenance of a nuclear-free mainland as well as territorial disputes with the Soviets over four northern islands were secondary though important during this time period.

Diplomatic Relations Issue Area

Japan's promotion of a well-balanced and increasingly independent international diplomacy is described by this issue area. A large part of Japan's interaction with other nations concerns establishment of an international political role commensurate with its already active economic role. Closer relations and cooperation with the Soviet Union, the People's Republic of China, the European Economic Community, Southeast Asia, and developing nations have already been pursued.

31

Resource Dependency Issue Area

Japan's high degree of dependence on external sources for food, energy needs, and raw materials has become extremely salient. Its dependent status in this regard has created the necessity to cooperate with other nations to develop their resources. This has taken the form of Japanese technical and financial aid and investment abroad, particularly in the less developed countries and the Soviet Union. Technological developments in extracting energy and natural resources are included in this issue area as well.

Domestic Economy Issue Area

Fluctuation in Japan's domestic economic trends during this time period has caused increasing concern and interaction, particularly in the domestic political domain. Domestic inflation, currency revaluation, environmental decay, the proposed restructuring of the domestic economy, establishment of an export tax, and energy conservation were especially in the limelight.

International Trade Issue Area

In response to international economic problems, Japan has sought to liberalize its trade and capital flows. It has encouraged spending and investment abroad, lowered tariffs and non-tariff barriers, and made motions to reduce its excessive trade surplus.

Event-based indicators are developed to monitor each of these issue areas based on the generic subject codes assigned to each event. In the DECS coding scheme, up to three 3-digit subject codes can be specified for each event. The 125 available subject categories identify the value content of behavior (see "Codebook" in the Appendix). These subject categories were grouped together into five mutually exclusive sets to

32

approximate closely the descriptions of the five issue areas. Thus, events in each issue area can be identified by selecting the proper subject codes. Forty subject categories did not fit satisfactorily into any of the issue clusters; these basically consisted of non-political, scientific, and societal categories. Since DECS events possess up to three subject codes, each event can potentially be included in up to three different issue areas. However, despite this multiple coding, each event is counted only once within each issue area in which it falls. Table 1 lists the generic subject code aggregations for each issue area. These aggregations represent issue indicators that peg events into issue areas and that can be employed to subsample and control for issue content. Table 2 presents the frequency of occurrence of events in each of these issue areas for international and domestic dyads. Note that some events may be counted in more than one issue area because of multiple coding, and some may not be included in any issue area because of the 40 excluded subject codes.

TABLE 1

Generic Subject Code Aggregations for Japanese Issue Areas

1. <u>Political Military Security Issue Area</u>

   315 Formal alliances, political, military, economic
   316 General reduction of violence
   318 Border disputes
   319 Territorial waters
   320 Airspace
   321 Military conflict
   322 Territorial affairs
   452 Nuclear weapons research
   500 Military: Strategic Nuclear Forces
   501   Force levels
   502   Procurement of weapons expenditures
   505   Deployment, transit, base rights
   510   Training and readiness
   549   Other
   550 Military: General Purpose Forces
   551   Force levels
   552   Procurement, expenditures
   553   Mobilizations, deployment
   555   Transit, locations, base rights
   560   Training, readiness
   570   International military aid
   571   Military sales transfers
   599   Other

2. <u>Diplomatic Relations Issue Area</u>

   212 Unofficial visits
   213 Cultural relations
   311 International laws, treaties, negotiations
   312 General relations between states
   313 Diplomatic and consular affairs
   314 International organizations, memberships, and activities

3. <u>Resource Dependency Issue Area</u>

   130 International investment
   131   Business investment
   132   Government investment
   133   Economic aid
   134   Technical aid
   139   Other investment
   140 Energy (international)

34

```
141      Business
142      Government
143      Other
148 Development of international resources
155 Energy (internal)
412 Science and technology:  international agriculture, fisheries
413 Natural resources
417 International nuclear development
482 Non-military nuclear reactors
484 Science and technology:  internal agriculture, fisheries
485 Natural resources
```

4. Domestic Economy Issue Area

```
150 Growth and development of internal economy
151      GNP, national income
152      Investment
153      Production
154      Industrialization, growth of technology
155      Energy
156      Development of resources
160 Manpower
161      Craft and trade unions
169      Other
170 Problems
171      Inflation, price levels, wage rates
172      Unemployment and underemployment
173      Regional problems
179      Other
180 Governmental policies
181      Fiscal, budget
182      Monetary, banking, federal reserve
214 International ecology, pollution
257 Internal ecology, pollution
258 Social welfare, quality of life
```

5. International Trade Issue Area

```
100 International trade
110      Trade agreements
111      Amount and directions, trends, composition
112      Quotas
113      Tariffs
119      Other
120 International finance
121      Balance of payments
122      Exchange rates, policies, mechanisms, and institutions
         for adjustment
129      Other
```

TABLE 2

Event Frequency Totals in Issue Areas for International
and Domestic Directed Dyads: Japan 1972-1974

Issue Areas

Dyads	All Events	Political-Military Security	Diplomatic Relations	Resource Dependency	Domestic Economy	International Trade
International Dyads:						
Japan → World	4120	744	2541	912	-[a]	901
World → Japan	2820	399	1763	658	-	681
Japan → US	746	341	340	87	-	166
US → Japan	241	71	112	54	-	79
Japan → USSR	465	116	276	153	-	67
USSR → Japan	454	108	290	132	-	75
Japan → PRC	673	24	466	79	-	211
PRC → Japan	574	42	360	55	-	202
Japan → Asia	996	77	697	219	-	136
Asia → Japan	936	123	662	167	-	131
Domestic Dyads:						
All Domestic	3668	734	1044	660	1101	379
Government → Non-government	1254	232	334	244	464	168
Non-government → Government	795	243	230	94	205	52
Government → Government	1142	182	404	254	346	126

[a] There was minimal discussion of Japan's domestic economic issues between international actors.

BACKGROUND AND CONCEPT

In several analyses in this report, two indices are used--a behavioral tone index and a frequency (intensity) index. This section develops the behavioral tone index, providing the background and concept for the index and then operationalizing it.

The concept of a behavioral tone index has been basic to CACI's work on quantitative indicators over the past several years (CACI, 1972 and CACI, 1974). A behavioral tone index in this context is a weighted or unweighted combination of categories of event data that reflects the relative degree of friendliness and hostility implied by the events. A number of other researchers have been active in the development of tone indices (Phillips, 1973 and Phillips and Crain, 1974 using the CREON project data; Burrowes, et al., 1970; Corson, 1970; Azar, 1970; Moses, et al., 1967; Rubin and Hill, 1973). This research has included some inquiry into weighting the components of behavioral tone indices and categorizing certain types of events as positive, negative, or neutral (CACI, 1973 and Rubin and Hill, 1973). However, no fully satisfactory combination of conceptually and empirically based weighting schemes has emerged from that research; consequently it was necessary to address the problem of developing an event data weighting scheme for behavioral tone.[3] This scheme should possess both apparent face validity and a degree of analytic support.

---

[3] One cannot avoid the problem of event category weighting: the failure to develop differential category weights automatically constitutes a decision to weight all categories equally. Making the assumption that coercive acts are equivalent to protest statements, or that acts of yielding are equivalent to acts of communicating or supporting, has little face validity. Especially in index construction, in which various behavioral types are combined in some fashion, a convincing weighting scheme is essential to differentiate extreme from moderate behaviors and to attempt to capture the reality of the situation.

The system used to code the Japanese data in this study is a variant of the WEIS scheme—DECS (Defense Events Coding Scheme)—which includes 22 genotypic behavioral classifications. The need to aggregate these categories in developing a weighting scheme was generated by three factors: (1) low frequencies in many categories, (2) the possibility of a high degree of correlation between categories, and (3) the need for various analytic purposes for one or relatively few behavioral tone categories. To obtain face validity, the WEIS categories were grouped and ranked into category aggregations by evident category meaning (considering category definitions and usage by various researchers). To obtain a degree of analytic validity for the weighting scheme, Guttman scaling and factor analysis procedures were employed.[4] The hypothesis underlying the Guttman scaling was that more intensely positive or negative categories of behaviors would normally be initiated only after less intense ones had been tried. Factor analysis was used to explore the dimensionality of the category aggregations and to define the placement of so-called neutral events on a positive/negative continuum.

OPERATIONALIZATION

The WEIS system classifies international behavior into 12 negative and 10 positive or neutral categories, some of which appear more intense than others. Seven aggregated categories were developed from these 22 that were heuristically satisfying and could be conceptually ordered from most positive to most negative. These are:

1. Yield
2. Give
3. Support
4. Communicate
5. Protest
6. Threaten
7. Coerce

_____

[4] For an explanation of Guttman scaling, see Stouffer, et al. (1950); for an explanation of factor analysis, see Rummel (1970).

Conceptually, distribution of the 22 WEIS categories among the seven new classifications was not always self-evident. Some WEIS event categories fit into these aggregated categories with little question—for example, both _force_ and _seize_ are unmistakably coercive acts. Others are not as unambiguous—for example, the WEIS category _expel_ might be included in either the protest or threaten aggregated categories. To determine empirically which aggregations of the 22 original categories provide the best fit into the seven aggregated variables, several variant configurations of the component WEIS categories were tested using Guttman scaling and factor analysis. _New York Times_ event data were aggregated into these alternative event groupings for 116 high frequency directed dyads, all of which contained 50 or more events for the period 1966 to 1974.[5] The aggregation of WEIS classifications that resulted in the best Guttman scaling follows:

New Aggregated Categories	Original WEIS Categories
1. Yield	Yield
2. Give	Reward, Agree
3. Support	Approve, Grant, Promise, Propose
4. Communicate	Comment, Consult, Request
5. Protest	Reject, Accuse, Deny, Protest, Demonstrate[6]
6. Threaten	Demand, Expel, Reduce, Threaten, Warn
7. Coerce	Force, Seize

Scaling positive and negative categories together, the coefficient of reproducibility was equal to .95, and the coefficient of scalability was equal to .61. Scaling positive and negative categories separately raised the coefficient of reproducibility to .98, and the coefficient of scalability to

---

[5] Cross-sectional Guttman scaling could not be conducted on the Japanese data base due to lack of a sufficient number of significant dyads.

[6] In the case of Japan, _demonstrate_ includes essentially non-military demonstrations that accuse or protest the actions of another nation.

.88--for both positive and negative events.[7] The Guttman scaling differ-
entiated the yield and coerce aggregated categories very strongly from the
rest. The factor analysis of these seven categories indicated that when
unrotated, all variables except these two extreme categories loaded highly
on the first factor. With rotated factor matrices (squared multiple
correlations were placed in the diagonal), positive and negative variables
clustered together on separate dimensions (again with the extremes not
loading highly) while the so-called neutral category (communicate) loaded
very highly (.96) with the positive events. Based on the strong differ-
entiation of the extreme categories (yield and coerce) and the association
of the so-called neutral category (communicate) with positive events, the
following weighting factors were adopted for the aggregated categories:[8]


```
+16 ———+——— Yield

+ 9 ———+——— Give

+ 4 ———+——— Support

+ 1 ———+——— Communicate

- 4 ———+——— Protest

- 9 ———+——— Threaten

-16 ———+——— Coerce
```

_____
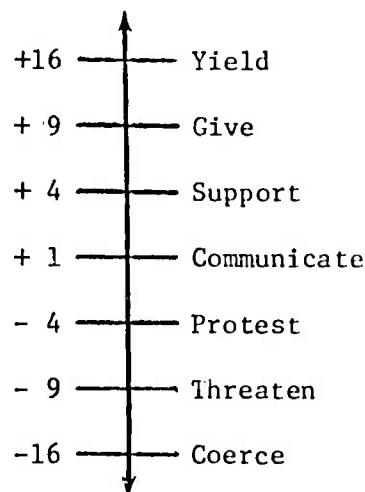
[7] To explore transferability of these category aggregations to different
data bases, this same set of aggregations was Guttman-scaled using Times
of London data for the same dyads. The data were considerably less rich,
as they covered only 1971-1974. This Guttman scaling gave the same order-
ing of categories and was still meaningful, with coefficients as follows:
for positive and negative categories combined, the coefficient of repro-
ducibility was .88, and scalability was .51. For positive and negative
categories separately, the coefficients of reproducibility were .91 and
.90 respectively; and coefficients of scalability were .47 and .73 respec-
tively.

[8] In view of the results of the Guttman scaling, it appeared that the
seven aggregated categories listed earlier should not be equally weighted
in constructing an overall tone index. In the absence of a method for
otherwise developing such a weighting scale, simple equal-interval scaling
(+1, +2, etc., for positive and negative tone) would be appropriate. The
marked differentiation of the extremes shown in the Guttman scaling indi-
cates, however, the desirability of weighting the extremes more intensely
than would be the case using equal intervals. Squaring the values in an
equal interval scale accomplishes this. The result (with allowance for
communicate as a positive category of minimal intensity) produced the
weighting factors.

These weighted categories were then consolidated into a single behavioral tone index by using the following formula:

$$I_t = \frac{\text{sum of weighted frequencies}}{16 \times \text{sum of unweighted frequencies}}$$

The use of unweighted scores in the denominator of this index represents a departure from the approach used by other researchers (Kohler, 1975). To calculate their tone indices, many analysts divide the sum of the weighted conflict scores by the sum of the weighted cooperation and conflict scores. Thus, their quotients measure only the degree of hostile behavior out of total interaction. Kohler (1975) has argued that the use of unweighted scores in the denominator yields an illogical measure of tone, For instance, the occurrence of a mix of high and low intensity cooperative behaviors in any one time period will yield a smaller index value than if only high intensity cooperative behaviors occurred. He suggests that just the opposite result would be expected logically.

To this argument, two responses may be made that support the use of unweighted (or uniformly weighted) scores in the denominator of a behavioral tone index.

- In Kohler's example, the addition of one more cooperative event should not per se affect behavioral tone. However, we can argue that the degree of positiveness or negativeness of the added event does affect average behavioral tone. A behavioral tone index should be designed to measure average behavioral tone in a given time period depending upon the weights of event components. This becomes more apparent by using an example similar to Kohler's, one which indicates more clearly the desirability of diluting the intensity of the tone index when less intense items are added. Assume a three point negative scale ranging from highly negative to moderately negative to slightly negative. Three highly negative events alone would indicate very strained, possibly ruptured relations. Three highly negative events, with 4 or 5 moderately negative events, and 25 or 30 mildly negative events, would indicate an overall climate of mild disagreement with relatively few exceptions. Yet a quotient using a weighted denominator would result in the same index value for both cases: for the three highly negative events alone, and the aggregation of mild, moderate, and negative events.

41

- A more dramatic example is the following: using weighted frequencies in the denominator, three highly hostile events (alone) would provide index values exactly the same as three mildly hostile events (alone). Using unweighted frequencies in the denominator (the approach of this study), the three highly hostile events would scale as highly hostile, the three mildly hostile events as mildly hostile. If highly hostile events carry a weight of -3, and mildly hostile events a weight of -1, then for 3 similar events:

Hostility Quotient Methods would produce the following index numbers:		Unweighted Denominator Methods would produce the following index numbers:	
Highly Hostile Events	Mildly Hostile Events	Highly Hostile Events	Mildly Hostile Events
$\dfrac{3(-3)}{3(-3)} = -1$	$\dfrac{3(-1)}{3(-1)} = -1$	$\dfrac{3(-3)}{3} = -3$	$\dfrac{3(-1)}{3} = -1$

Based on these considerations, the index formula for behavioral tone that uses unweighted frequency values in the denominator was considered preferable.

SUMMARY

A behavioral tone index has been constructed that possesses the following characteristics:

- It is a weighted combination of the 22 elements of the WEIS international event categorization system.

- It has face validity in that the category aggregations considered for weighting purposes were initially selected based on meaning and normal usage of category designations.

- It has analytic support in that the results of Guttman scaling and factor analysis aided in selecting, ordering, and weighting this aggregation of categories.

- It has demonstrated a satisfactory degree of transferability between data bases possessing similar event coding schemes. Index aggregations and component rankings were developed using a New York Times data base and were replicated satisfactorily on a London Times data base.

The objective of this section is to develop a measure of participation in international dyadic behavior. The resultant intensity or frequency index will enable comparison of the extent of behavioral interaction between dyads. Together with the international behavioral tone index described in the previous section, the intensity index provides another dimension of international actions that can be quantitatively monitored and predicted.

BACKGROUND

Frequency of interaction has often been used to describe trends in event data. Some examples using the WEIS coding system include McClelland and Hoggard (1969: 723) who use it for trend analysis of crises involving Berlin access, Quemoy and Tachens, and the Middle East; Hoggard (1969) who establishes "performance characteristics" based on the mean of a nation's prior monthly event output; Moore and Young (1969) who use regression techniques to predict intensity of behavior based on the median frequency of events from the immediately preceding three-month period; and Harris, et al. (CACI, 1974) who array the frequency of issue-specific events over time to evaluate the relative saliency of different issues in the international domain.

In the present study an index of event frequency is sought that enables valid comparisons of dyads, even those that exhibit widely discrepant interaction frequencies. We are not interested in the raw level of inter-action but in a comparable level between dyads based on deviations from the norm of interaction intensity. To provide a standardized base line for comparing dyadic event frequencies, a normal or expected value of interaction between dyad members is developed. Such an expected value suggests the level of interaction that should characterize "normal"

43

relations between dyad members (Azar, 1972). Theoretically, normal rela-
tion intensities are different for each dyad. The degree of deviation
above or below this expected value of interaction intensity can be measured
over time to form an intensity index.

OPERATIONALIZATION

The search for an analytical standardizing factor -- an expected fre-
quency for each dyad -- led to an exploration of the characteristics
of several variables. It was alternately hypothesized that "normal"
interaction between nations depends on (a) the interaction (multiplica-
tion) of their gross national products, (b) geographical proximity, or
(3) directed imports and exports as a percentage of total world trade
for the dyad. Regression techniques were employed to estimate the degree
to which any of these factors separately or in combination could predict
"normal" interaction, and thus yield an equation to calculate the expected
frequency values for any pair of nations.

To operationalize "normal" interaction, international dyads characterized
as experiencing "normal" relations were chosen. "Normal" dyads represent
the residual set of nation pairs after warring dyads and reciprocal super-
power dyads are eliminated. Thus, 47 out of 116 high frequency directed
dyads (each containing 50 or more events over the period 1966 to 1974)
in the New York Times event data set were earmarked to form this "normal"
sample.

The event frequency variable for each normal dyad was regressed on the
three predictor variables, individually and in combination. In order
to normalize the sample distribution of the frequency variable, it was
log transformed (base 10) and a new set of regression equations were
calculated. The product of dyad partner GNPs yielded the best predic-
tion of normal dyadic frequency (log transformed), $r^2 = .43$. The

resultant regression equation is:

$$\text{Logged Normal Dyadic Frequency}_{A \text{ or } B} = 1.95872 + .25404(GNP_A \times GNP_B),$$

where A and B are dyad members. The analyst can use this equation to derive the "expected" normal dyadic frequency for any pair of nations by substituting the product of the countries' GNPs.[9]

Since the equation's parameters are based on dyad frequencies from the New York Times data collection and subsequent analyses for this report are performed on data collected from FBIS Daily Reports, a transformation ratio had to be developed to adjust for the difference in data yields of the two sources. The total number of international events collected from FBIS on all Japanese dyads between January 1972 and July 1974 (6,940 events) was divided by the total number of events in the New York Times data set that involved Japan as actor or target during the same time period (903 events). The resulting transformation function, 7.6855, was used to adjust the expected frequency values to FBIS data densities. The adjusted expected weekly frequencies for each of the Japanese dyads to be analyzed in this report are presented in Table 3 along with the mean frequency values for these dyads.

TABLE 3

Adjusted Expected Weekly Frequencies
for Overall Behavior, 1972-1974
(based on FBIS data densities)

Dyad[a]	Expected Frequency/Week	Mean Frequency/Week Japan → X	Mean Frequency/Week X → Japan
Japan↔U.S.	4.58	5.53	1.79
Japan↔USSR	2.76	3.44	3.36
Japan↔PRC	1.74	4.99	4.25
Japan↔Asia	1.97	7.38	6.93

[a] Expected value is identical in either direction.

_____
[9] Because the product of a dyad's GNPs is invariant despite which member of the dyad is considered the actor or target, the resultant expected frequency is the same for both halves of a reciprocal dyad.

Any difference between expected frequency and mean frequency suggests an empirically observed above or below level intensity of concern between nation pairs. For instance, on the average, Japan's interest in the United States appears to be slightly higher than what would be expected, but Japan is of relatively low salience to U.S. policy-makers as compared to what might be expected.

To calculate the expected frequency for dyads that are analyzed on issue area behavior, a further transformation function is required to adjust for the degree to which issue frequencies are sampled from a dyad's over-all behavior. The transformation ratio is

$$TR_{issue\ area} = \frac{Frequency\ of\ Reciprocal\ Dyad\text{-}Issue\ Area}{Frequency\ of\ Reciprocal\ Dyad\ (all\ issues)}$$

The expected frequencies for overall behavior in Table 3 can be multiplied by this transformation ratio to adjust for issue area sampling. Table 4 presents the adjusted expected weekly frequencies for each of the dyad-issues examined in this report.

TABLE 4

Adjusted Expected Weekly Frequencies
for Issue Area Behavior, 1972-1974
(based on FBIS data densities)

Dyad-Issue Area[a]	Expected Frequency/Week
Japan↔U.S. (political-military security)	1.91
Japan↔U.S. (diplomatic relations)	2.10
Japan↔U.S. (trade)	1.14
Japan↔USSR (political-military security)	.67

[a] Expected value is identical in either direction.

Once an expected value for frequency was obtained, an index to measure the degree to which observed frequencies varied above or below expected

46

frequencies was developed. Several alternatives were considered.[10] The
one chosen computes the deviation of observed frequencies from the
expected level of interaction by using the formula,

$$I_i = \frac{f_o}{f_e} - 1,$$

where I_i is the intensity index, f_o the observed frequency, and f_e the
expected frequency. This produces an index which is bounded at the lower
limit by -1.0 and is theoretically unbounded at the upper limit. Empiri-
cally, the upper limit is bounded by the total number of events reported
per unit of time in the data source. The index enables undistorted
examination of extreme interaction intensities. Furthermore, because it
is based on a standardizing factor it enables valid comparisons of inter-
action intensity between manifestly different dyads.

---

[10] Some of the alternatives rejected involved the use of probability
measures developed by computing standard deviations or Poisson probability
distributions (Hayes, 1973). These and other measures that were considered
were inadequately discriminatory in regions distant from the expected
value, regions in which a number of meaningful variations in dyadic inter-
action frequencies could be expected to occur.

CONCEPTUAL FRAMEWORK AND BACKGROUND

The objective of this section is to develop a set of event-based indicators that measure the use of power strategies in the international system. Power strategies used by international actors have important impacts on national security policy-making. They constitute fundamental behavioral and verbal signals sent and received by international actors that can aid in predicting future interactive trends between dyadic partners. By observing the effects of the use of power strategies over time in partic- ular dyads and issue areas -- taking account of the credibility and per- suasiveness of these strategies, and the types of responsive behaviors they elicit and with what probability -- it may be possible to employ indicators of power strategy occurrence as barometers to measure potential shifts in future dyadic relations. Event-based indicators of several types of power strategies are developed in this section. They may be used to measure the degree of power strategy exercise in overall behavior or issue-specific behavior. A methodological discussion of a power strategy impact analysis that creates the framework for measuring the probability of future international interaction appears in Chapter 4. An empirical test of the indicators and this type of analysis using Japan- ese overall and issue-specific international behavior as a substantive focus is presented in Chapter 7.

These strategies, defined behaviorally as attempts to influence the actions of another nation in an intended direction, are behavioral, per- suasive, purposeful, and relational actions that can elicit certain types of responses from the target nation. Each exercise of a power strategy is an attempt to modify the target's goal structure and behavior pattern in a direction advantageous to the initiating nation. If power strategies employed by particular nations are consistently effective in achieving

the desired change in the target country, then power strategy usage could be a potentially important predictor of the target's reactive behavior. Thus, the ability to monitor power strategy inputs in international interaction should assist in the calculation of probability projections of particular response modes for the target nation.

The scholarly literature has dealt with two aspects of power strategies: power statements and power deeds. The former focus on verbal and conditional means of influence and persuasion; the latter involve the actual use of resources to change another's behavior. Power statements and power deeds are both attempts to alter another's behavior; the degree to which these attempts are actually successful is a matter of empirical identification. Thus, as they are operationalized, power statements and deeds are international stimuli that potentially elicit responsive behavior. Typologies of both kinds of power strategies are developed below to enable meaningful categorization of events into power strategy indicators.

A Typology of Power Statements

Power is used to persuade another nation to change its behavior and goal orientations to conform to the initiator's goals. An important feature of power statements which distinguishes them from other types of behavior is, in Schelling's words, their "exploitation of potential force" or potential reward (1960: 5, emphasis ours). Schelling views power statements as integral elements of international interchanges that motivate modification of position and behavior by employing persuasive signals and that imply the potential application of resources in the future. The power initiator verbally commits himself to use certain resources at some future time if the contingencies of his strategy are not fulfilled by the target nation. The resources represent potential positive and negative sanctions which, even if not realized, may persuade the target to alter its present goal orientations and behaviors aimed at achieving its objectives.

49

The works of Schelling (1960), Ikle (1964), and Zartman (1971) yield a coherent typology of power statements in international politics. Table 5 presents this typology.

TABLE 5

Typology of Power Statement Types

Volitional	Non-Volitional
Promise	Prediction
Threat	Warning
Commitment	
Obligation	
Fait Accompli	
Simple Incapacity	

All of these statement types are verbal strategies that inform another nation of the probability of future occurrences under certain conditions. Statements in the first column refer to strategies of volition; the power initiator himself has control over the likelihood of the future occurrences (for example, instituting blockades or bombing raids). Non-volitional strategies refer to those power initiatives in which control over the likelihood of future occurrences is totally out of the hands of the initiator; the occurrences predicted are usually natural or inevitable happenings (for example, nuclear fallout, famine, or public opinion). Descriptions of these power statement types follow:

A promise involves a potential reward to the target nation (allocated by the initiator) if it complies with the desires of the power initiator.

A threat involves some future initiator-allocated costs imposed on the target if it does not comply.

A commitment is the assurance the influencing nation gives to the other nation that it will take some specific future action if its needs are not met. The influencer must convince the other in a credible way that it has burned the bridges behind it and therefore will have no other choice but to make good on its commitment if its desires are not satisfied.

50

An obligation involves persuasion of the target nation that its own hands are tied and that it is obliged to satisfy the initiator's desires.

A fait accompli strategy indicates to the target that particular circumstances cannot be undone, that the state of things is irrevocable. This is so because of some action already taken by the influencer.

A simple incapacity strategy states that things simply cannot be done. The influencer attempts to convince the other nation of its inability to fulfill certain promises or act in a certain way.

A prediction augurs a future beneficial occurrence, which is beyond the initiator's control, if a contingency favoring the influencer is met.

A warning informs the target of inevitable costs (beyond the initiator's control) certainly to be incurred if compliance with the influencer's desires is not forthcoming.

These power statements share two properties common to all power strategies: intention and contingency. A crucial feature that differentiates power statements from other verbal behavior is the intended effect of each attempt; power is purposeful, there is some motive activating each attempt.[11] The intention or motivation behind specific power statements might possibly be indicated in terms of national objectives or the goals of individual national policy-makers. While all power statements attempt to elicit movement and change in another nation, it is often difficult to specify empirically the exact intention associated with each. The problem of intention arises because of the psychological inference that must be made of behavioral manifestations. Some national goals are not made

_____
[11] Whether intended effects are reflected in the outcome, that is, whether power attempts are successful in achieving their goals, is not relevant to the question at hand. We are only interested in identifying statements that possess the potential to influence other nations. The impact of the attempts on actors in the environment is a matter for empirical analysis.

explicit; the motivation of individual policy-makers may not even be obvious or conscious to the policy-makers themselves and, in either case, it would be difficult to match specific intentions with particular statements on a one-to-one basis. Perhaps the only way to handle empirically the concept of intention is to require that the power initiator possess at least a long-term "favorable attitude" in the general direction of the consequences created by his power strategies (White, 1971).

Contingency characteristics identify those aspects of power strategies that make them potentially effective in motivating the target nation to alter its goals and actions. Power attempts are formally stated in contingency language: if you do (or do not do) x, I will (or will not) do y. They specify the sanctions that may be forthcoming depending upon whether or not there is compliance with the power initiator's desires. It is these sanctions, the expectation of benefits to be gained or costs to be imposed, that cause movement in the target's goal structure and behavior patterns. These costs and benefits are often explicitly stated or implicitly obvious to the target nation's policy-makers.

A Typology of Power Deeds

In addition to conceptualizing power as verbal signals that indicate the potential use of resources, Schelling (1971) delineates another form of power in terms of the actual allocation of resources in international politics. The manifest use of a nation's capabilities represents an attempt to influence the actions of another country in an intended direction. As with power statements, power deeds possess the properties of intention and contingency.

Power deeds may be employed for various purposes in different circumstances. First, they may represent behavioral manifestations of a nation's commitment to its power statements. In order to emphasize to the target nation one's dedication to a strategy and one's credibility to follow through on the stated sanctions if there is no compliance, a nation may resort

52

to the actual use of power resources. For instance, the naval quarantine of Cuba in 1962 used military force to support our threats against the installation of weapons in Cuba. U.S. threats were made more credible by employing power deeds. Second, the use of power deeds by a nation may represent its response to another nation's power attempt. A reaction to a power attempt may take the form of compliance or noncompliance with the initiator's intent; but in either case the behavior of the target may require the positive or negative allocation of its resources. Thus, in an interactive international environment one power attempt may be reciprocated by another power attempt. Third, a nation's decision-makers may choose to bypass verbal interactions and attempt to influence other nations by initiating harmful or rewarding measures. By either severe physical force or large amounts of tangible support and aid, nations sometimes can be made to bend their positions and values.

Table 6 lists power deed categories that were suggested by the international relations literature.

TABLE 6

Typology of Power Deed Types

Allocation of Benefits	Allocation of Costs
Reconciliation	Diplomatic Hostility
Diplomatic Support	Physical Conflict
Material Support	

There are two basic types of resources that can be allocated to influence another nation: those that immediately benefit or those that cost the target nation.

A reconciliation strategy involves yielding to the actions and desires of another nation. In one sense, a nation that employs reconciliation strategies appears to retreat from its present position by actually giving up material wealth, property, territory, or persons. On the other hand, an adept practitioner of this strategy may be capable of yielding that

which is trivial or insignificant to him but is valued by the target.
For instance, U.S. policy-makers discussed the possibility of removing
our Jupiter missiles in Turkey in return for removal of Soviet missiles
in Cuba in 1962 (Abel, 1968). They reasoned that such a trade-off would
appear to be a concession to the Soviets, would not hinder U.S. defenses,
and would enhance the U.S. ability to influence Soviet behavior toward
removing the Cuban missiles.

A diplomatic support strategy involves the use of diplomatic resources to
indicate one nation's support of another. A large degree of diplomatic
attention and aid may help influence a target country's international
perspective and actions. (Witness the gradual effects of U.S. diplomatic
overtures to the People's Republic of China.)

A material support strategy represents substantive assistance provided
another nation. Plying others with gifts and material aid may often
be a successful method of co-opting former enemy or neutral nations to
a desired behavior pattern.

A diplomatic hostility strategy includes various negative sanctions that
can be taken short of the use of military force to convince a nation to
conform to a desired mode of behavior.

A physical conflict strategy involves the actual use of force and violence
to influence a target to mend its ways or suffer further punishment.

OPERATIONALIZATION

Most event coding systems attempt to classify every discrete form of
behavior into separate categories. The power strategy categories dis-
cussed above, since they involve either verbal or nonverbal communica-
tions, can be captured by these coding schemes; powerful events consti-
tute a subset of all observable behavior.[12] While a listing of all events

---

[12] The power strategy typology presented here has been operationalized
elsewhere (Spector, 1975) in the context of negotiation experiments.

54

during a given time period merely recounts the flow of behavior between nations, an inspection of power strategy events alone should provide insight into the motivation of behavior by targeted parties. The event classifications in the Defense Events Coding Scheme (DECS), similar to the World Event/Interaction Survey (WEIS), can be used to capture the essence of these different forms of power strategies. By clustering together relevant event codes it is possible to identify over time the utilization of these power categories by different countries toward other countries. The power strategy indicators developed by this method measure the frequency of occurrence of the categories discussed earlier. Operationalization requires the performance of two tasks: (a) distinguish event categories that represent power signals from those that do not, and (b) aggregate the power event categories along the lines of the power statement and power deed typologies. The categories to be operationalized follow:

Power Statements	Power Deeds
Promise	Reconciliation
Threat	Diplomatic Support
Commitment (positive and	Material Support
negative intent)	Diplomatic Hostility
Obligation	Physical Conflict
Fait Accompli	
Simple Incapacity	
Prediction	
Warning	

Problems arise in specifying codes that explicitly and unambiguously fit into each power strategy category. The DECS scheme was intended to serve as a general coding system of manifest behavioral events, while the present task calls for a coding system that not only distinguishes between different types of behavior manifestations but also between various types of intention and contingency. Intention is largely a perceptual and motivational concept that is beyond the scope of the DECS coding procedures and therefore beyond our ability to deal with it in the present effort.

To a certain extent, the coding system does identify contingency statements. However, there is a large group of verbal event codes that remains ambiguous as to the predicted positive or negative sanctions that may be employed. Given knowledge of the coding system and the source material that is coded, it is possible to devise two sets of event code aggregations for each power statement type: an explicit and implicit set. (Power deed categories are all operationalized fairly explicitly.) Codes that clearly fit into one or another power statement category are classified in the explicit set. Event types that are ambiguous but whose content leans in the general direction of a particular power statement category are added to the explicit set to form a combined implicit set of power statement types. Even allowing for these two sets of aggregations, three power statement categories -- prediction, warning, and fait accompli -- cannot be operationalized given the present DECS codes. Either these power strategies are so infrequently used that separate event categories for them would prove trivial or, more likely, behaviors that capture the essence of these power strategies are distributed and buried among various event codes, and, therefore, evade the power strategy classification. A third possibility is that data sources do not report these behaviors clearly.

These difficulties cannot be resolved satisfactorily in this study because of data and coding limitations. However, future attempts to operationalize power strategy types might ameliorate these problems by developing new and more subjective variables to the event coding system. WEIS and DECS collect "hard" data on events that answer the question, Who Said or Did What to Whom, About Whom, and Concerning What? The CREON project (Salmore and Brady, 1972), on the other hand, codes variables on event contingency, initiation, elicitation, evaluation, and intent, and therefore includes information on the perceptual and motivational properties of events. Similar kinds of data are important in enabling proper classification of power strategies.

The final power strategy aggregations for this study are listed in Tables 7 and 8. Only the explicit sets of aggregations were employed in the analyses in Chapter 7. Table 9 includes the residual DECS event categories that were not classified as explicit or implicit power statements or power deeds. These "non-power" types are not used in the power strategy analyses.

TABLE 7

Event Code Aggregations for Power Statement Types

(Note: Codes developed for 1974 data only are in parentheses)

Explicit set	Implicit set
1. Promise:	1. Promise:

<table>
<tr><td>

1. Promise:

051 Promise own policy support
052 Promise material support
053 Promise other future support action
054 Assure; reassure
055 Promise information to
082 Agree to future action or procedure; agree to meet, to negotiate; accept state invitation

</td><td>

1. Promise:

Same as explicit set

</td></tr>
<tr><td>

2. Prediction:

No codes applicable

</td><td>

2. Prediction:

No codes applicable

</td></tr>
<tr><td>

3. Threat:

074 Give non-threatening (friendly) notice of impending or possible harm to

(075) Give friendly warning; implicit warning that other party ought to do something

150 Issue order or command; insist; demand compliance

160 Give warning*

(162) Give hostile warning of necessary policy change*

171 Threaten without specific negative sanction

172 Threaten with specific non-military negative sanction

173 Threaten with force specified

174 Threaten with negative sanctions and time limit specified; ultimatum

</td><td>

3. Threat:

Same as explicit set, plus:

121 Charge; criticize; blame; disapprove

131 Make complaint (not formal)

132 Make formal complaint or protest

</td></tr>
<tr><td>

4. Warning:

No codes applicable

</td><td>

4. Warning:

No codes applicable

</td></tr>
</table>

---

* According to descriptions of these categories in DECS coding manuals, they conform more to the power strategy definition of threats than warnings.

TABLE 7 (Cont'd)

Event Code Aggregations for Power Statement Types

(Note: Codes developed for 1974 data only are in parentheses)

Explicit set	Implicit set
5. Commitment (Positive Intent):	**5. Commitment (Positive Intent):**
(026) Positive comment on situation; statement implies positive position or s____sfaction with prese___ ,olicy	Same as explicit set, plus:
	025 Explain policy or future position
042 Endorse other's policy or position; give verbal support	041 Praise; hail; applaud
102 Urge or suggest policy or action	101 Offer proposal
6. Commitment (Negative Intent):	**6. Commitment (Negative Intent):**
(027) Negative comment on situation implying negative position	Same as explicit set
111 Turn down proposal; reject protest	
112 Refuse; oppose; refuse to allow; exclude	
113 Refuse to give information	
114 Refuse to give certain rights and privileges to	
115 Refuse to give or accept material support	
7. Obligation:	**7. Obligation:**
No codes applicable	091 Ask for information
	092 Ask for policy assistance; seek help
	093 Ask for material assistance
	094 Request action; call for; ask for asylum
	095 Entreat; plead for; emotional appeal to
	096 Request granting of rights and/or privileges
8. Fait accompli:	**8. Fait accompli:**
No codes applicable	No codes applicable
9. Simple incapacity:	**9. Simple incapacity:**
No codes applicable	061 Express regret
	141 Deny an accusation, attributed policy, action, role or position

TABLE 8

Event Code Aggregations for Power Deed Types

A. Allocation of Benefits

 1. Reconciliation:

 011 Surrender; yield to order; submit to arrest

 012 Yield position; retreat; evacuate; surrender positions

 013 Admit wrongdoing

 014 Apologize

 015 Yield to pressure or demands

 065 Suspend negative sanctions; truce; cease-fire

 066 Release and/or return persons or property

 2. Diplomatic Support:

 043 Physically demonstrate in support of

 062 Give state invitation

 063 Grant asylum

 064 Grant privilege, diplomatic recognition, de facto relations; send ambassador to unoccupied post

 067 Increase number of consulates in

 068 Establish legation in

 069 Open an embassy in; increase embassy personnel

 083 For an agreement to go into effect

 3. Material Support:

 071 Extend economic aid (gift and/or loan)

 072 Extend military assistance; joint military exercise

 073 Give other assistance

 081 Make substantive agreement

TABLE 8 (Cont'd)

Event Code Aggregations for Power Deed Types

B. Allocation of Costs

1. Diplomatic Hostility:

084 For an agreement to expire

181 Non-military demonstration; walk-out; boycott

191 Cancel or postpone planned event; withdraw offer

192 Reduce routine international activity; recall officials

193 Reduce or suspend aid or assistance

194 Halt negotiations

195 Break diplomatic relations

196 Increase number or severity of legal barriers

197 Decrease the number of consulates in

199 Expressly terminate an agreement with

201 Order personnel out of country; deport

202 Expel organization or group

2. Physical Conflict:

182 Armed force mobilization, exercise and/or display; blockade

183 Attempt to cause physical destruction

211 Seize position or possessions

212 Detain or arrest persons

213 Intrude upon the property or territory of

221 Non-military destructive act

222 Military injury, destruction; bomb

223 Military engagement

TABLE 9

Event Code Aggregations for Non-Power Types

A. Participation Behavior

   1. Diplomatic Acknowledgment:

      021 Explicit decline to comment

      023 Neutral comment or comment on situation

   2. Diplomatic Exchange:

      031 Meet with at neutral site; send note

      032 Visit; go to

      033 Receive visit; host

   3. Organizational Affairs:

      231 Establish new organization

      232 Abolish old organization

      233 Reorganize or alter existing organization

      234 Join

      235 Withdraw from membership in

      236 Revoke or suspend membership of; expel

CONCEPTUAL FRAMEWORK AND BACKGROUND

This section discusses the relationship between a nation's internal political environment and its international behavior. A generalized conceptual framework is developed that suggests a variety of potential direct and indirect linkages between internal structural and behavioral factors and international behavior. The Japanese domestic political environment is then discussed and a set of variables identified that are likely to influence Japanese international behavior and may therefore be useful in predicting that behavior. Indicators of domestic opinion on both political and economic issues are derived from the results of opinion polls conducted in Japan, and event-based indicators of interactions between actors representing the government and opposition positions on different issues -- political-military, diplomatic, resource dependency, domestic economic performance, and international trade -- are developed for use in subsequent analyses. These indicators are designed to permit comparison of the relative influence of popular opinion, bureaucratic forces, and rival political forces on international behavior.

Theoretical Context

International policy decisions are made by an elite whose range of options is determined by a variety of factors. These include the nature of the political system within which decisions are made, the urgency of particular issues on which decisions must be made, and ongoing social and economic conditions which may be influenced by the decisions. In spite of the fact that a given decision may be made in response to external stimuli, national decision-makers will be strongly influenced by domestic and other national/international concerns.

63

Figure 1 provides a highly generalized graphic description of the decision-making environment as it is influenced by both domestic and international factors. It can be assumed that national decision-makers will, at all times, attempt to maximize broadly defined goals such as (1) national security -- that is, military defensive position and political integrity, (2) national economic well-being -- that is, sufficient supplies of food, raw materials, and manufactured goods to maintain or increase standards of living, and (3) international political stability -- that is, low levels of internal conflict and the security of the incumbent government. The ability to achieve these goals depends, in part, upon levels of productive capacity and social stability within the economy and society. The national political system is seen as reflecting these internal conditions and channeling influences from these sectors to the decision-making elite, or government (solid lines). At the same time, factors from the international environment have continuous influences in the domestic economic, social, and political subsystems (dashed lines) via contacts generated through international trading patterns, international political and economic organizations, and international contacts between firms, political parties, and so forth. Since internal economic well-being, political stability, and the security of an incumbent government may depend on the maintenance of favorable relations both among domestic factors and between domestic and international factors, decisions on essentially international issues will be, in part, a result of evaluations of the impact of these on the domestic environment.

To understand the range of decision options that a government may have to respond to any given issue, it is necessary to understand the complex set of interdependent relationships within the domestic environment and between the domestic and international environments which weigh upon decision-making. The accurate prediction of decision options and outcomes requires a close monitoring of internal political processes, including patterns and channels of subsystem influence on decision-makers and of bureaucratic processing of these domestic and other international influences.
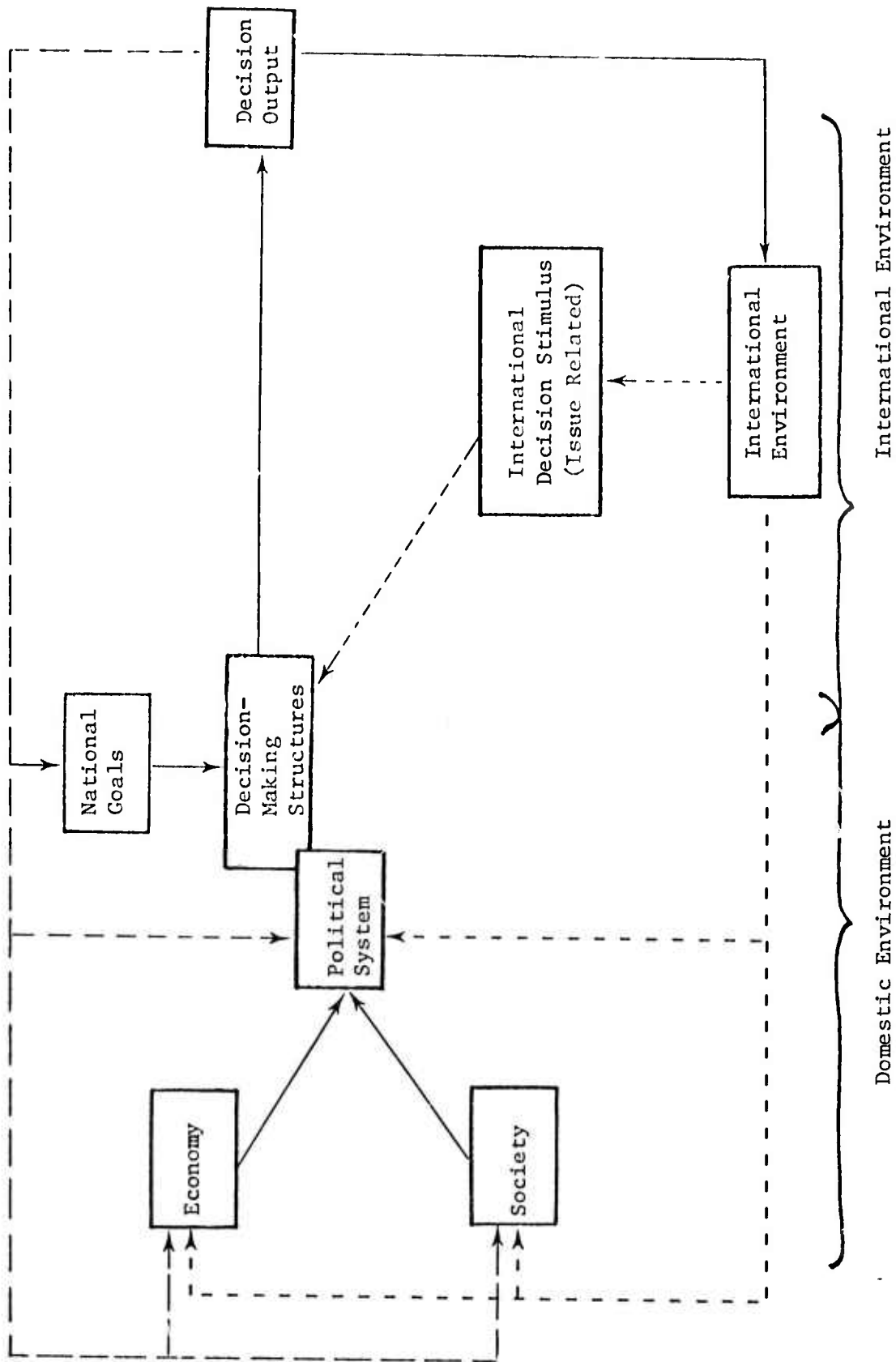
Figure 1. The Interrelationship of Domestic and International Environments
--- international influence on domestic environment
___ domestic influences on international environment

International Environment

Domestic Environment

Decision Output

International Decision Stimulus (Issue Related)

International Environment

National Goals

Decision-Making Structures

Political System

Economy

Society

Since environmental characteristics vary from country to country depending on levels of social and economic development, geographic location, regime type, international involvement, and other attributes, and since salient issues change over time, the task of predicting the range of decision options available to a given country at a particular point in time and in a specific issue area is quite complex. In particular, the set of domestic political, economic, and social variables which influence decision-making, and the weight of any one variable within the set, will vary across different polities.

The first step in research design must be to determine the set of variables that may be important factors influencing decisions within a given nation. Figure 2 provides a conceptual framework that can facilitate the identification of sets of variables for different polities and issue areas. In the figure, decision-maker accountability is used to refer to the relative sensitivity of decision-makers to influences from national economic, social, and political subsystems. Regime type and popular issue involvement are used as conceptual tools for isolating different polities on the dimension of decision-maker accountability. The diagonal line in Figure 2 describes the general prediction that accountability will be greater as regimes are more polyarchic-democratic. However, certain issues may mobilize greater popular involvement and more intense participation than would normally be characteristic for a given polity. Therefore if specific levels of decision-maker accountability in different issue areas can be determined on the basis of past behaviors, the analyst will be better able to assess likely domestic reactions to given issues and the potential impact which these reactions will have on decision-makers. He will be in a better position to monitor particularly important factors within the domestic environment which indicate the direction of specific policies and, given a finite range of decision options on any specific issue, he will be better able to predict decisions to be made.

Regime type may range from traditional-tribalist to personalist, centrist, elitist, or polyarchic (Wilkenfeld, 1973) or from autocratic to totalitarian

66

Figure 2. Decision-Maker Accountability

authoritarian or democratic. Comparative government scholars traditionally
associate these different regime types with distinctive bureaucratic
structures and formal mechanisms linking the population at large to
decision-makers and defining the range of participatory opportunities of
the population. Different political variables may be appropriate for
analyzing influence and decision processes within centrist-totalitarian,
and polyarchic-democratic regime types, even though issues confronting
these different polities may be quite similar. Thus, the isolation of a
given polity within one regime type category suggests a range of indicators
of political activity which must be monitored for that polity and others
like it, but which might be ignored in a different polity. It is hypothe-
sized that decision-makers will be more accountable the closer the regime
type approaches the polyarchic or democratic end of the continuum. In
addition, within each regime type, the incumbent government may be more or
less stable (threatened) or regarded as more or less legitimate by its
relevant constituencies or the population as a whole. The less stable or
legitimate an incumbent government, the more sensitive or accountable it is
likely to be to influences stemming from the domestic environment. That
is, in unstable regimes decision-makers will be more concerned that
decisions satisfy important political support groups than will stable
regimes that already enjoy sufficient political support. Because polit-
ical support is uncertain in unstable regimes, decisions there are also
likely to be more erratic and therefore less predictable than in stable
regimes.

Popular issue involvement depends on the issue area under analysis.
Specific issue areas may be more salient for one country than another.
For example, because of its high level of development, the United States,
until recently, has been less concerned about international economic
issues than about international political or military issues. Japan, in
contrast, because of its resource dependency, is primarily concerned
with international economic issues. By the same token, while Japan is
more concerned about the availability of raw materials and foodstuffs,

Brazil is more concerned with the availability of investment capital.
For any given issue area a variety of factors, immediate and historical,
influence the intensity of involvement of subnational actors in attempts
to influence decision outcomes. For example, issues regarding national
security, particularly direct threats to national security, may well
involve the population generally, while issues regarding specific armaments
or military alliances will involve only certain interest groups. Such
involvement may vary from country to country as a result of specific
historical experiences. In Japan the nuclear question arouses broad
popular concern, while in the United States popular concern on this ques-
tion is quite low. Issues regarding tariffs may involve only those groups
affected by the tariffs, while issues regarding availability of food
supplies may involve the population generally. The recent soybean
crisis in Japan is a case in point.

Depending on the salience level of the issue area in a given polity, the
scope of popular involvement may include the population at large, specific
interest groups, political party members, the government bureaucracy,
or only top decision-makers. In addition, the intensity of involvement
of any one of these sectors is likely to increase according to the degree
to which the immediate interests of the sector are perceived to be affected
by the decision outcome. Where decisions on specific issues have immediate
perceivable costs or benefits, the intensity of participation will be
greater than on issues where benefits and costs are less specific. Where
greater numbers of the population participate, or where participation is
particularly intense, decision-makers will be bound to take more account
of domestic considerations in making decisions regarding international
actors or issues (Rosenau, 1966).

The degree to which domestic factors will influence decision outcomes also
varies according to the urgency of a given decision and to the scope of its
potential impact on the national environment--its economic well-being and
national security. For instance, the decision whether or not to support

69

the Arabs in the recent Middle East confrontation, given the threat of an oil embargo, was both urgent and likely to have a broad impact on both the society and economy. This impact, in turn, was likely to have direct consequences for the tenure in office of the government responsible for the decision.

The multiple factors that influence decision-maker accountability indicate that in monitoring domestic influences on the external policy-making process, it is necessary to focus particular attention on those structures and processes within the political system that communicate public approval or disapproval to decision-makers. The degree of autonomy of decision-making elites within the political system and the nature of pressures and operating strategies of pressure groups from sectors outside the political system can be assessed by examining several aspects of the political system including size of the attentive public, legitimacy of the government in power, and degree of autonomy of the government in power. Once these characteristics are determined, the pattern of linkages between the political system and the domestic economic and social systems and between the political system and the international system can be explored in a variety of issue areas. In this way, those linkages and those factors that operate most intensely and most persuasively in determining decisions in individual issue areas can be specified. If, in a variety of specific decisions in a given issue area, the same forces are seen to exercise considerable influence, it can be hypothesized that these forces will generally be salient in the issue area. On the basis of such "historical" analyses, probabilistic weights can be assigned to various linkages to predict future decision outcomes in the issue area. It should be noted, of course, that while the range of variables to be examined may be applicable on a global basis, the specific linkages may differ for a given country or issue area for reasons of environmental variability as described above.

Figure 3 is an expanded version of Figure 1 in which the components of the decision process are broken down into more specific sets of variables. The boldfaced headings indicate general categories of important components of

70
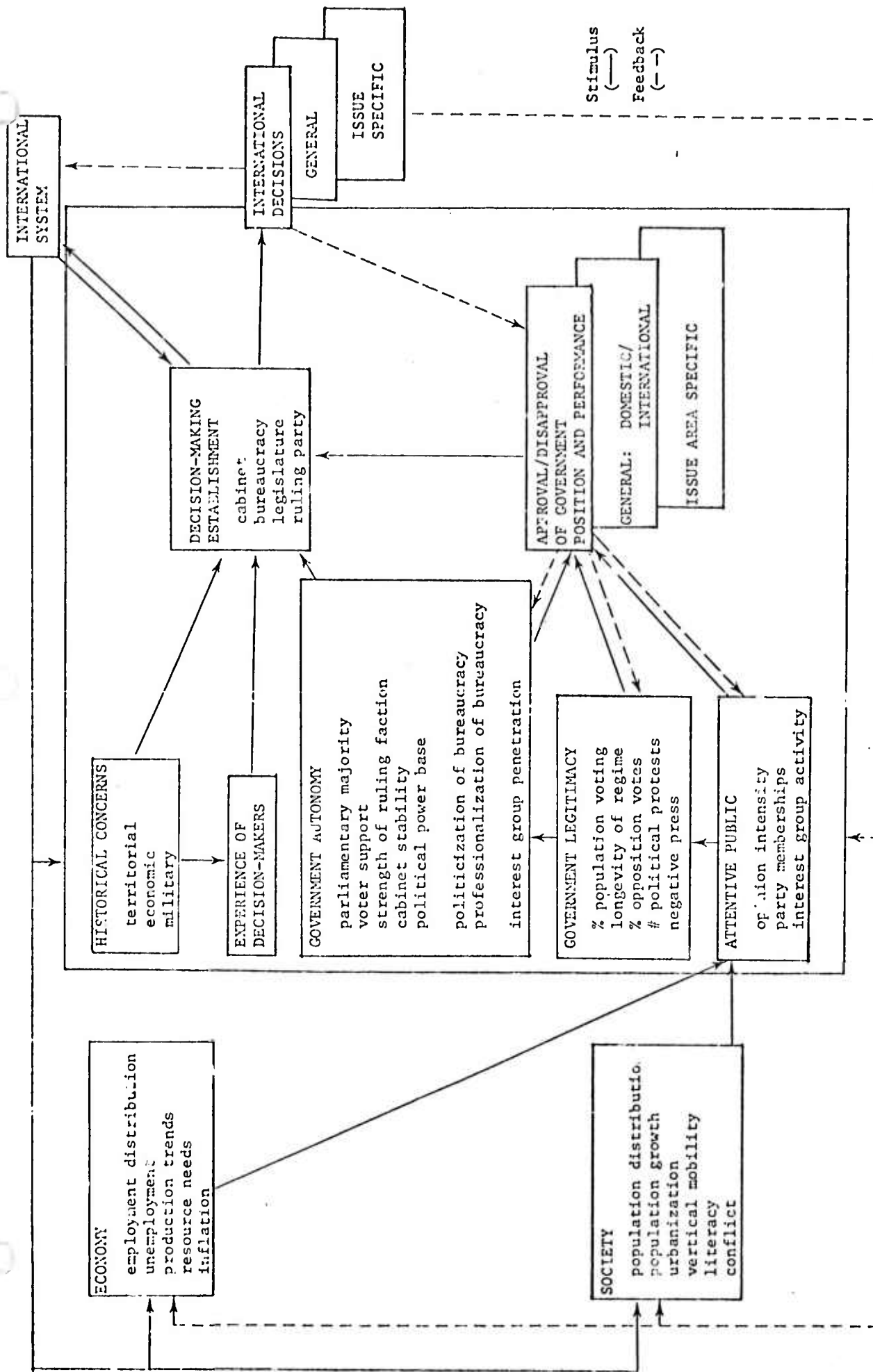
Figure 3. A Model of Domestic Influences on International Decisions

71

economic, social, and political subsystems which must be considered in
analyzing decision-making in any polity type. Different, though concept-
ually parallel, operational indicators would be selected for many of the
political subsystem components depending on the polity type of the country
being studied. The indicators suggested under each heading in the figure
would be appropriate for a polyarchic-democratic polity.

A fully operationalized version of Figure 3 would provide a highly sensi-
tive mechanism for examining general or issue specific interactions between
a given nation and the international system as a whole, or between dyads
of nations. More usefully, it would provide a mechanism for testing the
different impacts of change in the international system (for example, fuel
or food shortage, military mobilization of a neighbor, or a new alignment
pattern) or within the domestic environment (for example, rapid inflation,
critical resource shortage, mobilization of a strong political opposition)
on external decision outputs.

In Figure 3 the economy and society form the broad background from which
messages are channeled through the political system to decision-makers,
and which in turn receive the final impact of decision outcomes. Messages
from this background are registered most often with the attentive public --
the most politically aware members of the population as a whole. Opinions
within the attentive public determine government legitimacy and participa-
tion by the attentive public determines government autonomy. Size of
attentive public, government legitimacy and autonomy, and historical poli-
tical concerns and experience provide a relatively stable set of messages
which, when processed within the relevant decision-making establishment
(cabinet, bureaucracy, legislature), determine general decision-making
policy tone.

Specific domestic or international events may, at any time, result in a
shift in the level of popular approval or disapproval of existing policy
positions or performance. Such change in approval or disapproval may be

measured with public opinion records or with event records recording positions taken by important political, economic, or socio-cultural elites. When, at a given time, the domestic approval/disapproval indicator is seen to diverge sharply from its normal level, it can be expected that this divergence will result in an alteration in policy output or style. This will be more often the case the greater the impact of the shift in approval/disapproval is perceived to have on the durable features -- legitimacy and autonomy -- of the political system. Thus, approval/disapproval is closely related to popular issue involvement as described in Figure 2.

The Japanese Context

The concepts and variables in Figures 2 and 3 suggest areas which must be explored for indicators of domestic environment influences on the international behavior of Japan. Japan falls unquestionably into the polyarchic-democratic regime category in Figure 2. Decision-maker accountability and sensitivity to public opinion is therefore expected to be high on issues in which popular involvement is intense.

A variety of indicators, such as voter support for government, percent of opposition vote, strength of Parliamentary majority, opinion intensity, interest group activity, and level of approval or disapproval of government positions and performance, are suggested in Figure 3 as reflecting the sources of popular pressure on government decision-making. In selecting reliable and sensitive indicators from these, the specific conditions and time parameters of the research data base must be considered. In the present study, international event behavior data are available for the 31-month period between January 1972 through July 1974. This time span is not sufficiently long to warrant the use of many of the social, economic, and political indicators traditionally used in international relations research. For example, the current Liberal-Democratic Party (LDP) governing coalition has enjoyed a parliamentary majority in Japan throughout the post-World War II period. While

73

this has decreased slightly in recent years, as indicated in Table 10, the
LDP capacity to govern remains intact and most observers consider it
unlikely that the present distribution of party power will change sub-
stantially in the next decade. Because of the stability of the LDP
vote and of LDP seats in the Japanese Diet, electoral statistics are
inappropriate as monitors of domestic change factors for the present
study.

Even though voter support for the ruling party coalition has remained
constant over time, support for particular governments or party leaders
(in the Japanese case, the Prime Minister) has varied. The "approval/
disapproval of government position and performance" may therefore be a
useful indicator of shifting domestic opinion. Both opinion poll data
and event data recording positive and negative statements about gov-
ernment policy by domestic subgroups may be used to tap this concept.
Figure 4 plots the degree of popular support for the incumbent cabinet
from March 1970 through December 1974. Two government changes occurred
in this period, the transfer from Sato to Tanaka in July 1972 and from
Tanaka to Miki in December 1974. International issues were clearly opera-
tive in causing at least the first cabinet change. Sato "was compelled
to retire in 1972 after his pro-Taipei, anti-Peking diplomacy (inherited
from his predecessors who had opted for the path of following America's
leadership) had suddenly been rendered untenable and controversial by
the Nixon visit to Peking" (Tsurutani, 1974: 134).

It is also important to monitor the positions adopted by different
political parties in assessing likely domestic influences on inter-
national behavior. In spite of the unlikelihood of a radical change
in government, the Japanese opposition and factions within both the
ruling and opposition parties have considerable opportunity to raise
policy issues which may influence policy positions. Indeed, "internal
political considerations...and international, not domestic policies,
have been the main source of conflict between the ruling Liberal-
Democratic party and the splintered, largely left-wing opposition
parties" (Hellmann, 1972: 45).

74

TABLE 10

Party Voter Support in General Elections and Parliamentary Seats Allocated to Parties, 1955-1972 (in percentages)

Party	February 1955 Vote	Seats	May 1958 Vote	Seats	November 1960 Vote	Seats	November 1963 Vote	Seats	January 1967 Vote	Seats	December 1969 Vote	Seats	December 1972 Vote	Seats
Conservative and Independent[a]	66.8	65.1	64.5	67.8	60.8	64.9	59.6	63.0	54.4	58.8	53.1	62.4	51.7	58.3
Komeito[b]									5.4	5.3	10.9	9.7	8.4	5.9
Reformist[c]	32.1	34.7	35.5	35.7	39.3	35.3	40.4	37.0	40.1	36.2	35.9	28.2	39.0	35.6

a Category consists of Democrats and Liberals for 1955, Liberal-Democrats after 1955, and Independent and minor party representatives, most of whom affiliate with the Liberal-Democrats in Parliament.

b Clean Government Party (non-partisan)

c Left Socialist, Right Socialist Communist, and Farmer Labor Parties for 1955; Socialist and Communist for 1958; Communist, Social Democrat, and Democratic Socialist Parties, 1960-1972.

Sources: Hellmann, 1972: 47; Japan Statistical Yearbook, 1972: 596-7.
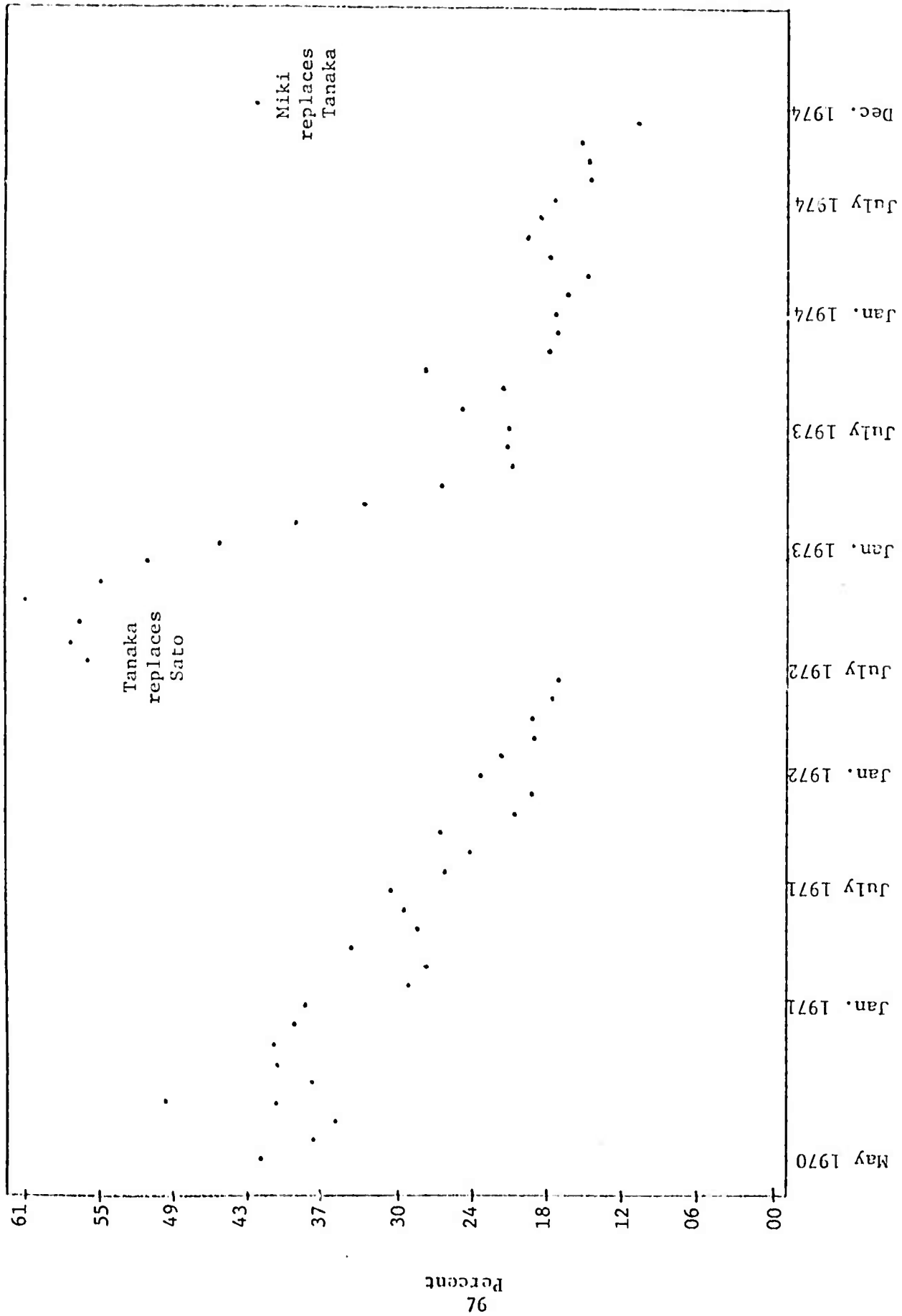
Figure 4. Popular Support for Incumbent Cabinet

Percent Positive Responses to the Question "Do you Support the (Prime Minister's Name) Cabinet?" – May 1970– December 1974. (Source: JIJI Press Monthly Polls)

This same author notes that public debate over alternative policy posi-
tions, as defined by government and opposition points of view, forces
the ruling coalition to consider options not of its own choosing.

> [The] belief in consensus -- that the government in power
> has a special obligation to respect and seek accommodation
> with the views of those out of power -- has led the social-
> ists to adopt rigid policy positions and gives special import
> to the huge gap between the conservatives and the opposition
> over the goals of international action....(T)his gap...has
> forced the Liberal-Democrats (despite their majority in the
> Diet) to consider scrupulously the socialist's position on
> major issues....(Hellmann, 1972: 49).

In addition, Hellmann notes that the opposition parties are almost com-
pletely preoccupied with international policy questions rather than
domestic policy questions (Hellmann, 1972: 50). They frequently use con-
frontation tactics to emphasize their demands.

> In support of their causes, the socialists have frequently
> adopted tactics of extralegal direct action-disruptive
> public demonstrations (demos) and physical obstruction of
> Diet proceedings...Such incessant and open criticism exac-
> erbates conflict over all international issues and corres-
> pondingly magnifies the importance of domestic political
> considerations in foreign policy decisions...This capacity
> to shape both the intensity and the substance of the poli-
> tical debate remains one of the most effective means of
> foreign policy influence for the Japanese oppositions gen-
> erally and the left in particular (Hellmann, 1972: 50).

Despite the apparent openness of the Japanese political system, the
makeup of the Japanese Government (the constraints of the parliamentary
as opposed to Presidential system, and traditional consensus-seeking inter-
action processes) provides decision-makers with considerable insulation
from forces pressing alternative policy positions. It is widely recognized
that most policy formulation takes place within the government bureaucracy
rather than at the cabinet level. Tsurutani notes that "Japanese foreign
policy is in large measure shaped by the Foreign Ministry's intrabureau-
cratic style of operation, the chief feature of which is decision-making

77

by consensus....The governing party merely confirms the bureaucratic tendencies of the Ministry, allowing the Ministry the decisive role" (Tsurutani, 1974: 127).

This bureaucratic aspect of Japanese policy-making is important (1) because of the ministry's high level of insulation from the public as a whole (a consequence of the life tenure and seniority system); (2) the high degree of penetration of bureaucrats into the political parties, especially the ruling Liberal-Democratic party (Tsurutani, 1974); and (3) the close relations between important interest groups, especially economic interest groups (Yanaga, 1968). Tsurutani maintains that

> With the seniority rule in inexorable control, the Foreign Ministry today continues to hold the basic policy orientation and political attitude that was shaped and initially became dominant in the Ministry during the first part of the 1950's.

> Within the context of (the Japanese) institutional structure..., such basic orientation and attitudes are impervious to environmental pressure and change precisely because the latter cannot threaten the elaborately routinized pattern of personal tenure and rewards....There is a built-in bias against situational flexibility (1974: 129).

Tsurutani's assertion is contradicted by Reischauer, who argues that the bureaucracy is not all-powerful:

> Public opinion and the interests of pressure groups, such as...the big business community..., furnish other important ingredients, while consensus decision by the party in powers, and the majority votes in the Diet that these produce, are the decisive elements in critical governmental decisions (1974: 149).

The forces mentioned by these and other authors as having particular impact on government policies suggest that, in the Japanese context, overall public opinion, specific party positions, and government and interest group positions on different issues are all elements of potential influence on international behavior. Thus, if an incumbent

78

government is enjoying low prestige, or if the opposition is taking
a particularly strong stand on a particular issue, decision-makers,
seeking to build or regain consensus, may become more active in the
contested policy area, or may modify the tone of their interaction with
international partners involved in the policy area. If, in contrast,
the government's position is firm and more strongly defended in public
than opposition positions, either a continuation of past policies or a
change in policy commensurate with the government position may be
expected.

OPERATIONALIZATION OF DOMESTIC POLITICAL INDICATORS

Both public opinion polls and statements or actions by different groups
appear appropriate as indicators of shifting opinion within Japan and of
different positions raised by government and opposition groups on specific
policy issues. In this section the following indicators of popular opinion
are operationalized: support for the governing party; support for the
incumbent cabinet; attitudes about the quality of life, cost of living
and relative prosperity; and attitudes toward selected other countries.
In addition, event-based indicators of the tone of interaction between
selected domestic actor dyads, representing government and opposition
forces, are developed. These indicators include measures of both overall
interactions and interaction on selected issues. These different indi-
cators will permit the subsequent evaluation of the relative influences
exercised by popular attitudes, bureaucratic forces, and organized poli-
tical party forces on international behavior.

Opinion Indicators

The Japanese press, government, and a large number of private institu-
tions have conducted opinion research on a wide variety of issues in
Japan (see Richardson, 1974). For our purposes it was necessary to
find polls which tapped Japanese opinion on important domestic issues
such as the state of the economy, satisfaction with existing government

79

and party preferences, as well as on international issues such as the
U.S.-Japanese Mutual Security Treaty, Japanese rearmament, and Japanese
alignment with the free world or neutralist or Socialist blocs. In
addition, it was necessary that the polls be conducted with sufficient
regularity that they would provide sensitive indicators of shifting
preferences and opinions for the period covered by the international
event data set recorded from FBIS, 1972-74.

After considering a variety of different polling sources, the JIJI Press
polls, a regular monthly survey conducted on a stratified random sample
of the Japanese population, were determined to be the best for our require-
ments (see JIJI Public Opinion Polls, Survey 231 in Zenkoku Yoron Chora
No Genkyo). The JIJI polls ask a basic set of questions in each survey,
in addition to topical questions. Those questions judged to be of poten-
tial use as indicators of domestic opinion include ones probing party
voting habits, support for the incumbent government, preferred countries,
alignment preferences, and opinion on current economic conditions and the
quality of life. Questions were translated from the Japanese and selected
responses were recorded in machine-readable form for use in the analysis.
Table 11 lists the questions responses, and dates covered for the opinion
indicators coded from the JIJI polls and used in the subsequent analysis.
It will be noted that two categories of opinion indicators are available,
(1) political opinion indicators, and (2) economic opinion indicators.

Domestic Tone Indicators

To tap the strength and focus of activity, as opposed to opinion, of
different domestic groups, event data were used as a behavioral indi-
cator of policy preferences and positions within Japan. Domestic
event data were collected from the same source (FBIS) as international
event data, using the DECS domestic coding system. Over 200 subnational
(domestic) actor codes were used in preparing the domestic event data.
Events themselves included categories for government structural change,
government policies toward the population (sanctions and relaxation of
sanctions) and statements by various actors about specific issues or

TABLE 11

JIJI Public Opinion Polls Survey 231

I. Political Opinion Indicators

Poll Question 1:

Which political party do you support?

        a. Liberal Democratic Party (LDP)
        b. Socialist Party
        c. Komeito (Clean Government Party)
        d. Japan Democratic Socialist Party (DSP)
        e. Communist Party
        f. Other Political Parties
        g. Between Conservative and Liberal, Choose a Conservative Party
        h. Between Conservative and Liberal, Choose a Liberal Party
        i. Support No Political Party
        j. Do Not Know

Poll Question 4:

Do you support the Sato Cabinet?

(Note: July 1972, Tanaka replaces Sato. December 1974, name of Premier excluded.)

        a. Support
        b. Do Not Support
        c. Do Not Know

Poll Question 7:

Do you think Japan at present should side with free world?

        a. Free World
        b. Neutral
        c. Communist Nations
        d. Do Not Know

Poll Question 8:

List up to three countries you like.

        a. United States
        b. Soviet Union
        c. Great Britain
        d. France
        e. West Germany
        f. Switzerland
        g. India

TABLE 11 (Cont'd)

    h.   Communist China
    i.   Korea
    j.   North Korea
    k.   None

Poll Question 9:

List up to three countries you dislike.

(same as above)

II. Economic Opinion Indicators

Poll Question 44:

Cost of living -- Do you think the price of commodities is leveling off?
Do you think it will still go up? Or do you think it will come down?

    a.   Leveling Off
    b.   Will Go Up
    c.   Will Come Down
    d.   Do Not Know

Poll Question 45:

Prosperity -- How do you view the prosperity of the people in general?
Do you think it is about same as the last month? Do you think it has
become worse? Or do you think it has improved?

    a.   Has Definitely Improved
    b.   Has Slightly Improved
    c.   No Change
    d.   Has Slightly Worsened
    e.   Has Definitely Worsened
    f.   Do Not Know

Poll Question 46:

Living -- How is your standard of living compared with this time last
year? Has it become easier? Or has it become more difficult?

    a.   Has Become Much Easier
    b.   Has Become Slightly Easier
    c.   No Change
    d.   Has Become Slightly More Difficult
    e.   Has Become Very Difficult
    f.   Do Not Know

policies. Due to the infrequency of occurrence of important structural changes or of government actions toward the population, only the category of statements and actions about policy and issues was used for analysis of the relation between domestic events and international behaviors.

The coding scheme for this category was closely parallel to that used for international events and the indicators developed from it were purposely tailored to parallel those used for international tone indicators (see "The Development of the International Behavioral Tone Index," in this chapter). Aggregations of domestic behavior categories were developed such that they would parallel those used for the international domain and would be comparable to the scalar values used in the computation of the tone indicator

$$I_t = \frac{\text{Sum of weighted frequencies}}{\text{Sum of unweighted frequencies}}$$

In this way, statements and actions by domestic actors as they discuss or debate among themselves on issues with potential international importance may be assessed for their impact on policy positions taken by Japan in dealing with other nations.

The final aggregation of domestic event codes, consisting of four positive and three negative categories, is presented in Table 12. A comparison of this coding scheme with that for the international events reveals several necessary differences. These are due both to differences in the original DECS coding format and to the different political context which the final aggregations are meant to reflect. For example, "demonstrate" is coded as a protest activity in the international scheme because in the Japanese case demonstrations about other nations' behavior are largely non-military, symbolic expressions. A demonstration in the domestic context, in contrast, is an activity that directly threatens the legitimacy of an incumbent government or current policy. In the Japanese case this is particularly so since demonstrations are most often led by opposition parties and are a major artifact of the opposition strategy

83

TABLE 12

Domestic Event Aggregation and Weights

	Weight for Tone Scale	Aggregate Behavior Type	Components
Most Positive	+16	Agree	Agree, make formal agreement, reward, grant
	+9	Support	Approve, promise, request
	+4	Propose	Propose, urge policy
Neutral	+1	Communicate	Meet with, comment, refuse comment
	-4	Protest	Friendly warning, reject, accuse, protest, deny
	-9	Threaten	Demand, warn, threaten, reduce relations
Most Negative	-16	Physical demonstration	Physical demonstration of protest

of promoting issues within the framework of Japanese consensus decision-making. Demonstrate was therefore regarded as the most negative of domestic behaviors and was given a weight of -16 in the aggregate scale.

One of the most frequently recorded behaviors for domestic actors proved to be that of proposing, urging, or implementing policy. Because of the importance of public debate over alternative policy positions in assuring government accountability to major forces within the population, and because of the function which this debate has in maintaining government legitimacy, a separate category for the issue-raising activity of proposing or urging policy (propose) was maintained in the domestic data aggregations, whereas in the international aggregations the activity was included in the "support" category.

Given the non-commital tendency of the Japanese policy-making process --
recall the remark "the government has made major political decisions...
only when it was no longer possible to avoid them" (Hellmann, 1972: 44)
-- the adoption of a clear positive position on a policy question, for
example, support for a policy, was accorded a higher weight (+9) in the
domestic context than in the international (+4). The most positive
behavior in the domestic context was agree, since activities such as
yield, used in the international coding, were inappropriate for des-
cribing Japanese domestic behaviors.

The above discussion indicates that the aggregations of domestic behavior
have scalar values, at least at the ordinal level, in terms of most nega-
tive to most positive behaviors. They therefore satisfy the criterion
of face validity. To test the empirical reliability of the hypothesized
scale, a Guttman scalogram analysis was performed which produced a coef-
ficient of reproducibility of .90 and a coefficient of scalability of
.50 for the overall aggregation.[13] As in the case of the international
behavior categories, this test reinforces our confidence that the aggre-
gate categories can be weighted in accordance with the scale, and can be
combined to form a useful index of the tone of domestic activities.

Domestic Dyad Indicators

Each of the domestic events recorded was coded to reflect the domestic
actor responsible for the action or statement and the domestic target
of the action or statement. Over 200 actor/target categories were
available in the coding scheme (see the Codebook in the Appendix). The
low frequency of use of many of these categories and the need for a par-
simonious set of actor/targets for the final analysis required the clus-
tering of actor/target categories.

---

[13] A coefficient of scalability below .6 is generally considered unac-
ceptable. However, the coefficients for the separate positive and nega-
tive aggregations were acceptable. For the positive scale, the coeffi-
cient of reproducibility was .97, and of scalability was .79. For the
negative scale, the coefficient of reproducibility was .97, and of scala-
bility was .65.

A preliminary aggregation of major actors, as suggested by both litera-
ture on Japanese domestic politics and the research questions posed for
analysis, was developed. The list included actors both in and out of
government as follows:

Government Actors	Non-Government Actors
National Executive	Opposition Parties and Leaderships
Cabinet Ministers	Economic Organizations and Interest
Foreign Ministry	Groups
Trade and Finance Ministries	Other Organizations and Interest
Defense Ministries	Groups
Other Domestic Ministries	Sub-National Governments
Government-Owned Industries	
Ruling Party Leadership	
Legislature	

The research design required that domestic behavior trends within Japan
be emphasized to predict a set of international behavior trends.   In
order to describe the domestic trends, actor/target dyads were developed
which reflect the source and direction of internal debate over policies.
Five dyads were computed from the above aggregations of major actors.
These are:

1. Government actors' statements and actions toward non-
   government targets;

2. Non-government actors' statements and actions toward
   government targets;

3. Government actors' statements and actions toward other
   government targets;

4. Non-government actors' statements and actions toward
   other non-government targets.

The fifth dyad, reflecting the sum of all domestic actions and state-
ments, was also computed to provide a single indicator of domestic
behavior which could be associated directly with the international
behaviors adopted by Japan in its relations with other countries.

86

Domestic Issue Area Indicators

The same set of issue-subject codes used in coding international events was used to code the substantive content of domestic actions (see "The Development of Issue Indicators" in this chapter). Five major issue areas reflecting domestic concerns with potential impact on international behavior were identified through substantive analysis of current literature on Japan. Four of these are repeated from the international issue areas: political-military security, diplomatic relations, resource dependency, and international trade. The fifth, domestic economic conditions, is of particular importance in the analysis of the impact of domestic conditions on international behavior. Table 13 gives the number of events recorded for each of these five issue areas and for all issues and events in each domestic dyad used in the analysis.

TABLE 13

Distribution of Domestic Events by Dyad[a] and Issue Area
(Percents in Parentheses)

	All	Pol-Mil Security	Diplomatic Relations	Resource Dependency	Domestic Economy	International Trade
Government→ Non-Government	1254	232 (18.5)	334 (26.6)	244 (19)	464 (37)	168 (13.4)
Non-Government→ Government	795	243 (30.6)	230 (28.9)	94 (11.8)	205 (25.8)	52 (6.5)
Government→ Government	1142	182 (15.9)	404 (35.4)	254 (22.2)	346 (30.3)	126 (11)
Aggregate Domestic	3668	734 (21.8)	1044 (28.5)	660 (17.9)	1101 (30)	379 (10.3)

[a] The non-government/non-government dyad is eliminated here as it is assumed not to be of direct relevance to international behaviors.

The domestic dyad interactions are expected to reflect different positions on different international issues. These positions are determined by the role which the dyad actors play in Japanese domestic political life.

Government and opposition (non-government) statements are expected to
reflect the different political postures assumed by these groups. As
has been noted in the discussion above, the opposition is expected to be
concerned with political military questions, especially rapprochement
with the People's Republic of China and with the Soviet Union and disengage-
ment from the U.S. alliance. As a consequence it is also expected to favor
improved diplomatic relations with the People's Republic of China and the
Soviet Union, and be hostile toward the United States. The government as
the mainstay of the status quo would be expected to adopt the opposite posi-
tion on these issues. However, recent government searches for a new role
for Japan in the international sphere indicate that the government might
also favor, at least mildly, some of the same political-military and dip-
lomatic positions as the opposition. The government should be more con-
cerned with economic questions, since, in part, its support within the
population is based on its successful management of both domestic and inter-
national economic questions. Inter-governmental dialogue is expected to
reflect more mundane bureaucratic and political concerns such as diplomatic
relations and economic performance.

It is interesting to note the reflection of these roles in the different
emphases which emerge in the dyadic relations presented in the table.
The political-military security issue is a major topic of non-government→
government interaction, while diplomatic and economic issues are more fre-
quent in inter-governmental dialogue and in government statements as a
whole. The most important issues in within-government dialogue and in
government statements to the population are those relating to the domestic
economy and to diplomatic relations. The high frequency of the latter
category is to be expected, given the heavily bureaucratized nature of
Japanese international relations, and the low-key and pragmatic approach
which Japan has adopted to pursue its international goals.

CONCEPTUAL FRAMEWORK

The predictive value of economic trends in the analysis of international
interaction is especially crucial when the country under scrutiny is as
economically oriented as Japan. If a nation's aims are defined largely
in economic terms, it is likely to formulate its international behavior
toward other nations to maximize these objectives. Thus, external and
internal economic factors may weigh heavily on national goal formation
and interactive patterns. Changes in the economic environment may have
important implications for predicting the probability of a nation's
behavioral direction on many diverse international issues, political
and military as well as economic. In this section a set of economic
predictor variables of international interaction is presented. They
are employed in an empirical analysis of Japanese international behavior
in Chapter 9.

The initial problem confronting the effort to relate economic trends
to quantitative indicators of international behavior is the selection
of a set of economic variables. The chosen variables must meet three
substantive and one "practical" criteria. The practical criterion proved
to be as difficult to satisfy as any of the others. Very simply, the
data on any selected variable must be available prior to the time period
of international behavior it is to predict. Examples of economic variables
that are available only after a substantial lag are legion. Gross
national product, the most widely employed measure of economic perform-
ance, is reported quarterly and usually two months following the close
of the calendar quarter.

By restricting attention to those economic variables reported without
undue delay, the first substantive criterion may be considered. Given

89

a choice of two possible variables, the one reported for the smallest
time interval is to be preferred; that is, if variable A is reported on
a quarterly basis while variable B is reported monthly, variable B is to
be preferred. The justification for this criterion is straightforward.
The forecasting problem is admittedly difficult. The indicators of inter-
national interaction can be constructed for any time period of one day
or more. In practice, one week is commonly the time interval. If
exceptionally longer time periods must be employed to insure consistency
with the time period of the economic data, information is lost. Giving
up information essential to any estimation is simply foolhardy.

The second substantive criterion requires that the chosen economic vari-
ables provide a "reasonable" description of the performance of the Japan-
ese economy. "Reasonable" is of course determined by judgment based on
experience. Literally thousands of economic variables describing the
Japanese economy are available. Clearly it is impossible to consider
them all, yet it is necessary to cover the main features of the Japanese
economy.

The final criterion is that the chosen variables must reflect both inter-
national economic conditions as they are related to the Japanese economy
and domestic economic conditions. This requirement is particularly
important for Japan. The Japanese have long been characterized as
"aggressive exporters," and are significant participants in world mar-
kets.

OPERATIONALIZATION

Following these criteria, a set of 18 economic variables to be employed
as potential predictors were identified. The variables are listed in
Table 14 and are all available in a variety of sources. They were drawn
from publications of the Organization for Economic Cooperation and Devel-
opment: Main Economic Indicators and Trade Statistics, Series A. The
data were checked for consistency and agreement with the data reported

90

TABLE 14

Economic Variables

Indicators of International Economic Position:

M	Total Japanese imports, measured in millions of \$US, monthly
X	Total Japanese exports, measured in millions of \$US, monthly
M_{US}	Japanese imports from the United States, measured in millions of \$US, monthly
X_{US}	Japanese exports to the United States, measured in millions of \$US, monthly
M_{EEC}	Japanese imports from member countries of the European Common Market, measured in millions of \$US, monthly
X_{EEC}	Japanese exports to EEC member countries, measured in millions of \$US, monthly
M_{USSR}	Japanese imports from the USSR, measured in millions of \$US, monthly
X_{USSR}	Japanese exports to the USSR, measured in millions of \$US, monthly
R	International reserves, measured in millions of \$US, monthly

Indicators of Current Economic Conditions:

CPI	Consumer price index, 1970=100, monthly
PI	Production index, 1970=100, monthly
CU	Capacity utilization rate, monthly
W	Index of monthly wage earnings, 1970=100, monthly

Leading Economic Indicators:

NO	New orders for machinery (excluding ships), measured in billions of yen, monthly
WPI	Wholesale price index, 1970=100, monthly

Other Relevant Economic Indicators (insufficient data available):

PPI	Petroleum products price index, 1970=100, monthly
GRC	Growth rate of Japanese economy in current prices, quarterly
GRR	Growth rate of Japanese economy in real terms (1965 prices), quarterly

91

by the Japanese Government in Japan Statistical Yearbook. Finally, the data for international reserves (R) were obtained from International Financial Statistics published by the International Monetary Fund.

Most of the variables in Table 14 are familiar and do not require explanation. Brief remarks describing four may be required. CU, the capacity utilization rate, is a measure of the percentage of plant capacity actually used during a month. It serves as an indicator of the economy's current performance in terms of existing capability. W, the wage earnings index, represents the best available representation of consumer welfare, recognizing that consumption figures are available only after a substantial delay. R, international reserves, includes the Japanese government's holdings of foreign exchange (currencies of other countries) and its SDR (Special Drawing Rights) position at the IMF. R represents the country's ability to withstand a "run" on its currency or a temporary trade imbalance without devaluing its currency. NO, new orders, is included because it is a principal indicator of future economic activity.

Except for the last three variables in Table 14, data were collected monthly for the period January 1972 through July 1974. A consistent series for PPI, petroleum product price index, could not be found. A substantial break in the series required that it be deleted from the final estimating equations reported below. Growth rates, GRC and GRR, were initially included even though the data are available only on a quarterly basis. Several attempts were made to employ these variables in estimating equations but the nonconformity of observations forced their eventual exclusion. In most cases, NO values (prior in time to growth rates) were able to account adequately for the expected predictive ability of growth rates.

CHAPTER 4
New Indicator Methodologies Developed

Event Patterning for Decision Analysis
Power Strategy Impact Analysis

In this section a method for describing and predicting international dyadic interaction is developed. This method provides the policy analyst with a highly visual means of tracking behavioral trends over time as well as forecasting possible future patterns. In addition, this event patterning technique is amenable to several statistical forms of analysis that potentially enable the development of probability and "barometer" measures of shifts in future dyadic relations.

THEORETICAL CONCEPT

Much effort has gone into collecting and coding event data. An equal amount of effort has also gone into interpretation of event data patterns. Generally, research efforts that have analyzed dyadic interactions over time have observed fluctuation in the tone of policy -- the relative cooperative or conflictual nature of events between nations -- or they have been based on frequencies of all or of selected types of events plotted over time as indicators of change in dyadic relations.[1]

The relationship between tone and frequency has meaning in dyadic interactions. A pattern of events in which frequency tends to increase as tone becomes more positive and to decrease as tone becomes more negative can describe, for instance, a situation in which one country is trying to minimize the negative implications of certain aspects of policy toward another. The converse might also be true; increased frequency with increased intensity of negative signals toward a country may be used to indicate displeasure. In both cases the interactions described may represent ongoing behavioral trends or shifts from previous behavior modes. To facilitate

---

[1] See, for example, Azar (1970), Burrowes and Spector (1970), McClelland and Young (1970), Corson (1971), CACI (1974). See also the sections of Chapter 3 discussing the tone and frequency indices.

observation and analysis of such patterns, it is useful to examine dyadic
interactions in terms of frequency and tone over time. The pattern anal-
ysis technique described in this section is designed to incorporate these
three dimensions into a single indicator or monitor of interactive behavior.

The basic technique behind the pattern analysis is the plotting of policy
tone against frequency of event interactions over time on the dimensions
illustrated in Figure 1.[2] Index values (described earlier in Chapter 3)
are used on the horizontal and vertical axes to measure the behavioral
tone and frequency characteristics of dyadic interactions respectively.
When data points representing time series observations are plotted on
the axes, these values form patterns which can be associated with var-
ious areas in the four quadrants of the graph. Each area characterizes
particular behavior dimensions. Based on the attributes of frequency and
tone, each area can be conceptualized in a preliminary fashion. Hostile
relations are represented on the left side of Figure 1, ranging in event
intensity from hot war (high intensity) to cold war to ruptured relations
(low intensity). Somewhat comparable typologies are represented in the
center (more or less ambivalent relations) and on the right side (friendly
relations) of Figure 1. These conceptual definitions and boundaries of
quadrant areas can be improved by empirical event interaction studies
applied to a large cross section of international dyads.

OPERATIONALIZATION PROCEDURES: DATA PREPARATION

The development of the event patterning analysis went through several
phases in which various alternative data preparation approaches were
considered. Several of these approaches are discussed below.

---

[2] Gernot Kohler (1975) has independently developed a similar three-
dimensional approach to event patterning. Kohler's work is based on
Deutsch's conceptual writing on the covariance of rewards or interests
between countries, in which he plots mutual relevance (share in each
actor's transaction flows or interaction frequencies) against covariance
of rewards or interests (positive vs. negative) (Deutsch, 1966). Deutsch
(1968) also suggests graphing of frequency against intensity (percent
hostility). While conceptually similar, Kohler's approach differs tech-
nically in several ways. See the discussion on the international tone
index (Chapter 3) for further elaboration.

QUADRANT II
Event
Intensity (+)
QUADRANT I

Hot
War

Intense
Ambivalence

Integration

Hot
War

Strong
Friendship

and

Cold
War

Crises
Threatened

Alliance

- Crisis
Situations

Cold War
Event
Tone (-)
- Non-Crisis
Situations

Cool   Neutral   Warm
Relations

Warm
Relations

Event
Tone (+)

Ruptured
Relations

Distant
Friendship

Cool

Warm

Unconcern

QUADRANT III

QUADRANT IV

Event
Intensity (-)

Key:

Event Intensity = Deviation from normal (expected) frequency of event inter-
action, using the intensity index developed in Chapter 3

Event Tone = Positive or negative behavioral tone, using the international
behavioral tone index developed in Chapter 3.

Figure 1. Conceptual Areas and Dimensions of International Dyadic Behavior

96

The first approach examined was a simple plot of all the data points for the period of the FBIS data (January 1972 through July 1974) aggregated by one- and five-week intervals. These data plots provided some information for analysis: data point centroid locations; overall data point patterns -- circular, elliptical, or otherwise; major axis slopes for patterns with unequal axis lengths; direction (angle) from the centroid; distance from the centroid; location in the various quadrants. These gave a significant amount of overall information, but were not amenable to longitudinal analysis because of the highly erratic variation of weekly tone and frequency values. Spectral analysis indicated that there were significant pattern tendencies in the data, warranting investigation of smoothing techniques to facilitate longitudinal pattern analysis.

The approach used for smoothing the data was the computation of moving averages. Moving averages were calculated for 5-, 9-, 13-, and 26-week periods. The 13-week moving averages appeared to give the best results in terms of limiting random erratic behavior while avoiding excessive loss in patterned variation. This development of 13-week moving averages appears compatible with the results of Moore and Young (1969) who found that the best predictions of behavior using median frequencies occurred when using the immediately preceding three-month period (they had also tested 3-, 6-, and 12-month time lag intervals). The variations in 13-week moving averages reflect only the difference between the index values for a given week and the thirteenth preceding week.[3] The values of

---

[3] This may be explained as follows: If the moving average associated with week n is m_n, and the index value associated with a given week is i_n, then:

$$m_n = \frac{\Sigma(i_{n-12} + i_{n-11} \cdots i_{n-1} + i_n)}{13}$$

$$m_{n+1} = \frac{\Sigma(i_{n-11} + i_{n-10} \cdots i_n + i_{n+1})}{13}$$

and $m_{n+1} - m_n = \frac{i_{n+1} - i_{n-12}}{13}$

the 13-week moving averages reflect the influence of all 13 weeks. The plots of 13-week moving averages will moderate erratic week-to-week fluctuations in index values, and will produce patterns to the extent that weekly variations in the 13-week moving averages show a tendency to cumulate in one direction or another, rather than fluctuate randomly. In the case of the U.S.-Japanese reciprocal dyad, both tone and frequency plots against time are highly patterned. The degree of curve smoothing accomplished by the 13-week moving averages is attested to by the fact that curves can be fitted with quartic parabolas to explain a high degree of the variance in values, particularly in the first 80 weeks of the period examined.[4] Thus the 13-week moving averages produce smooth patterns compared to the erratic nature of 1-week averages; yet, the 13-week moving averages are sufficiently responsive to the underlying data variations to produce clear, definitive patterns of change over time.

To summarize, the preparation of data for use in the pattern analysis procedures consists of computing 13-week moving averages for the tone and intensity indices described in Chapter 3, and of plotting the resultant time-sequenced values on the tone and intensity axes.

OPERATIONALIZATION PROCEDURES: PATTERN DEVELOPMENT AND ANALYSIS

There are many different types of patterns that can result from the time-sequenced plots on the frequency and tone axes. Various pattern types are illustrated in Figure 2 and are discussed below in terms of interpretable pattern characteristics.

Figure 2a illustrates the pattern characteristics of stable relations -- a tightly clustered distribution of data points within a relatively

---

[4] Three quartic parabolas (for overlapping sequential time periods) explain over 90 percent of the variance in U.S.-Japanese event frequency over the first 80 weeks of the 123 examined by 13-week moving averages. One quartic parabola explained 74 percent of the variance in the pattern including the remaining weeks. In U.S.-Japanese event tone, two quartic parabolas explain over 77 percent of the variance in the first 80 weeks, and one quartic parabola explained 43 percent of the variance in the pattern including the remaining weeks.

Figure 2.   Illustrative Time-Sequenced Data Patterns

(Frequency +)

(Tone −)   (Tone +)

(Frequency −)
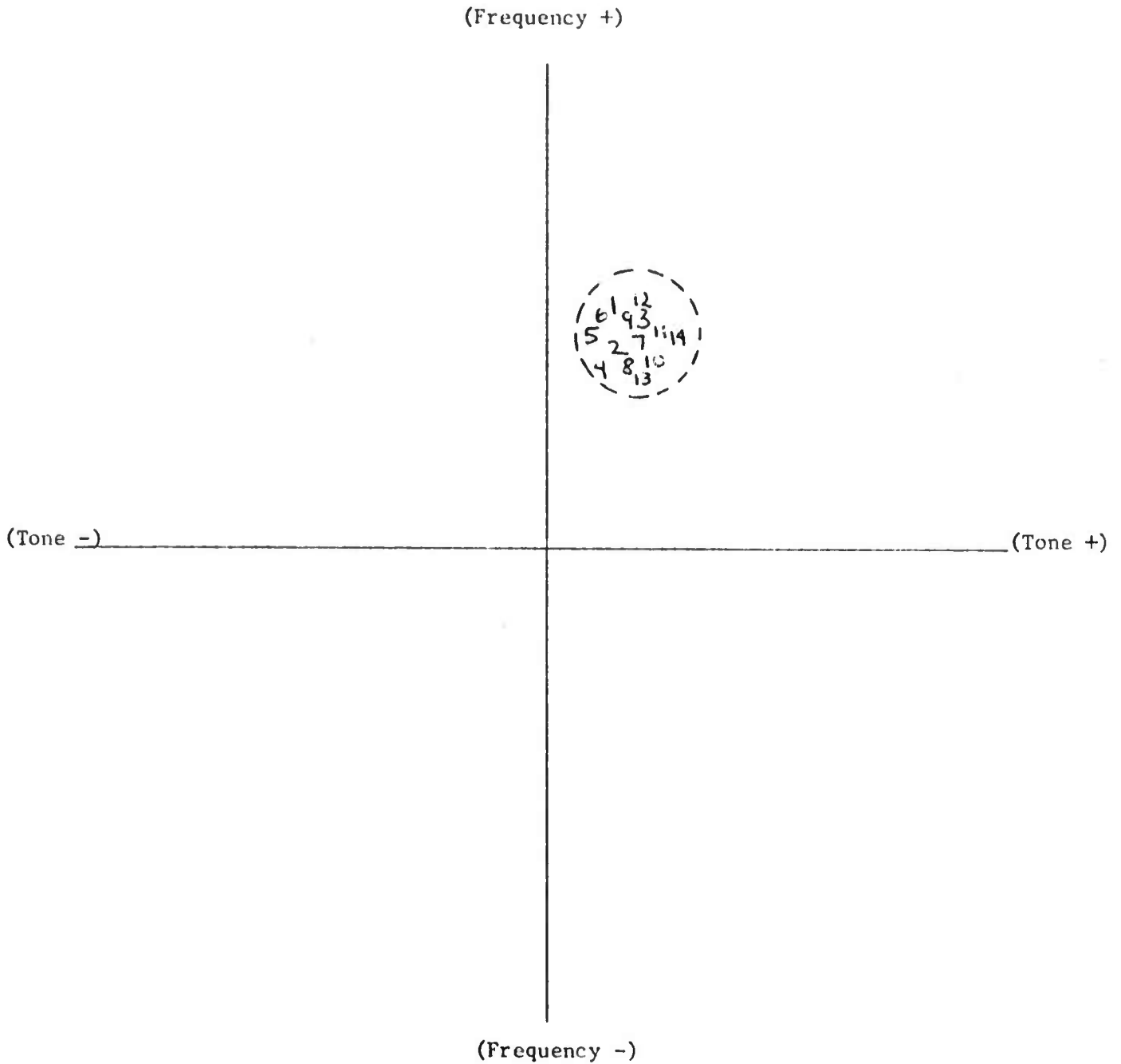
Figure 2a.   Stable Relations

Legend: Throughout Figure 2 data points are indicated by a number representing
          the week which represents a 13-week moving average (for that week and
          the 12 preceding weeks).   In Figures 2c through 2e only every third
          week is shown to avoid clutter.

99

confined area. This area may reflect either the overall range of normal relations[5] for a given country in interaction with another, or a temporary, stable period within an otherwise deviant behavior pattern. Interpretable characteristics of such a data pattern include:

- The location of the centroid of the data. This location defines the quadrant and area within the quadrant (see Figure 1) that characterize the dyadic relations for the period involved.

- The standard deviation of the data points from the centroid. This standard deviation provides a measure of the degree of stability of relations for the dyad during the period involved.

Figure 2b illustrates the pattern characteristics of a perturbation in relations such that they change from an original condition, then return to that condition.[6] Interpretable characteristics of such a data pattern include:

- The time-bound regression line for the data points of a pattern.[7] This regression line or vector can

[5] This concept is identified by Azar (1972: 184): "Over a period of time any two nations establish between them an interaction range which they perceive as "normal." This normal relations range (NRR) is an interaction range (on a scale from very friendly to very hostile) which tends to incorporate most of the signals exchanged between that pair..."

[6] The illustration and discussion which follow are given for a relatively straight line movement of the data. A similar, though more complex, illustration and discussion could be developed for curvilinear movement.

[7] A pattern is defined for these purposes as either a clustering of points such as described in conjunction with Figure 2a, or a collection of points describable by a single regression line with unidirectional time-sequencing of points. Thus, Figure 2b has two patterns: one including data points 1 through 12, and another including data points 12 through 20. Essentially, regression techniques are employed here solely to define the degree to which a time-bound set of data points form a unidirectional straight line pattern. R^2 is referred to not as a predictive statistic, but as an indicator of the extent of deviation from a straight line pattern. As Tufte (1975) points out, regression may successfully be used with relatively small numbers of data points (he uses it for 8) if patterns are not sufficiently

100
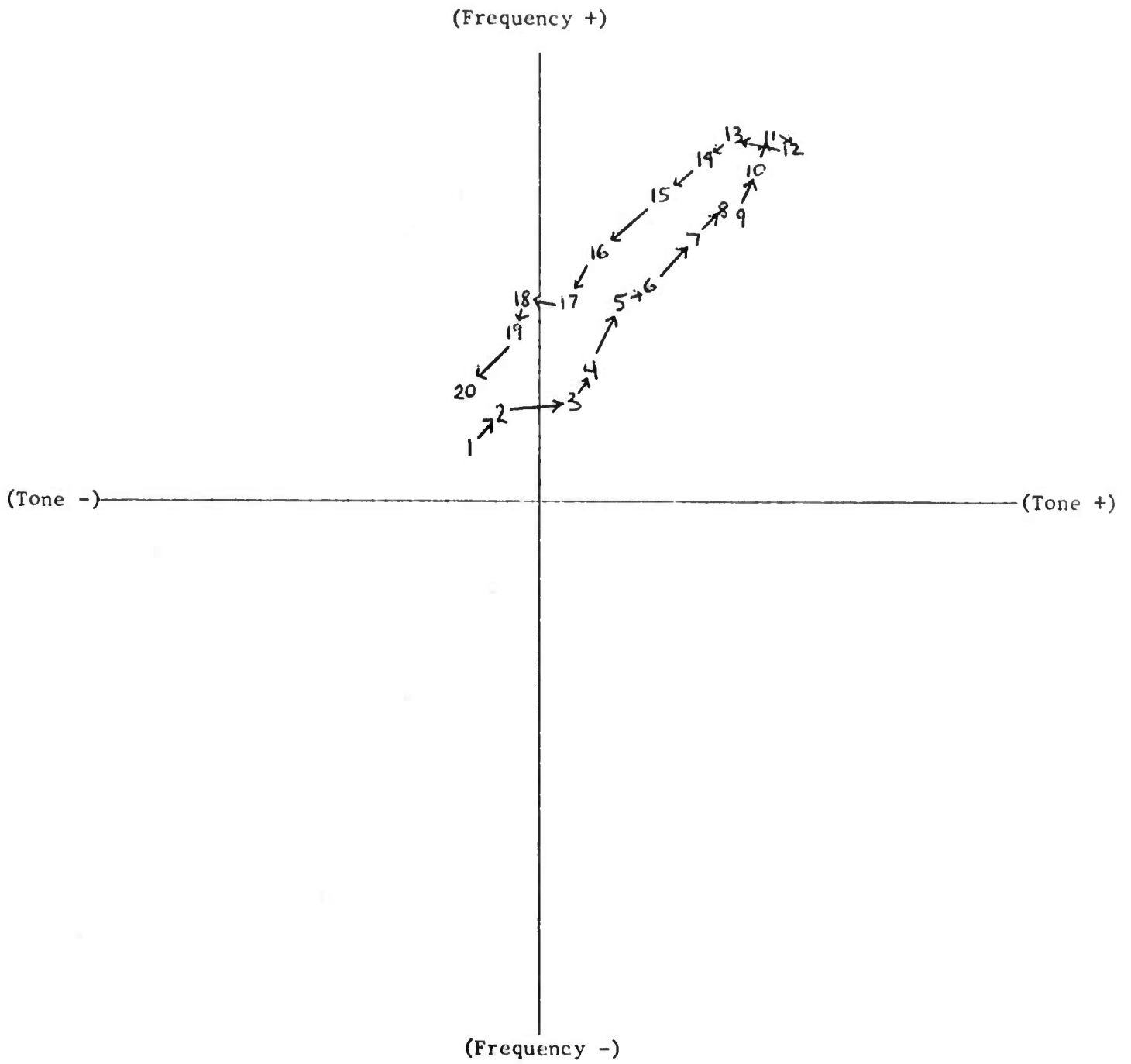
Figure 2b. Excursion from and Return to Start Point

be described in terms of the angle it forms with the horizontal (tone) axis;[8]

- The location of the midpoint (median) of the vector pattern[9] with respect to the different quadrants and areas therein;

- The locations of the endpoints of the vector pattern with respect to the different quadrants and areas therein;

- The rate and direction of movement along the vector (rate of movement = density of points in the pattern).

Figure 2c illustrates multiple excursions from and returns to a stable base posture. In Figure 2c the dotted circle encompasses an area including the start and finish points of the three vector pairs illustrated. This is an empirically based normal relations area. The three pairs of patterned deviations are describable by the angle of the regression line, the location of midpoints and/or endpoints of the pattern vector, and the rate of movement in the pattern. Note that for pattern pairs of this type, regression line angles and midpoints and endpoints will be very similar, but the rate of movement in the patterns may be quite different, and the directions of movement will be opposite.

---

deviant to cause significant variations in the regression equation when each outlier is successively omitted from the computations. This is a judgmental matter involving the degree of accuracy imputed to regression-derived parameters in interpreting the patterns.

[8] The use of this angle was found preferable to the use of the slope of the regression line (from which it is computed), particularly for angles in the vicinity of 0, 90, and 180 degrees, where slope values vary drastically for small angle changes.

[9] The median was preferred over the mean as more characteristic of the total path over which the data points move. The mean would be more characteristic of the time spent traversing various portions of that path.
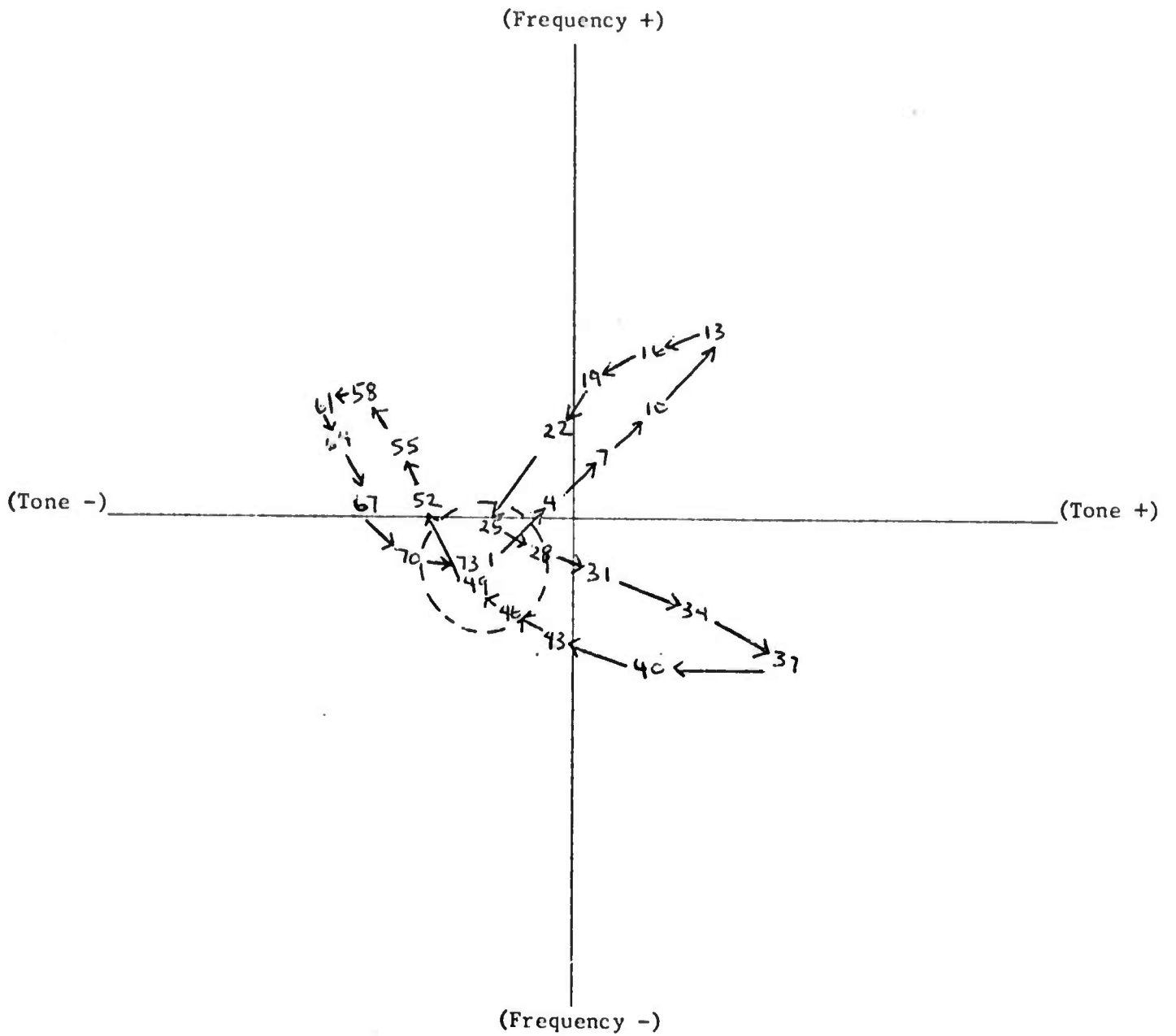
Figure 2c.   Excursions from and Returns to Stable Base Posture

103

Figure 2d illustrates movement from an area of normal relations to a
newly established area of normal relations with excursion patterns. Note
that this movement involves a single movement pattern, describable in the
same terms as the individual patterns of the excursion pairs.

Figure 2e illustrates a hypothetical movement from a stable alliance
pattern to a stable war pattern, moving through a stable base area with
excursion patterns. With sufficient testing it is expected that an
empirically verifiable typology of such overall movement patterns can
be developed.

ANALYTIC USES OF EVENT PATTERNING: THE TEXTURE OF INTERNATIONAL DYADIC INTERACTIONS

The patterns described above can be employed for a number of explanatory
and descriptive purposes in the analysis of dyadic interactions. Vector
patterns can be developed for specific issue areas as well as for overall
relations. This will permit comparative analyses to ascertain which
issues drive overall relations in a particular direction, to what extent
issues have overall active significance, and which are passive or moder-
ating in their effects. The patterns, overall and/or by issue area, can
be compared between dyads -- not only between reciprocal dyads but also
between non-reciprocal dyads.

The location of pattern vectors (starting points, midpoints, centroids,
endpoints) in the four quadrants of the plots can be used to provide con-
ceptual and empirical[10] contexts for the patterns. For example:

- A stable movement pattern may be entirely within the
  zone of normal relations -- or its centroid may be
  there, while portions of the pattern, or an outlier
  of it, may lie in another area.

---

[10] This is so particularly after the establishment of empirical boundaries
of the areas described in Figure 1 is accomplished, as we discussed in the
preceding section.
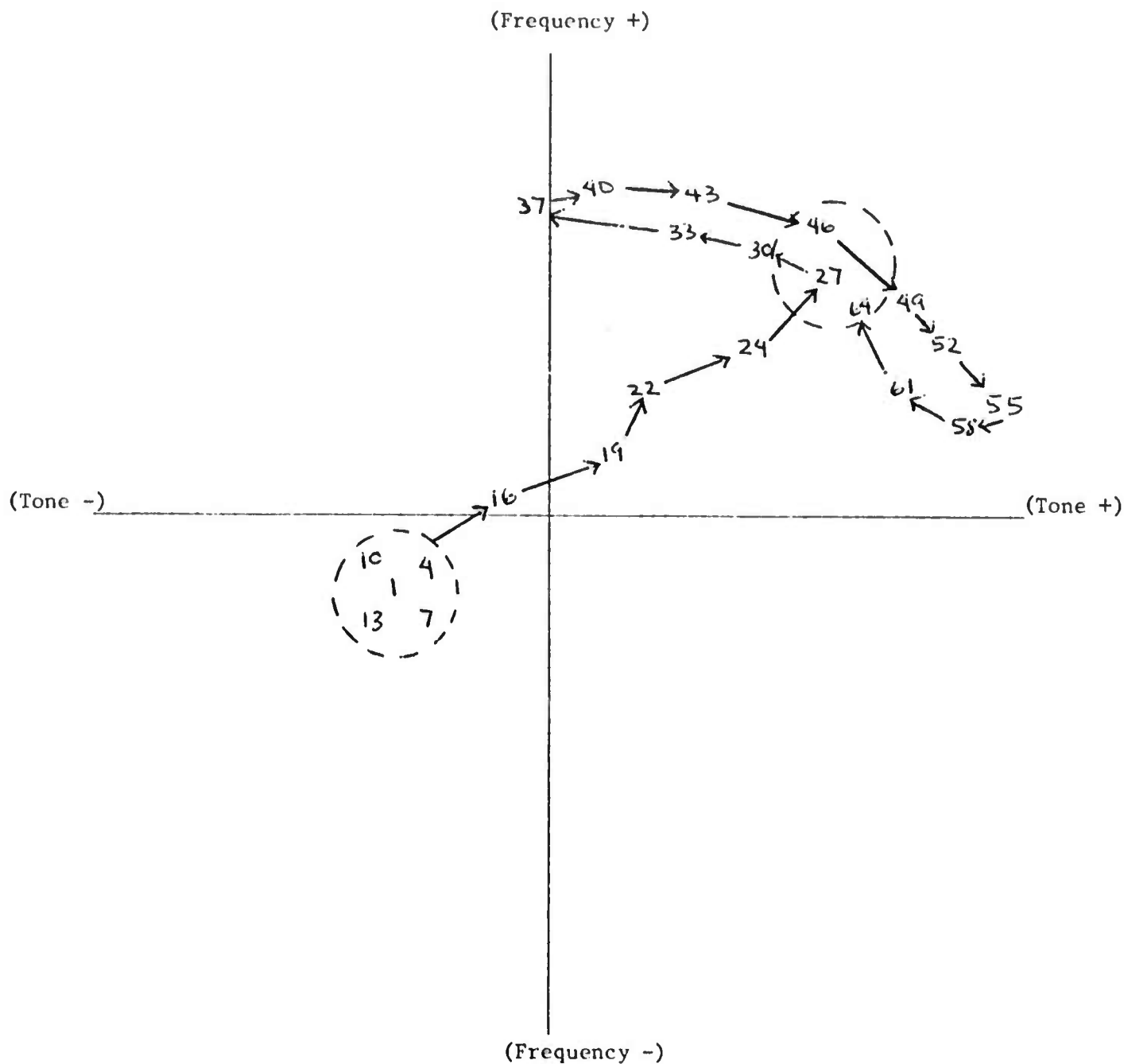
Figure 2d.   Movement from an Area of Stable Relations to a Different Area of Stable Base Posture
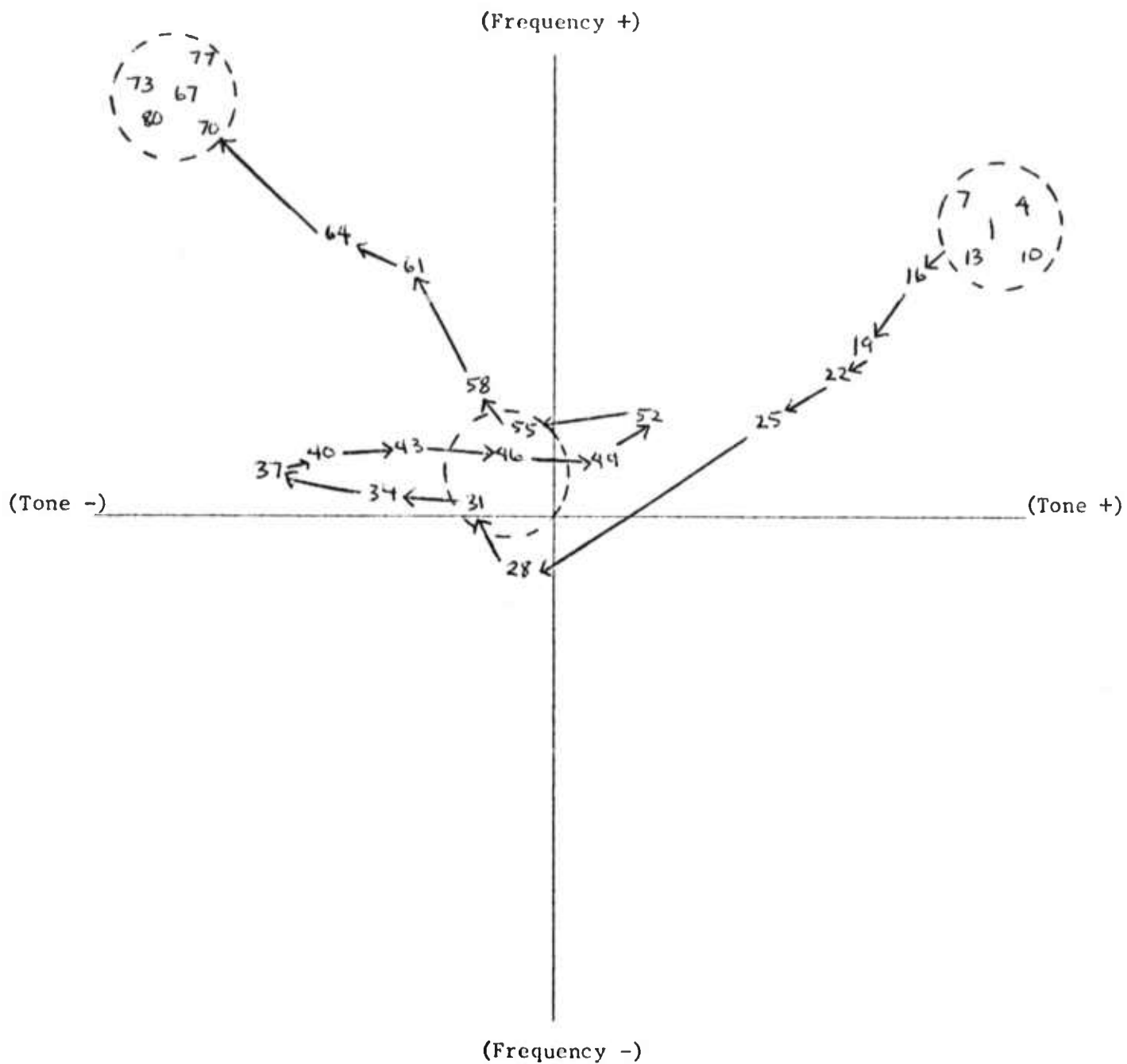
Figure 2c. Movement from Alliance to War

- A perturbation pattern may involve movement from a
  starting point in the normal relations zone to a
  point in the zone of cool unconcern, almost to a point
  of ruptured relations, then return. Empirical (his-
  torical) explanations of such deviations can be used
  to enrich explanatory and predictive capabilities of
  such patterns.

The direction of vector movement forecasts the nature of future relations
unless the movement is altered. The pattern starting with time period 55
in Figure 2e moves from normal relations in the direction of war; the
pattern starting with time point 16 moves from a strong alliance relation-
ship toward normal relations. These two examples involve unidirectional
movement patterns. The perturbation patterns, such as those of Figure 2c,
indicate by their direction the general nature of the perturbation -- a
temporarily warmed, intensified, cooled, or less intense relationship.
Empirical development of perturbation patterns associated with different
types of causative acts would considerably enhance predictive capabili-
ties. Note that, in general, a vector direction associated with an angle
between 0 and 45 degrees, or between 135 degrees and 180 degrees, is pri-
marily associated with a shift of behavioral tone; a vector direction
associated with an angle between 45 degrees and 135 degrees is primarily
associated with a shift in behavioral intensity. With sufficient empiri-
cal exploration, descriptive, explanatory, and possibly predictive char-
acteristics can be associated with various ranges of values for the angles
characterizing movement patterns.

Locations of centroids, outliers, and endpoints, and angle directions of
pattern vectors, of outliers from centroids, of centroids from the inter-
section of the frequency and tone axes, or other designated areas can be
used for comparison of relations over time within dyads, as well as
between dyads, to describe, explain, and possibly predict future trends.

107

Hypothesis Development

The implicit capabilities of this approach to dyadic behavioral pattern analysis open the way to testing a variety of hypotheses. This study is concerned only with Japanese behavior from January 1972 to July 1974, which considerably limits the range of behavior that can be empirically tested. Yet there are a number of hypotheses that appear feasible for examination. These include:

- Perturbation patterns involving movement to and from a normal relations base area and some outlying position generally result from temporarily increased saliency and/or deviance of an individual issue area.

- In many cases, perturbation patterns from reciprocal dyadic partners will correspond significantly in direction, timing, and extent (thus implying interactive effects of reciprocal dyadic behavior).

- Where perturbation patterns for reciprocal dyadic partners correspond significantly, they reflect temporal dominance of the same issue for both dyads.

- Pattern vectors (or outliers) with directional angles rising between 0 and 90 degrees will tend to reflect a conciliatory disposition on the part of the dyadic actor; those vectors falling within this angle range will tend to reflect a diminution of conciliatory policies and a lapse into relative indifference.

- Pattern vectors (or outliers) with directional angles rising between 90 and 180 degrees will tend to reflect a negative or hostile disposition on the part of the dyadic actor; those falling within this angle range will tend to reflect a diminution of active hostility and a lapse into relative indifference.

Prediction Potential

The patterns and pattern attributes identified by the methods described above may be subjected to further analysis for purposes of prediction and forecasting. Each vector pattern represents a potential case for analysis.

108

Within each pattern, critical decision points can be identified by substantive analysis of the pattern data points and related trends in the domestic, economic, and international environments. Experimental design techniques can then be used to predict and evaluate the impact of specific decisions in problem areas of concern to policy analysts. The types of responses evoked by specific decisions can be compared across issues and target countries and the most effective policy strategies for different country targets can be identified. Related pattern sequences of reciprocal dyad members and affected other parties may be subjected to regression analysis to determine the relative impact and predictive power of the actions of the reciprocal dyad partner or a third party on pattern development. Such analysis would suggest to decision analysts the extent to which unilateral policy shifts would be effective in improving relations with the target country.

The measurement and prediction of international dyadic interaction is a developing science. This section is an attempt to operationalize a long-standing theory in international relations that may help the policy analyst forecast the probability of international behavior with increased accuracy. This literature suggests that the structure and process and, most importantly, the outcome of international interactions is a function of the exercise of power strategies by international actors. By observing empirically the effects of these phenomena over time, behavioral patterns are derived that can be translated into probability indicators of future interaction response potentials. A technique is developed to analyze the impact of power strategies targeted by one nation at another, and to measure the probability of response direction, either in compliance or non-compliance with the power intention. The power strategy indicators that were operationalized in Chapter 3 are employed in an empirical test of this method in Chapter 7.

TIME STRUCTURES OF INTERNATIONAL INTERACTION

Substantive concern over the way nations interact with each other has focused on the elements of power, reciprocity, perception, communication, uncertainty, goals, conflict, and decision-making. As international interaction is longitudinal, fluctuation in these elements has had to be analyzed over time to capture change induced by process.

The response structure of this interaction process, however, has not been sufficiently explored. Most analyses to date have arbitrarily employed equal standard time units (a week, month, year) in the study of salient elements in the interaction process. It has been generally assumed that actions occurring in one arbitrarily chosen time unit are responded to in the same time unit or in a subsequent period. However, there is no

110

theoretical or empirical basis for assuming that the structure of all
international interactions operate in weekly units and that all response
structures between different countries operate on the same time unit.
For instance, a researcher may test a set of action-response hypotheses
that contend that a nation's decision-making responses are a function of
internal bureaucratic inertia under conditions of high relative informa-
tion uncertainty, and reciprocity under conditions of low relative uncer-
tainty (Phillips and Crain, 1974). There is no reason to believe that
equal standard time units in the interaction process (say, weeks) provide
the optimal overall time structure to study these propositions. In fact,
intuition would immediately suggest that an equal standard time structure
would probably only confound any serial relationships that do exist
between these variables. One can argue that for different nations
uncertainty must reach different thresholds before summoning a response
characterized by inertia. This response may occur within the same seven-
day period as the attainment of threshold, within eight or nine days, or
longer. In the first case, if actions and responses occur in the same
weekly units over time, then a high correlation is probable. But if
responses consistently occur eight days subsequent to threshold attain-
ment, then no correlation will result.

The structure of international signaling, upon which the concept of rela-
tive uncertainty is based, is not conducive to neat compartmentalization
into equal time units. Aggregating signals emitted during an entire
month, for instance, may obscure the specific intentions of the sender.
While certain issues may achieve and lose their saliency within a matter
of days, the intensity of those signals, although brief, may radically
distort an index of signaling based on monthly aggregations. Likewise,
the intent of the sender may be confused if a coordinated series of sig-
nals is artificially cut off in midstream by the beginning of a new month.

The concept of reciprocity may also be confounded by an equal time struc-
ture. Aggregating the many possible decisions made by a nation during

111

the span of a month will result in a gross average measure that may obscure and obfuscate specific responses that are meaningful individually though not when averaged together.

If the process of international interaction is not reliably reflected by an equal standard time structure, perhaps the structure needed should be concept-specific and thus theoretically meaningful. If reciprocity in international interaction is the focus of study, for instance, then analytic interaction can be structured in a quasi-experimental fashion to allow for the manifestation of reciprocity. This is not to say that the analytical system should be structured to prove one's hypothesis a priori but rather that to study conceptual relationships, those relationships must be subject to empirical observation. Thus, quasi-experimental controls can be instituted to enable the imposition of theoretically meaningful interaction structures to aid in the analysis of specific serial relationships.

A POWER ORIENTATION TO THE STRUCTURE OF INTERNATIONAL INTERACTION

Although the detection of causality may be truly beyond the ken of human understanding, analysts of international politics usually concur that international behavior is generally responsive to the actions of other nations. Actions by one nation usually elicit reactions from the target nation. (See Phillips and Crain, 1974, for a review of this literature.)

But why is this the case? What is it about initiating actions that stimulates responses, in any form? Although a certain amount of compulsion may account for a need to respond, analysts generally attribute the action-reaction sequence in international politics to the use of power by the initiator. Behaviorally defined as the ability to influence the actions of another in an intended direction, power is a causative element that can help explain changes in international goals, positions, and actions (Dahl, 1969; Harsanyi, 1969).

112

Through power interactions with other units in the international system, nations attempt to persuade and, ultimately, modify the attitudes and behavior of friends, enemies, and neutrals to maximize self-interest. Of course, power attempts are not always initiated by one side alone, nor are they always successful. What makes international politics complex is the multitude of power attempts simultaneously initiated by and targeted at all the actors involved in any issue area. What motivates international politics are the resultant effects of these power attempts -- the degree to which influence, credibility, and commitment change the rates of demands and concessions, and the extent to which relevant issue areas are resolved.

How is power influential? There is basic consensus among the analysts of power that its effectiveness is grounded in the ability to alter the values or goals of the targeted party. Power causes a modification of the target nation's valence toward particular goals; the potential or actual positive and negative sanctions introduced by the power initiator affect the target's perceptions of his present and future position and capabilities. If the exercise of power is successful, the target's shifted perceptions will cause a modification in its values and finally compliance with the intent of the power strategy (March, 1969; Zartman, 1974; Ikle and Leites, 1962). The expectation of positive sanctions presents the target nation with actual or promised rewards for compliance, and negative sanctions confront the target with actual or threatened punishments for non-compliance.

Zartman (1974) proposes that the perception of these sanctions "adds value," positive or negative depending on the nature of the power strategy, to one's potential for goal achievement. Threats and warnings are negative values added to the goals of the target nation if it does not heed the demands of the persuader. Promises and predictions are inducements or positive value additions made to a target's goals if it accepts the demands. This perception of "added value" presents the target nation with new considerations with which to proceed or change its goals and

113

behavior patterns. If the added value (costs or benefits) presented by the power strategy is perceived to outweigh the benefits of continuing one's present strategy, then perceptions of one's own behavior and goals and the other side's motives and credibility may change in such a way as to cause a modification in behavioral response.

One conclusion to be drawn from this discussion is that the concept of power can be used to structure action and reaction sequences in international politics. If power is the prime motivation behind responses to international initiatives, then we can say that international interactions are structured in terms of "power-response" transactions. Paul Smoker's (1969) time concepts of "interaction" and "reaction" are similar to our structural components, although he does not cite power as a major influencing factor. Charles McClelland (1963) also addresses the structural sequence of international events by focusing on "transacts" (empirical units consisting of an opening action and the response to it). Elsewhere McClelland (1969) refers to this sequence more in terms of a power conceptualization, that is, in terms of "demands and responses." By charting these sequences during the Quemoy crisis of 1958 and the Berlin crisis of 1948-49 (including only physical acts and excluding diplomatic acts), he notes several phenomena of international interaction. There were three basic types of initiatives -- threatening actions, defensive actions, and yielding actions -- which elicited responses, although some events appeared to have no observable motivating antecedents. Some responses followed closely their initiating actions, while other responses did not correlate with their corresponding initiatives. Finally, : found that during different stages of crises, initiative-response patterns tended to shift.

Using quasi-experimental controls, a structure of international interaction based on power can be identified and observed. The "power-response" sequence suggested here structures empirical units that begin with the exercise of a power strategy by one nation and consist of all the subsequent responses to the target nation. The first power-response sequence ends and the second one begins when the first actor initiates a second

power attempt. Figure 3 visually represents the interaction between actors A and B from a power-response orientation.

In each sequence, the power attempt by actor A elicits one or more responses from actor B. These responses may take the form of direct compliance with or defiance of A's power strategy; B may ignore A's act and proceed as if A did not exercise power; B may respond by not acting at all; or B may attempt to exercise power over A. (The last three options may constitute defiant behavior by B depending on B's motivation.) The next power-response sequence begins when A again attempts to exercise power. However, this time the nature, strength, and direction of A's power attempt are themselves influenced by the actual and perceived alteration in the environment created by the preceding sequence. In other words, the transaction between A and B at time 1 will affect the initiation of power at time 2 (Spector, 1976).[11]

It will be noted that these power-response sequences have been structured to observe the effects of power attempts by one member of a dyad on the other member. However, for any dyad, the roles can be reversed and the two resulting analyses can be compared to study power strategy usage and effectiveness in international transactions. Spector (1976) uses a similar method of analysis to study the effects of U.S. power strategies on Egyptian perceptions and behavior immediately prior to the Suez crisis in 1956. His results indicate that neither U.S. nor Egyptian strategies targeted at the other were effective in modifying perceptions or behavior. Power did not achieve its intended effects because of a lack of credibility, appropriateness, strength, and adequate communication on the part of the strategies exercised.

---

[11] Inference of direct causality between action and reaction is not implied here. All that is suggested is that power strategies that intend to change the target in a certain direction alter the target's environment in such a way that it will be reflected in its immediate responses.
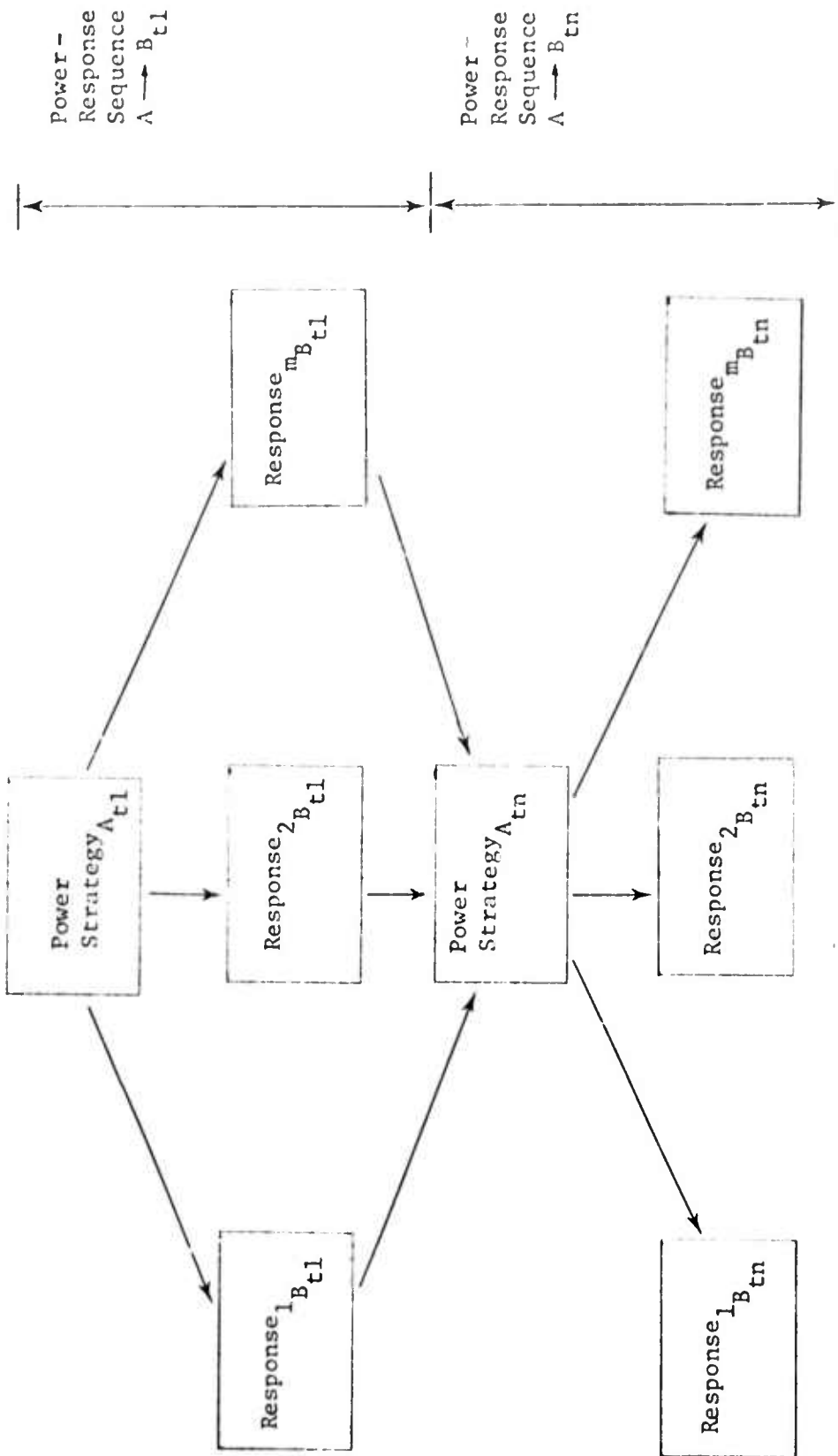
Figure 3. Power-Response Interaction Structure

116

Figure 4 illustrates the interactive nature of power strategy usage and response. The data are hypothetical. The upper portion of the graph indicates the flow of A's cooperative and conflictual responses in reaction to B's power strategies. The lower half charts B's responses to A's exercise of power. At different points in time, A and B will find it advantageous, toward achieving their own individual goals, to attempt to influence the behavior of the other. Their choices of power strategies and when to use them depend on the resources available, the projected risks and benefits, the actors' objectives, and the probability of compliance. The figure vividly indicates the effects of power. Similar power attempts will elicit both similar and different effects as a result of the perceived situation, initiator and target capabilities and goals, the subjective costs of compliance, and the target's perception of initiator credibility. Responses will be of different durations, intensities, and directions.

The quasi-experimental use of power-response structures can yield analyses of different styles of international interaction and how these different styles interrelate. It can provide insight into the responsiveness of international actors: the extent, duration, direction, and reliability of certain strategies in eliciting certain types of responses. In addition, these structures can be used to research how specific conflicts begin and escalate and how they are eventually resolved. By empirical observation of interactive dyads over long periods of time, probability functions of degree, type, and direction of response with respect to different types of power strategies can be calculated. These probabilities can be used to project future interaction and response patterns under particular circumstances.

Several methodological problems with this response structure must still concern us. Power attempts may not occur as discrete, easily identifiable behavioral acts. The exercise of power may become manifest as a policy that evolves as a series of acts over time. Likewise all responses are not neatly placed subsequent to their corresponding power attempts.

117
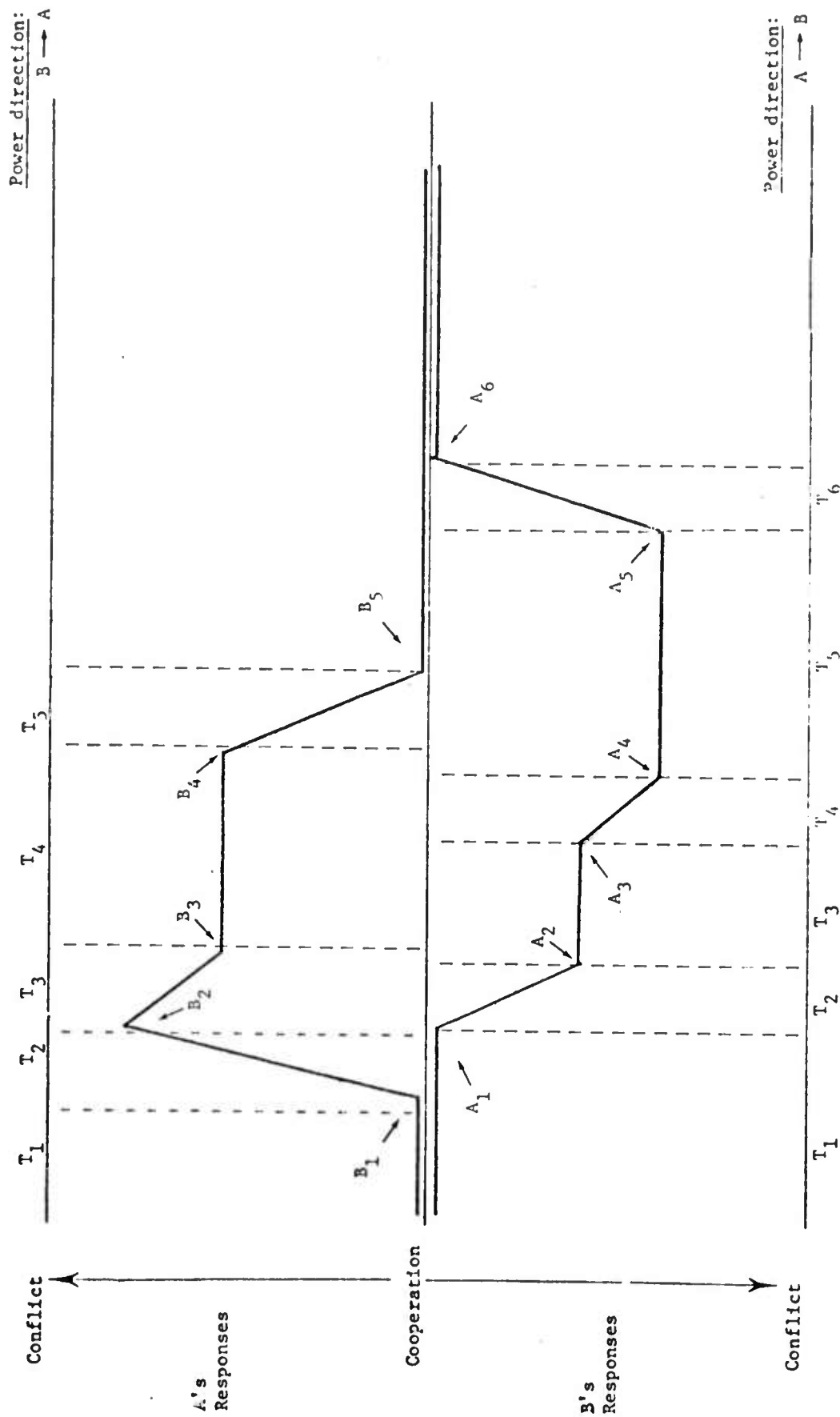
Figure 4. Power-Response Interaction
($A_n^{\rightarrow}$ and $B_n^{\rightarrow}$ represent the initiation of power strategies.)

Responses are interspersed over time and the time span over which they occur will not be constant in different instances. A further complication involves the overlapping of power initiatives by the same actor and other actors. When this occurs the identification of power attempts and corresponding response patterns becomes increasingly complex.

OPERATIONALIZATION OF THE POWER STRATEGY IMPACT ANALYSIS

The operational framework required to incorporate power strategies into the empirical structure of international dyadic interactions is developed in this section. This framework enables identification of the impacts of power strategies on response patterns and the calculation of probabilities to predict future response potentials.

Data Preparation

The methodology relies on the event-based power strategy indicators developed in Chapter 3, and event indicators of response behavior divided simply into cooperative and conflictual actions. For one member of an international dyad, power strategy indicators can be used to record the occurrence of initiated power attempts toward the other dyad member. These indicators can be based on the initiator's overall or issue-specific behaviors. The resultant measures are treated as dummy variables, where the exercise of power is assigned one, and the absence of power, zero. Indices of response behavior can be formed for the target nation by summing the frequency of all positive events and all negative events separately, and then computing a measure of their deviations about their mean frequency. Using cumulative Poisson distributions based on frequency mean as the expected value, deviation indices can be produced that indicate whether, during any given time period, there is a substantial increase, decrease, or no significant change from the mean of positive or negative events. Hayes (1973) assesses the utility of Poisson-based indices as devices for measuring change in event frequencies. By comparing observed frequencies of events to the Poisson distribution (which assumes that the occurrence of events is randomly distributed across time intervals) it is

119

possible to test the null hypothesis that there has been no increase (or decrease) in the frequency of positive or negative events from the mean frequency for each of these categories. If the cumulative Poisson probability is greater than .95, it is assumed that there has been a substantial decrease from the mean; if the probability is less than .05, it is understood that a substantial increase in frequency has occurred. Because of the requirements of the Poisson distribution (Hayes, 1973), response behavior must be measured in aggregates of at least 30 to 50 days.

Comparison of each power strategy indicator with the response deviation indices over all time periods yields results of the impact of power on response behavior.[2] Causality is inferred between power strategy exercise and response patterns. While all other power strategies are assumed to remain constant, each power strategy type is observed individually to determine its effects on response patterns, whether it has resulted in an increase, decrease, or no change. Depending on the power attempt under examination, an increase, decrease, or no change in the response deviation indices implies compliance or non-compliance with the power intention. The output of this analysis is a table of percentages that indicates, for each power strategy type, the percentage of substantial increases, decreases, or no changes (compliance and non-compliance) elicited. If this table covers a significantly long time period, the results of this analysis can be transformed into probabilities that suggest potential shifts in future response interactions given particular power strategy initiatives.

Four types of probability indicators can be derived from this post-hoc analysis of power-response interactions. The Probability of Effectiveness (pEv) index measures the likelihood of power strategy success in effecting change in another nation's behavior. The following formula can be used

_____

[2] For an example of this type of analysis in a different context, see Hayes (1974).

to compute pEv scores:

$$pEv = \frac{\text{Number of power strategy types that co-occur with each type of response condition (that is, increase, decrease, no change)}}{\text{Total number of time periods in each response condition}}$$

It indicates the degree to which certain types of response patterns are elicited by different types of power strategies, that is, the degree to which power strategies are effective in achieving certain impacts. An index value of .50 or greater indicates that a strategy is effective in achieving a particular kind of response with a probability of 50 percent or more.

The second indicator is an Efficiency Probability (pEc) index that measures the extent of overall strategy distribution among the possible categories of response change (that is, increase, decrease, or no change) based on the total number of times each strategy is employed by the initiating nation. pEc is represented by the following formula:

$$pEc = \frac{\text{Number of power strategy types that co-occur with each type of response condition}}{\text{Total usage of power strategy types by initiating nation}}$$

This index reflects the probability that a strategy is uni- or multi-directional in its effects on response behavior, and thus whether it is efficient or inefficient in achieving its intent. A value of .50 or greater indicates that a strategy's impact on response is moderate to high on efficiency. Thus, such a strategy tends to impact fairly highly on a single type of response condition (that is, increase, decrease, or no change).

The ultimate objective of the analysis is to identify those power strategies that have a high probability of impact and can be used efficiently by the initiating nation. Thus, a third summary index is developed, the Power Impact Rating (PIR), which is the product of the

121

effectiveness and efficiency probability indices:

$$PIR = pEv \times pEc$$

It indicates the relative degree of success of each power strategy with respect to effective and efficient impacts on another nation's response patterns. PIR varies from 0.0 to 1.0 depending on the level of strategy effectiveness and efficiency. A strategy that is high on both factors will have a high PIR value. These strategies should be good predictors of probable future power-response interaction patterns. A strategy that is low on both effectiveness and efficiency will yield a low PIR score. Since they do not achieve their desired objectives, it might be well for a nation to eliminate these power strategies from the active repertoire of its interaction techniques. A strategy that is high on effectiveness but low on efficiency will have a moderate PIR score. This condition indicates that while a strategy might be a highly effective international interaction technique of persuading a target nation to change its behavior, its overall usage by the initiating nation is not efficient: it achieves a wide distribution of effects. This may be the case because of inappropriate or excessive use of a strategy.

The analytic results here can be used prescriptively: time periods in the past in which these strategies were effective can be singled out for in-depth study so that more parsimonious and appropriate strategy usage can be planned for the future. A moderate PIR score is also attainable if efficiency is high but effectiveness is low. This result suggests that distribution of power strategy effects approaches unidirectionality but that these strategies account for a low percentage of response changes. One might infer that greater exercise of these strategies could result in greater effectiveness in modifying the target's behavior patterns.

If a strategy has a high PIR, it is important to note whether the impact achieved was in a direction favorable to the initiating country's interests, that is, whether the strategy had its intended effect. To measure

122

this phenomenon, a summary Probability of Strategy Success (pSS) index is calculated. It reflects the overall relative success of significant power impacts (as measured by PIR values) in obtaining favorable response patterns. It can be represented by the following formula:

$$pSS = \frac{\text{Number of significant power impacts with favorable response patterns toward the initiating nation}}{\text{Total number of significant power impacts}}$$

Favorable response patterns can be defined as those that exhibit increased or at least maintained levels of cooperation or decreased levels of conflict. Decreases in cooperative behavior or increases in conflictual behavior are considered to be unfavorable response patterns. Maintenance of mean levels of conflictual behavior is defined as an indifferent response pattern and is arbitrarily assigned a value of one-half of a favorable response. High pSS scores indicate high rates of compliance with the initiator's strategies; low pSS values suggest non-compliance or defiance of the initiator's power attempts.

It is to be expected that these index values may vary when the target nation or issue area focus is changed. Thus the findings of the analysis may indicate that, based on past interaction sequences, the most efficient and successful power strategies may differ depending upon the particular countries or issues involved.

Inferences of Compliance and Non-Compliance

Inferred compliance with a power strategy generally means that the initiating nation was successful in modifying the target's behavior in the intended direction. Inferred non-compliance can be explained by several substantive and methodological reasons. The initiating nation can lack credibility in the eyes of the target to follow through on its predicted sanctions. The sanctions predicted in the power strategies may not be strong enough to induce a modification of the target's behavior. There may have been insufficient communication of a power strategy; perhaps

123

certain strategies must be signalled more often than others (above a threshold level) to be believable to the other side. Methodologically, observed non-compliance may be an artifact of incomplete experimental control. While it is comparatively easy to control for the effects of each power strategy separately, it is difficult to take account of simultaneous exogenous power strategies. The mix of power strategies impacting on a target nation from the other dyad member, as well as from other countries, confounds the analysis of response behavior. If there is a mixture of power occurrences during a given time period, the target nation may have to decide internally which strategies are most crucial to its well-being and respond only to those. Hence, there may be difficulty in empirically isolating the effects of each power strategy, and non-compliance may appear more prominent as a response mode until more sophisticated controlling factors are instituted.

CHAPTER 5

ISSUE PREDICTION MODELS OF JAPANESE INTERNATIONAL BEHAVIOR

Issue Area and Dyadic Dimensions of Japanese International Behavior

The Importance of Issues and Context
in Predicting Japanese International Behavior

ISSUE AREA AND DYADIC DIMENSIONS OF JAPANESE INTERNATIONAL BEHAVIOR

INTRODUCTION

This section explores the question of whether quantitative indicators of issue-specific international behavior are likely to yield more subtle and accurate monitoring of event patterns than indicators of overall international behavior. The consequences of monitoring international behavior that focuses on particular issue area or dyadic interaction are identified through factor analytic techniques. Each dimension derived from the factor analytic solutions represents a behavioral trend that characterizes one aspect of issue or dyadic international interaction. The dimensions of a nation's overall international behavior are compared to the dimensions derived when controlling for issue area and target. When these behavioral dimensions differ, one can observe that the event samples defining behavior along certain issue areas or toward certain international targets are substantially different in frequency and distribution than the population of events from which they were drawn. Identification of dimensional differences suggests that behavioral patterns are a function of issue area or target breakdown and that increased descriptive subtlety, interpretation, and predictive accuracy can be introduced by monitoring these aspects of behavior.

In addition to providing empirical evidence of differences between international behavior trends depending upon issue and dyadic focus, this analysis offers the policy analyst summary descriptions of the modes of behavior in these areas. These descriptions can help the analyst understand previous interaction patterns and place present and future interactions into proper perspective.

The Japanese international data used in this analysis, as described in Chapter 2, are composed of seven behavioral variables, and subsetted

126

into 10 directed dyads (2 of which represent all behavior by and toward Japan), and five issue areas (one category subsumes all behavior regardless of issue area).[1] The seven variables for each dyad-issue set (on 135 weekly observations from 1972 to 1974) were factor analyzed and rotated according to a varimax solution. (Squared multiple correlations were placed in the diagonals.) The rotated factor matrices are displayed in the Appendix ("Factor Matrices of Japanese Issue Area and International Dyadic Interaction"). Table 1 summarizes the results by listing the variables that loaded highly (above .50) on each factor. Each factor represents a different salient style or pattern of interaction that can be interpreted in terms of the behavioral categories that load highly on it.[2] The importance or prominence of each interactive pattern in explaining the totality of behavior is indicated by the percentage of variance explained by each factor (see Appendix). The factors within each cell in Table 1 are listed in order of the percentage of total variance explained.

The factor analytic results are analyzed in order to test the validity of four propositions listed below.

> Proposition I: Japanese international behavior patterns are likely to differ depending upon target focus (holding issue area constant).

> Proposition II: Japanese international behavior patterns are likely to differ depending upon issue area (holding target constant).

---

[1] Behavioral variables: yield, give, support, communicate, protest, threaten, coerce.
Directed dyads: Japan to United States, United States to Japan, Japan to Soviet Union, Soviet Union to Japan, Japan to People's Republic of China, People's Republic of China to Japan, Japan to Asia, Asia to Japan, Japan to World, World to Japan.
Issue Areas: Political/Military Security, Diplomatic Relations, Resource Dependence, International Trade, All.

[2] These factor analyses provide cross-sectional observations of interactive patterns controlling for issue area and dyadic focus. Patterns represented by each factor indicate general behavior configurations over the entire two and one half year period. More time-specific, longitudinal patterns are identified in Chapter 6.

127

TABLE 1

Variables with Factor Loadings ≥ .50
In Factor Analyses of Dyad-Issue Subsets*

ISSUE \ DYAD	A J→W	B W→J	C J→US	D US→J	E J→USR	F USR→J	G J→PRC	H PRC→J	I J→ASIA	J ASIA→J
1 ALL	1 Support, Communicate; 2 ----; 3 (Coerce)	1 (Give), Support, Communicate; 2 Protest	1 (Communicate) Protest; 2 Threat; 3 Coerce	1 Give, Support, Communicate; 2 (Yield)	1 Communicate; 2 Give; 3 (Protest)	1 (Give), (Support), Communicate; 2 Coerce; 3 Yield	1 Support, Communicate	1 (Give), Support, Communicate; 2 Protest	1 Support, Communicate; 2 Threat; 3 Yield	1 Support, Communicate; 2 Yield; 3 Protest, Threat
2 POLITICAL/MILITARY SECURITY	1 Communicate; 2 Threat	1 Support; 2 (Coerce)	1 Support; 2 (Threat)	1 Communicate; 2 Threat	1 Communicate; 2 Protest; 3 Threat	1 (Support); 2 (Give); 3 Threat	(omitted)	(omitted)	(omitted)	(omitted)
3 DIPLOMATIC RELATIONS	1 Support, Communicate; 2 Give; 3 (Coerce)	1 Support, Communicate; 2 (Protest)	1 Support, (Protest)	1 Yield, Communicate; 2 Support	1 Give, (Support), Communicate; 2 (Protest)	1 Give, (Support), Communicate; 2 Communicate; 3 Yield	1 Support, Communicate; 2 (Give)	1 (Give), Support, Communicate; 2 Protest	1 (Support), Communicate; 2 Threat; 3 Yield	1 Support, Communicate
4 RESOURCE DEPENDENCE	1 (Support), Communicate; 2 Give	1 Support; 2 (Threat)	(omitted)	(omitted)	1 Communicate; 2 (Support), Threat	1 Give, Support; 2 (Communicate)	(omitted)	(omitted)	1 (Support), Communicate	1 Support, Communicate
5 INTERNATIONAL TRADE	1 Support, (Communicate); 2 (Communicate) Protest	1 Support; 2 (Yield), Communicate	1 Communicate, Protest; 2 Give	1 Give, (Support), (Protest); 2 Communicate	(omitted)	(omitted)	1 Support, (Communicate)	1 Communicate, Protest; 2 Support	1 Support, (Communicate); 2 (Threat)	1 Support, Communicate

128

* Variable names in parentheses have factor loadings between .50 and .60. Each factor is listed separately within each cell in order of percent of total variance explained. The omitted cells have low frequencies of interactions. The factor matrices are presented in the Appendix.

Key: J→W (Japan to World)   J→US (Japan to United States)   J→USR (Japan to Soviet Union)   J→PRC (Japan to People's Republic of China)
W→J (World to Japan)   US→J (United States to Japan)   USR→J (Soviet Union to Japan)   PRC→J (People's Republic of China to Japan)

J→Asia (Japan to Asia)
Asia→J (Asia to Japan)

Proposition III: Japanese overall behavior patterns toward
specific target nations are likely to differ from behavior
patterns derived when focusing on particular issue areas
toward the same nations.

Proposition IV: Japanese interactive behavior patterns
toward other nations are fairly similar to the interactive
behavior patterns received over all issues.

To aid the reader in the following analysis of Table 1, note that:

Proposition I compares cells 1A, 1C, 1E, 1G, 1I.
Proposition II compares cells 1A, 2A, 3A, 4A, 5A.
Proposition III compares cells in columns A, C, E, G, I.
Proposition IV compares cells in columns A and B; C and
D; E and F; G and H; I and J.

A. Proposition I: Comparing Japan's Behavior Toward Different Targets
on All Issues

Japan's overall behavior toward all targets (cell 1A) can basically be
described as diplomatic in style, characterized by supportive behavior
and communication. This cooperative and diplomatic approach to the
developing multipolar international system enables Japan to maintain a
low military and political profile. Exercising its growing desire for
political autonomy from the United States, Japan is attempting to expand
its range of diplomatic activities to more nations while implementing a
well-balanced policy between East and West (Wakaizumi, 1974). Japan's
behavior as an international economic power continually in need of new
markets and sources of raw materials further justifies Japan's particu-
larly diplomatic international behavior. (The coercive factor turns
out to be extremely trivial; most events classified as coercion refer
to Japanese arrests of publicly disruptive American servicemen in Japan.)

Observation of Japan's overall policy toward the United States (cell 1C),
however, provides the analyst with an essentially different viewpoint.
Strains of conflict underlie the three dimensions of Japan's behavioral

129

patterns. The most salient pattern of Japanese-U.S. relations can be described as a verbal protest and communications dimension. Threats, a more intense form of conflictual interaction, depict Japanese policy to a lesser degree. To an even smaller extent coercion forms a separate policy dimension. Under the tutelage of the United States since World War II, Japan has endeavored in recent years to extricate itself from the role of supplicant, and in doing so, has become the initiator rather than the recipient of an increasingly larger set of political, military, and economic actions. To develop this "autonomous" diplomacy requires a political separation from the lead of American foreign policy, a separation that implies increased risk but potentially increased goal satisfaction for Japan (Scalapino, 1972). By claiming this independence, Japan does not totally reject American support and friendship but expresses its growing discontent with its dependent status by resorting to hostile reactions. Furthermore, economic competition is another source of friction between the two countries. The search for world markets and raw materials places the goals of both states in conflict, which becomes apparent in their international behaviors (Overholt, 1974).

Practically on the other extreme, Japan's overall policy toward the Soviet Union (cell 1E) is generally characterized by friendly relations. Although historically wary of Russian intentions, Japan's interaction with the Soviets since 1972 has primarily focused on diplomatic communication. Normalization of relations with Russia, part of Japan's independent policy, has involved talks over the peace treaty, the return of four northern islands, economic investment, and resource development (Pond, 1973). A secondary dimension of Japan's Soviet policy can be interpreted as the actualization of negotiation objectives. Japanese interest in increased trade, investment, and the development of and access to Soviet energy resources has resulted in several concrete agreements that will benefit both sides economically and improve relations. To a lesser degree, a third pattern, verbal protest and accusation, indicates an underlying Japanese fear and suspicion of the Soviets.

130

Japanese overall behavior toward China (cell 1G) has a much simpler struc-
ture, which is extremely close to Japan's overall policy toward all
nations. A single factor describes Japan's move to normalize relations
through friendly diplomatic support and communication. Since 1972,
both sides have cautiously explored the attitudes and positions of the
other in a generally cooperative atmosphere. Although normalization
diplomacy describes Japan's explicit behavior pattern toward China, it
overshadows implicit, underlying tensions between these nations concerning
their ideological differences, influence over Asia, Chinese fears of
renewed Japanese militarism, and Japanese complaints over Chinese inter-
ference in its domestic politics (Scalapino, 1972). The policy of
rapprochement serves Japanese objectives of achieving an independent
stance while seeking a potential alternative to the Mutual Security
Treaty with the United States. By establishing normal and friendly rela-
tions with China and displaying its independence from American policy,
Japan is developing a framework for direct negotiations with the Chinese
to discuss security problems (Johnson, 1972).

As Japan occupies a subordinate position in relationship to the United
States, Asia's status vis-a-vis Japan can also be viewed as subordi-
nate (Singer, 1972). The multidimensional space derived from the factor
analysis (cell 1I) suggests that Japan employs a diverse set of behavior
patterns toward the countries of this region. The major dimension of
Japanese behavior toward the nations of Asia is characterized by Japan's
friendly and supportive diplomatic style. Japan is the economic leader
in Asia; aid and technology received by these nations are repaid to Japan
by the influx of raw materials, energy resources, and new markets. Under-
lying promotion of regional cooperation in the Asian context are Japanese
desires for economic dominance. Especially as the United States reduces
its commitments in the region, Japan has the very real option of competing
with the Chinese and Soviets for economic and diplomatic leadership and
dominance in Asia (Overholt, 1974). Secondary trends of threat and yield
behaviors, in combination with this friendly dimension, suggest a mixed
diplomacy toward Asia. Japan uses both the carrot and the stick in
dealing with its Asian neighbors.

131

Comparison of the factor analytic solutions tends to bear out the contention of Proposition I, that Japanese behavior differs depending upon the target focus.

B. Proposition II: Comparing Japan's Behavior to All Targets on Different Issue Areas

1. All Issue Areas

As described earlier, Japan's behavior to all nations regardless of issue area (cell 1A) forms one basic pattern that is interpreted as a friendly diplomatic pattern. If Japanese behavior toward all nations forms different patterns when focusing on particular issue areas, the contention that the issue area aspect is crucial in monitoring and predicting subtle changes in international behavior will be supported.

2. Political-Military Security Issue Area

Japan's behavior on political and military security issues (cell 2A) can be interpreted as verbal diplomacy (communication) and verbal conflict (threats). Actions taken on this issue concern the defense and security of Japan. Since Japan has assumed a basically non-militaristic and non-nuclear position in the international system, its security depends on maintaining the good favor of its friends, especially the United States, as well as its adversaries. Communications behavior, an essentially neutral and diplomatic category of participation and collaboration in international affairs, can help to stabilize and maintain friendly relations. But it appears that Japan is concerned that its diplomatic outreach on security matters not be mistaken for softness or lack of will to protect itself. While attempting to establish friendly and normal relations with even antagonistic nations, it seems that Japan feels the necessity to emphasize its ability and willingness to preserve its identity as a nation. It does so by using threat strategies, verbally committing itself to unfriendly actions if necessary.

3. Diplomatic Relations Issue Area

The diplomatic issue area includes interactions that depict "normal" relations between states (cell 3A). Considering the prominence among Japanese objectives of implementing an independent and multilateral diplomatic posture, the behavioral dimensions derived from data on this issue area are important in understanding the thrust of Japanese policy in general. Japanese behavior on this issue toward all nations forms three distinct patterns. The first pattern is similar to the policy dimension identified as friendly diplomatic relations (including support and communications). It describes Japan's overall behavior in keeping with its goal of autonomous diplomacy. The second pattern is an even more cooperative mode of international behavior, and is characterized by the formalization of agreements and the extension of aid and assistance. This pattern incorporates the signing of agreements and the granting of aid and material support. The final pattern of behavior is characterized as coercive. It is minimally used and fairly trivial in content.

4. Resource Dependence Issue Area

Japan's policy output on resource issues (cell 4A) comprises two patterns, both predictably cooperative in nature. About 40 percent of all Japanese actions on this issue are directed at Asian nations or the Soviet Union toward whom Japan looks for much of its resource and energy needs. To obtain these raw materials, friendly diplomatic relations must be developed and maintained, and technological and financial assistance must be rendered to physically extract the resources. The two policy dimensions derived from the factor analysis reflect these political needs; the first factor includes verbal support and communication behaviors and the second is composed of give behaviors.

5. Trade Issue Area

Considering Japan's high-level economic objectives, behavior on this issue area is of extreme salience (cell 5A). The need for external

133

outlets for Japanese manufactured goods as well as external sources of raw materials has required a supportive foreign policy; to maintain economic leadership, political relations with buyers and suppliers must remain friendly. The first policy dimension on this issue represents this cooperative mode. In the economic marketplace, however, Japan is often placed in direct competition with other economic powers, especially the United States (Haitani, 1973). Friction over needed markets has led to a second policy dimension characterized by verbal protest behavior.

The assumption of Proposition II is affirmed by the factor analytic results; issue area focus suggests different behavioral interactions and trends.

C. Proposition III: Comparing Issue Area Dimensions Within Dyads

Do policy patterns of specific dyads vary substantially when the issue area element is introduced? When comparing Japan's policy to all nations over all issues with Japan's behavior on specific issues (column A), the former yielded a diplomatic behavior pattern while the latter always formed several patterns and included cooperative as well as conflictual factors (except the resource dependence issue area which formed two cooperative policy dimensions).

Japan's behavior toward the United States over all issues forms three fairly conflictual patterns. Issue area breakdowns (column C) reduce the number of behavioral patterns and accentuate the mix of cooperative and conflictual relations. On political/military security and diplomatic issues, Japan has been closely aligned with the United States. However, recent Japanese concerns over the strength of the American defense commitment and Japanese initiatives to develop an autonomous diplomacy are responsible for its present approach-avoid behavioral patterns toward the United States (Scalapino, 1972). Patterns concerning trade are slightly more friendly considering that the United States is still the largest single market for Japanese exports.

134

Japanese overall behavior toward the Soviet Union is multidimensional but
basically cooperative in tone. When broken down into issue areas (column
E), political/military security concerns exhibit a complex and generally
conflictual set of patterns. The proximity of Soviet military power
to Japanese borders evokes fearful Japanese behaviors in the form of
verbal protest and threats (Pond, 1973). On diplomatic and resource
issues, however, Japan's interactions with the Soviets tend to form two
basic patterns: one cooperative and one conflictual. These two fac-
tors exhibit Japan's desire to normalize relations with Russia while
expressing wariness over Soviet intentions and continuing diplomatic
problems.

Japanese relations toward China exhibit only minimal variation with the
introduction of issue area breakdowns (column G). Sino-Japanese relations
are still in their formative stages and Japan's policy toward China has
been especially cautious and diplomatic in tone. On diplomatic and trade
issues, Japanese policy still remains unidimensional and supportive.

Japanese behavior toward Asia is multidimensional and similar in com-
position over all issues and on diplomatic and trade issues in particular
(column I). Japan has attempted to establish economic predominance over
the region by exercising a cooperative and supportive style in some
instances and a threatening style in others. Japan's interactions with
Asian nations over resource problems, however, are dealt with solely
through friendly diplomatic means.

In general it has been demonstrated that controlling for both issue
area and dyadic focus results in more parsimonious and interpretable
interaction dimensions. Proposition III is generally supported.

D. Proposition IV: Comparing Behavioral Dimensions Received and Sent

Over all issues and on issue breakdowns, the major policy dimensions both
received and sent between Japan and all nations are generally supportive

135

and diplomatic in tone (columns A and B). In two cases, however, the secondary policy dimensions received by Japan tend to be more intensely negative than Japanese behavior sent. On political/military issues, the world is more coercive to Japan, and on resource issues, the world is more threatening.

On most issues American policy toward Japan exhibits less hostility and greater cooperation than Japanese policy to America (columns C and D). The United States, in its general behavior patterns, appears not to provide cause for Japanese hostility. Rather it can be inferred that the nature of Japan's policy output is a function of its own objectives for diplomatic and economic independence from the United States.

The Soviet Union is also more beneficent toward Japan than Japan is in return (columns E and F). On all issues, Japanese policy includes conflict dimensions while Soviet policy on two of three issues is totally cooperative. Although manifest Russian behavior cannot explain the tone of Japanese actions, it can be hypothesized that Japan's policy is a function of its past experiences with the Soviets. Japanese suspicion of the Soviets stems from the Russian refusal to sign a peace treaty, the treatment of World War II prisoners, and the protraction of the northern islands dispute (Scalapino, 1972). Japan's policy dimensions toward the Soviet Union appear to indicate a defensive formation against the expectation of future hostile relations.

While Japan targets only friendly diplomacy at China, Chinese policy toward Japan always includes an element of verbal protest (columns G and H). In their policies of rapprochement, China emphasizes the differences between Japan and itself, while Japan proceeds cautiously but always cooperatively. Although opening up to Japan both economically and diplomatically, China has continued to demand a one-China policy and to accuse Japan of militarism and neo-imperialism.

Japan's economic power over Asia is maintained basically through diplomatic as well as threatening policy dimensions. However, Asia's behavior toward Japan is generally characterized by friendly diplomatic factors (columns I and J). Thus the relationship is not reciprocal. Considering Asia's dependence on Japanese aid and investment, it has little bargaining leverage with which to challenge Japan's dominance.

Proposition IV is only partially supported by the comparison of policy factors. The behavioral trends received by Japan are not always apparent predictors of Japanese behavior sent.

E. Conclusions

The factor analytic solutions have been useful in identifying prominent behavioral patterns in the dyadic and issue area subsets. Comparisons of the derived behavioral patterns suggest the following methodological conclusions concerning the four initial propositions about Japan, and the utility of issue area and dyadic elements in monitoring international behavior.

1. Japan's behavioral output over all issues varies substantially depending upon the national or regional target. While Japanese behavior to all nations describes the general thrust of its policy, the data subsets that focus on specifically targeted policy provide more accurate indication of Japanese relations. Moreover, interpretation of the factors for each dyad compares satisfactorily with qualitative literature on Japanese behavior. Thus, data that focus on dyadic interaction appear to provide quantitative monitors of behavioral patterns that are more subtle than indicators of overall behavior.

2. Japan's behavioral output to all nations varies substantially depending upon issue area focus. Behavior over all issues basically forms one behavioral pattern, but behavior on specific issues forms more complex, multidimensional spaces. On some issues policy tends to be friendly in

tone, while on other issues policy is a combination of conflictual and cooperative styles. Thus, the issue area samples are not homogeneous with respect to the behavioral population from which they were drawn. Increased pattern subtlety can be achieved, it appears, by monitoring the issue area focus of international behavior rather than ignoring the content of interaction.

3. Japan's behavior toward specific targets and on specific issue areas yields even more refined indicators of behavior. Whereas Japanese behavior toward specific targets (except China) on all issues formed three dimensions, generally fewer factors were needed to explain behavioral patterns when taking both specific issue areas and targets into account simultaneously. Without controls for issue area and target, policy patterns can become analytically confused and distinctions can become muddied. More parsimonious and less complex factor solutions that are more interpretable in terms of the literature can be obtained by employing data samples that control for issue area and target of interaction.

4. Attempts to interpret and relate policy dimensions received and sent by Japan were only moderately successful. In some cases, the relationship between explicit policy dimensions received by Japan from a certain actor and explicit dimensions sent by Japan was not clear or apparent. The addition of time lags and leads might aid in strengthening the hypothesized linkage. Certainly other causative elements such as economic trends and domestic behavior influence external behavior and can be taken into account. Finally, the relationship was analyzed here on a rather crude level and deserves the attention of more rigorous means of analysis. In the following section, quantitative monitors of international behavior are employed to analyze and predict dyadic behavioral trends on issues.

The factor analyses have also yielded substantive findings concerning Japanese international interaction patterns that are valid for the period under examination, 1972-74.

138

5.   Japanese behavior trends toward the Soviet Union and the People's Republic of China tend to be friendlier than Japanese relations with the United States. To a large extent this phenomenon is a result of a concerted Japanese policy of rapprochement and normalization of relations with its two closest major power neighbors. It is also a function of Japanese desires for an autonomous international role and increasing economic competition with the United States over export markets and sources of raw materials.

6.   Japanese behavior toward the developing nations of Asia appears to follow a dominant-submissive pattern. Long the major economic force in that region of the world, Japan tends to dominate Asia while remaining dependent on its neighbors for essential resources and markets for its manufactured products. As in most dominance relationships, Japan exercises both friendly and threatening strategies -- both the carrot and the stick -- in its policy toward Asia.

7.   Japanese interaction patterns with the United States on particular issue areas offer a more precise indication of Japanese behavior. For instance, interaction on political-military security issues with the United States reflects a dual-headed policy. While Japanese actions are basically supportive -- Japan's security being largely dependent on the American military commitment -- there also exists an underlying dimension of threat concerning the presence of U.S. military and nuclear capability on Japanese soil and the questionable firmness of the U.S. commitment. Similarly, Japan's behavior patterns on international trade are a mixture of cooperative and conflictual actions. While Japan is tied to the United States as a market for its manufactured goods, it is also in competition with the United States for raw materials and world markets. These seemingly ambivalent modes of behavior toward the United States as derived from the factor analyses of issue areas can be interpreted as indicating Japan's growing desire to develop an autonomous, though friendly, diplomatic stance toward America.

139

8. Japan's international behavior toward the Soviet Union on particular issue areas also reveals an approach-avoid syndrome. While desirous of forming more friendly relations with the Soviets to ensure a flow of needed energy and food resources and to decrease the fear of Soviet military might, Japan still maintains a suspicion of Soviet motives and good will. Japanese behavior on political-military security, diplomatic, and trade issues all reflect these two distinct trends.

9. Not surprisingly, Japan's behavior toward China on diplomatic and trade issues is entirely cooperative in nature. The policy of rapprochement is still in its formative stages, so initiatives tend to be supportive but cautious.

10. Japanese behavior toward Asia on particular issue areas is indicative of the interdependent nature of their relationship. On diplomatic and trade issues, Japan uses both friendly and conflictual behavior patterns to establish diplomatic and economic leadership over Asia. On resource issues, however, Japan is entirely cooperative, denoting its high dependency on its developing neighbors for raw materials.

OBJECTIVES

A major goal of the current project on Japan's international behavior
is to design and test means of improving the prediction of that behav-
ior. The objectives of the research reported in this section are to
examine whether predictions can be improved by (1) analyzing behavior
on the issue area level rather than on an aggregate level that encom-
passes all issue areas, and (2) taking into account the effects--if
any--of contextual factors surrounding Japan's behavior in specific
issue areas. These two objectives represent departures from the bulk
of prior systematic event-based research. Much prior research has
dealt with the effects of "received" behavior on "sent" behavior accord-
ing to the simple stimulus-response paradigm, where received behavior
consists of the actions directed toward a given nation, and sent behav-
ior consists of actions initiated by the nation (Hoggard, 1970; Azar,
1972; Smoker, 1969; Phillips and Crain, 1974; Tanter, 1974; several
studies by Stanford University researchers summarized in Zinnes, 1972).
With few exceptions (see, for example, Brewer, 1973; Ward, et al., 1975),
indicators of received and sent actions have measured the overall behav-
ior of the nations studied, and in predicting $A \rightarrow B$ behavior, only
the effects of $B \rightarrow A$ actions have been considered, to the exclusion
of the activity of third countries (that is, $C \rightarrow A$, $D \rightarrow A$). Further-
more, the utilization of aggregate measures of all behavior has pre-
cluded an examination of how received behavior in one issue area affects
sent behavior in other issue areas.

This prior research has failed to exploit several opportunities for
potentially enhancing the predictability of a nation's international
behavior. One opportunity exists in the possibility that in different

141

issue areas, sent behavior has a different relationship to received
behavior. If these relationships differ across issue areas, then the
attempt to fit a single general relationship results in a loss of infor-
mation that could be used to enhance predictive capabilities. Another
opportunity exists in the possibility that sent behavior toward a nation
in one issue area is affected by two types of contextual factors:
received behavior from the nation in other issue areas, and received
behavior from third countries. In other words, part of the context of
Japan's interaction with one nation on a given issue is its interaction
with the same nation on other issues and its interaction with other
nations. The objectives of the research reported in this section are
to examine whether in fact different relationships exist between Japan's
received and sent behavior in different issue areas, and whether the
contextual factors have an effect on Japan's behavior. To the extent
that the results are positive (that is, different relationships and
contextual effects are found), it can be concluded that the predictabil-
ity of Japan's behavior can be enhanced by utilizing an issue area level
of analysis and contextual predictors.

THE IMPORTANCE OF THE ISSUE AREA LEVEL: THEORY AND SUBSTANTIVE BACK-GROUND

There are good reasons to suspect some differences across issue areas
in the relationship between Japan's received and sent international
behavior. Rosenau presents a general theoretical argument that results
in the proposition that the "functioning of any type of political sys-
tem can vary significantly from one type of issue-area to another"
(1960). His argument is that issue areas involve different goals and
means, and that these differences give rise to different patterns of
behavior. Coplin (1971) argues from an organizational perspective that
different issues activate different organizational components and interest
groups whose styles and motivations culminate in strategies that vary
from issue to issue.

142

The substantive background of Japan's international behavior seems to support the applicability of the general issue area proposition to the Japanese case. In this regard, Fukui (1974) finds that different ad hoc decision-making groups tend to be involved in different issues, and he notes the implication of this for variation in Japan's policies across issues. Hellmann (1972) suggests that Japan's tendency to deal separately with different types of issues has roots in the country's extreme dependence on foreign sources for raw materials. Japan's need to pursue economic and resource needs has inclined the country toward a policy of "being friendly with everybody, or at least not making serious enemies anywhere" (Okita, 1974:723), and toward dealing with various issue areas "in a discrete fashion" (Hellmann, 1972: 8).

Historical analyses of Japan's approach toward other nations suggest, then, that Japan's behavior patterns may vary across issue areas. The country's particular sensitivity to economic (trade and resource) issues suggests that its pattern of responding to external inputs in economic areas should be more intense than in other areas.

HYPOTHESES AND DESIGN FOR ISSUE AREA DIFFERENCES

Two hypotheses are suggested by the theoretical and substantive considerations relating to the issue area level in Japan's international behavior:

> H1: Differences across issue areas exist in Japan's pattern of responding to behavioral inputs from other countries.

> H2: In particular, Japan's response patterns in economic issue areas are more intense than in other issue areas.

Response patterns are measured in the analyses by regression slopes in regressions of Japan's behavior toward another country on the country's

behavior toward Japan. Adequate data exist for eight tests of these hypotheses. In each case "behavior" is measured by the previously described behavioral tone index across 135 weekly units (January 1972-July 1974). In each case Japan's behavior toward a given country in a given issue area is the dependent variable, and the behavior of the country acting toward Japan in the same issue area is the independent variable. The eight regressions and the results of the analysis are shown in the following section.

RESULTS OF ANALYSIS OF ISSUE AREA DIFFERENCE

Table 2 presents the results of regressions performed to test hypotheses 1 and 2.

TABLE 2

Japan's Behavior Toward Three Countries
Regressed on the Countries' Behavior
Toward Japan in the Same Issue Areas

	Correlation	r^2	Slope
JAP → USA/USA → JAP			
Political-Military	+.14	.02	+.09
Diplomatic	+.48	.23	+.47
Trade	+.50	.25	+.42
JAP → USR/USR → JAP			
Political-Military	+.18	.03	+.06
Diplomatic	+.29	.08	+.20
Resource Dependence	+.67	.45	+.64
JAP → PRC/PRC → JAP			
Diplomatic	+.64	.41	+.68
Trade	+.87	.76	+.91

The first three regressions reported in Table 2 involve Japan's (JAP) behavior toward the United States (USA) as the dependent variable and U.S. behavior toward Japan as the independent variable. Three regressions

were performed for this dyad. The first regression involves the countries' behavior in the Political-Military issue area; the second is for their behavior in the Diplomatic issue area; the third is for their behavior in the Trade area. The next three regressions have Japan's behavior toward the Soviet Union (USR) as the dependent variable and Soviet behavior toward Japan as the independent variable in the identified issue areas. The last two regressions involve Japan's behavior toward the People's Republic of China (PRC) as the dependent variable and the behavior of the PRC toward Japan as the independent variable in the identified issue areas.

The substantive interpretation of the slopes is very straightforward since the independent and dependent variables are measured on the same tone scale. A slope of 1.0 would indicate that on the average Japan responds with the same tone as is received.[3] In other words, a slope of 1.0 reflects a "tit-for-tat" response pattern. A slope of less than 1.0 reflects a pattern of "under-response," where on the average Japan responds with a tone that is less intense than received tone. The greater the slope, the more intense is Japan's response pattern. The slope is comparable across all the dyads.

The results shown in Table 2 provide support for hypotheses 1 and 2. There is considerable variation in the slopes of the regressions as well as in the correlations between received and sent behavior.[4] Thus,

---

[3] This description of substantive meaning assumes that the regression intercept--Japan's tone when a neutral tone is received--is zero or near zero. In fact, all regression intercepts were near zero.

[4] Correlations also were computed between the total behavior (tone) received and sent by Japan to the three countries in Table 1. The correlations are as follows: For Japan's interaction with the United States, +.35; for its interaction with the Soviet Union, +.37; for its interaction with the PRC, +.70. Note that issue area-specific correlations are less or greater than the correlation for overall behavior in a dyad. The low overall correlations in the Japan-US and Japan-USSR dyads obscure stronger relationships in specific issue areas.

Japan has a tendency to respond more intensely to inputs in some issue areas and less intensely in others. Japan's behavior is more predict-able from inputs in some issue areas than in others. For example, in the Japan-USSR dyad Japan's behavior in the Political-Military issue area is less predictable from Soviet inputs ($r^2=.03$) than is its behavior in the Resource Dependence issue area ($r^2=.45$). Slopes sometimes differ across issue areas where Japan's behavior is at least moderately predictable from received behavior. In particular, note the slope differences in the two issue areas for the Japan-PRC dyads.[5]

Variation across issue areas in response patterns thus is found, provid-ing support for hypothesis 1. Hypothesis 2 also is supported in general. Table 3 shows the average slope found in the four issue areas included in the analysis. Table 3 reveals that, on the average, slopes are greater

TABLE 3

Average Slope in Four Issue Areas

Issue Area	Political-Military	Diplomatic	Trade	Resource Dependence
Average Slope	.075	.45	.665	.64

in the two economic issue areas—Trade and Resource Dependence. Thus it appears that Japan's response patterns are in general more intense in economic issue areas as envisioned by hypothesis 2. In other words, for a given received tone, Japan responds with a more intense tone in economic issue areas than in other issue areas. On a dyad-specific

---

[5] These judgments as to the predictability of Japan's behavior in differ-ent dyad issue areas are of course technique-dependent and measure dependent. Linear regression across all cases using the tone measure is but one of several possible technique-measure combinations that could be used to examine the predictability of Japan's behavior from external inputs. Findings subsequently reported in this section are likewise dependent on the technique and measure used.

basis hypothesis 2 clearly is supported in the Japan-PRC and Japan-Soviet cases, but not in the Japan-U.S. case. Japan's response pattern to the United States in the Trade issue area is the least intense pattern of the three dyads in the Trade area. Perhaps this is a reflection of the fact that Japan's economic dependency relationship with the United States is stronger than with either the Soviet Union or China. According to Pond (1973: 152) the Japanese "do not hope or expect that economic ties with either (China or Russia) will assume large proportions relative to Japan's steadily expanding links to the United States." Japan's "'low posture' diplomacy (is) designed to avert major offense to anyone with whom Japan has commercial relations" (Nickel, 1974: 161). One may then expect to find Japan's tendency toward even lower postures with the United States, since commercial relations are stronger with the United States and the Japanese expect they will remain so. One aspect of "low posture" is a muted response pattern. Thus, Japan's relatively non-intense reaction pattern vis-a-vis the United States in the Trade issue area may reflect an especially low posture in its interaction with the United States, especially because of the relatively extensive economic links between the two countries. It is also interesting to note that while all of the slopes in Table 2 are positive, none is 1.0 or greater. This means that Japan does not follow a "tit-for-tat" response pattern in any of the identified issue areas and is inclined toward "under-response" in each issue area. Japan appears, then, to be a cautious international actor: Japan generally responds to a friendly tone with a friendly tone--but sends a response more muted than that received; and Japan generally responds to a hostile tone with a hostile tone--but sends a response less hostile than that received.

Summarizing the results above, Japan responds in different ways to inputs in different issue areas. In some issue areas, the country's behavior does not appear to be even moderately predictable from inputs from the target of its behavior, while in other issue areas Japan is fairly predictable from a simple reciprocal response model. Thus, Japan's behavior patterns are quite different across issue areas.

147

These results support the idea that the prediction of Japan's behavior can be enhanced by focusing analysis on the issue area level. Different mathematical relationships specific to issue areas can be identified and utilized for predictive purposes. There is, in summary, a loss of useful information when aggregate measures of behavior encompassing all issue areas are employed for predictive purposes.

THE IMPORTANCE OF CONTEXT: THEORY AND SUBSTANTIVE BACKGROUND

Brewer (1973) cites the failure of much research to consider the effects of context on national security behavior. He alleges that the tendency to "isolate particular events or cases in the policy process and treat them as more or less discrete phenomena without reference to other occurrences" ignores the fact that "there are a multitude of problems being dealt with at any time" and that "the response to any particular problem often depends on concurrent problems" (1973: 96).

In the present context, Brewer's ideas can be taken to mean that Japan's behavior toward a given country in a given issue area may be affected by "contextual" variables in addition to being affected by the country's behavior toward Japan in the same issue area. In this regard, the substantive literature on Japan suggests two potentially important types of contextual factors that are international in character.[6]

---

[6] The importance of domestic contextual factors is considered in another section of this report. The two selected factors are behavioral, involving the behavior of third countries toward Japan and the behavior of countries toward Japan in issue areas other than those on which Japan is acting. A very large number of other contextual factors, ranging from systemic to perceptual levels (e.g., system polarity, perception of threat) are potentially relevant, but their treatment is beyond the scope of the present work.

148

A contextual factor ("other issue area" effects) suggested by the litera-
ture is the effect of a country's behavior toward Japan in one issue
area on Japan's behavior toward that country in a different issue area.
In this regard, Tsurutani notes that Japan's recognition of its need for
a continuous flow of raw materials affects every other aspect of its
international policy (1974: 140). Thus, it is quite possible that a
country's behavior toward Japan in the Resource and Trade areas affects
Japan's behavior toward the country in all other areas. Other such con-
textual effects suggested in the literature are that China's behavior
toward Japan on Trade issues affects Japan's behavior toward China on
Diplomatic issues (Scalapino, 1972), and that Soviet behavior toward
Japan on Political issues affects Japan's behavior toward the Soviets
on Resource Dependence issues (Pond, 1973). Scalapino (1972) notes
that China demands certain diplomatic concessions from Japan in return
for better trade relations (in particular, recognition that there is only
"one China"), while Pond (1973) contends that Japan has linked its actions
regarding joint Japan-Soviet resource development to Soviet policy on
the political status of contested territory.

The second type of contextual effect ("third country effects") sugges-
ted in the substantive literature is the effect of a third country's
behavior on Japan's actions toward a given partner. In this regard,
Johnson contends that "China is not likely to accept a 'normalization'
of relations with Japan until Japan has met China's political require-
ments" (1972: 718). One of those requirements is that Japan "end her
alliance with the United States" (Johnson, 1972: 719). Thus, relations
between China and Japan are likely to be affected by Japanese-U.S. relations
in the Political-Military issue area. This effect would be evidenced
in a relationship between U.S behavior toward Japan on Political-Military
issues and Japan's behavior toward China in all issue areas. Another
such contextual relationship is suggested by both Scalapino (1972) and
Pond (1973). Both authors suggest that Japan is concerned not to go
too far in its economic activity with China lest it elicit hostile

149

political-military responses from the Soviet Union. Thus, Japan's behavior toward China in the Trade issue area may be affected by the level of friendliness or hostility in Soviet Political-Military actions toward Japan.

HYPOTHESES AND DESIGN FOR CONTEXTUAL ANALYSIS

The literature surveyed above suggests several hypotheses regarding the effects of contextual factors on Japan's behavior. These are listed below.

Other Issue Area Hypotheses

H3: The behavior of any country toward Japan in Trade and Resource Dependence issue areas affects Japan's behavior toward the country in every other issue area.

H4: PRC behavior toward Japan in the Trade issue area affects Japan's behavior toward the PRC in the Diplomatic issue area.

H5: Soviet behavior toward Japan in the Political-Military issue area affects Japan's behavior toward the Soviet Union in the Resource Dependence issue area.

Third Country Hypotheses

H6: U.S. behavior toward Japan in the Political-Military issue area affects Japan's behavior toward China in each other area.

H7: Soviet behavior toward Japan in the Political-Military issue area affects Japan's behavior toward China in the Trade issue area.

The design for testing these hypotheses is influenced by the practical concern underlying the analysis: to evaluate whether the inclusion of

150

contextual variables can enhance the predictability of Japan's behavior over and above the prediction possible from a simple reciprocal response approach.[7] Thus we are concerned less with the simple correlation between the the dependent and independent variables (as demonstrated under hypotheses 1 and 2 above) than with the degree to which the explained variance in the dependent variable increases beyond the explained variance due to reciprocal variables when the effects of contextual variables are added.[8] The independent and additional contribution of contextual variables to the explained variance of the dependent variable is measured by the increase in R^2 when the contextual variables are added to a multiple regression into which the reciprocal variable has already been entered. The reciprocal predictor of Japan $\rightarrow$ X behavior in an issue area is always $X \rightarrow$ Japan behavior in the same issue area. Again, all variables are measured by the tone index across 135 periods.

RESULTS OF ANALYSIS OF CONTEXTUAL EFFECTS

Other Issue Area Hypotheses (3-5)

Table 4 gives the simple correlation between input to and output from Japan on the eight dyad issue area combinations, the multiple correlations when all significant[9] contextual predictors are introduced into the equation, and the increase in the squared correlation (from simple to multiple) that results. For example, the first line in Table 4 shows

---

7
  The reciprocal predictor of Japan's behavior toward a country in a given issue area is the country's behavior toward Japan in the same issue area.

8
  The simple squared correlation between a contextual predictor and the dependent variable would equal the enhancement in R^2 if the non-contextual and contextual predictors were truly independent (non-multicollinear). In actuality, "independent" variables rarely are completely unrelated.

9
  That is, in some cases additional variables did not make it past the F criterion ($p < .01$) into the multiple regressions.

TABLE 4

Simple and Multiple Correlations to Examine Contextual Effects

Dependent Variable	Simple r (independent variable is X → JAP in same issue area)	r^2	Multiple R (independent variables are X → JAP in all issue areas)	R^2	Increase from r^2 to R^2
JAP → USA					
Political-Military	+.14	.02	+.20	.04	+.02
Diplomatic	+.48	.23	+.48	.23	.00
Trade	+.50	.25	+.51	.26	+.01
JAP → USR					
Political-Military	+.18	.03	+.21	.04	+.01
Diplomatic	+.29	.08	+.42	.18	+.10
Resource Dependence	+.67	.45	+.68	.48	+.01
JAP → PRC					
Diplomatic	+.64	.41	+.64	.41	.00
Trade	+.87	.76	+.87	.76	.00

the correlation and r^2 between JAP → USA Political-Military and USA → JAP Political-Military; then the multiple correlation and R^2 between JAP → USA Political-Military (the dependent variable) and all three independent variables USA → JAP Political-Military, Diplomatic, Trade; then the difference between the simple and multiple squared correlations. The increase from r^2 to R^2 shown is a measure of the extent to which prediction is improved by including the contextual variables.

Reviewing the above table, one finds that in only one out of eight possible instances (JAP → USR Diplomatic) does the inclusion of contextual variables enhance the predictability of a variable to any considerable degree. Table 5 provides more detail on this one case.

TABLE 5

Simple Correlations of Japanese Diplomatic Behavior Toward the Soviet Union with Soviet Behavior Toward Japan in Three Issue Areas

Independent Variable	Correlation
USR → JAP Diplomatic	+.29
USR → JAP Resource Dependence	+.32
USR → JAP Political-Military	+.04

From Table 5 it can be concluded that Soviet behavior toward Japan in the Resource Dependence issue area is the contextual factor responsible for the enhanced predictability of Japan's Diplomatic behavior toward the Soviet Union. In other words, Soviet behavior toward Japan regarding Resource issues appears to have some independent contextual effect on Japanese Diplomatic behavior toward the Soviet Union. This result provides some support for hypothesis 3, which anticipates that Japan's received behavior in economic issues affects the behavior Japan sends in every other issue area. But that hypothesis also anticipates several other contextual effects that are not observed in the results. Specifically, effects of the Trade issue in U.S.-Japanese and PRC-Japanese relations on other issue areas are not observed. Thus, hypothesis 3 receives support in only one out of several possible cases. In substantive terms, whether Japan receives hostile or friendly behavior from a country in economic areas has little apparent effect on Japan's Diplomatic or Political-Military behavior toward the country.[10] Hypotheses 4 and 5 are not supported by the results in Table 4. PRC behavior toward Japan in the Trade issue area has no apparent independent effect on Japan's behavior toward the PRC in the Diplomatic issue area. Thus, Japan apparently has not responded strongly in the Diplomatic area to China's initiatives on Trade. Soviet behavior toward Japan in the Political-Military area has no apparent independent effect on Japan's behavior toward the Soviet Union in the Resource Dependence area.

---

[10] Possible reasons for the rejection of this and other contextual hypotheses are presented under "Summary and Discussion" at the end of this section.

Thus, there is no evidence that Japan has tied its Japanese-Soviet resource development activity to Soviet behavior regarding political and military issues salient to Japan, such as the political status of contested territory.

Third Country Hypotheses (6 and 7)

Evidence from simple correlations showed that analyses to determine the degree of enhancement in predictability by including third country variables were not warranted. The added predictability from including the third country variables would be miniscule at best, for none of the simple squared correlations between the dependent variable in hypotheses 6 and 7 and the third country variables was greater than .01. Table 6 shows the simple r^2's between the dependent variables and the third country variables.

TABLE 6

Simple Squared Correlations between Dependent Variables
and Third Country Variables for Hypotheses 6 and 7

Hypothesis	Dependent Variable	Third Country Variable	r^2
6	JAP → PRC Diplomatic	USA → JAP Political-Military	.01
6	JAP → PRC Trade	USA → JAP Political-Military	.003
7	JAP → PRC Trade	USR → JAP Political-Military	.01

SUMMARY AND DISCUSSION

The objective of this section has been to determine whether and to what extent an issue area level of analysis and the consideration of contextual effects can enhance the predictability of a country's international behavior. In the case of Japan we found evidence that an issue area focus could enhance the prediction of behavior, but that the contribution of nearly all contextual effects considered is either very small or nonexistent.

Thus, the findings and suggestions of Fukui (1974) and Hellmann (1972) to the effect that Japan deals with various issue areas in discrete and particular fashions are supported by the analyses above. Rosenau's (1960) more general statements regarding the potential variation of behavior patterns across issue areas are also supported. Japan often responds dissimilarly to similar external inputs in different issue areas. Japanese responses tend to be more intense in economic issue areas than in other issue areas.

Contextual factors, on the other hand, are found to have little influence on Japan's behavior and therefore to contribute little to the prediction of that behavior. We are inclined to regard the rejection of contextual hypotheses tentatively and suggest that our findings may be a result of an inappropriate testing method. It is very possible that contextual effects take longer to manifest themselves than non-contextual effects. That is, while Japan may respond to a nation fairly immediately following an input from that nation, the effects of that input on Japan's behavior toward other countries may occur over a longer period of time. Thus, contextual effects may occur, but with a lag. All analyses reported above involved simultaneous relationships between independent and dependent variables. It is also possible that the effects of context may be different at different points in time. If this is so, then more positive results would be found by testing the contextual hypotheses in several different subsets of time domains. All analyses reported above were done across the entire history of our data. Thus, the results from the above contextual analyses must not be regarded as having shown definitively that contextual factors have no effects on Japan's international behavior.

While the negative contextual results may be due to the use of inappropriate techniques, the results are not entirely inconsistent with certain relevant indications in the substantive literature on Japan. Parts of that literature indicate that there is no necessary relationship among issue areas in Japan's international behavior, and that a general tendency exists for the Japanese to treat matters on a "case-by-case" basis rather than

155

in an integrated way. With regard to the absence of a necessary relation-
ship among issue areas, Overholt stresses that the international economic
and political affairs of Japan may develop independently over time. "The
connection between economic and political relationships is not so tight"
as has often been thought, Overholt writes (1974: 2). Japan's economic
relationships with other countries are determined primarily by the mutual
advantages to be gained from trade, rather than by political considerations.
Thus, for example, a decline in U.S.-Japanese political relations need not
cause a souring of economic relations between the two countries (Overholt,
1974: 2), and enhanced economic relations between Japan and the Soviet
Union do not "automatically imply political kinship" between them
(Overholt, 1974: 3).

If inter-issue area effects are apparent, the Japanese tendency to treat
international affairs issues on a "case-by-case" basis makes such effects
even less likely. While scholars have conflicting views on why a case-by-
case tendency is exhibited in Japan's international behavior, they agree
that the tendency does exist. Tsurutani (1974: 14) attributes this
characteristic to the formal and informal structures in Japan's policy-
making bureaucracy, while Reischauer (1974: 150-151) believes that the
tendency results from a conscious long-range policy decision to separate
economic affairs from other considerations. No matter the reason, the
tendency to allow different issue areas to proceed relatively unaffected
by other issue areas has been noted.

CHAPTER 6
APPLICATION OF EVENT PATTERNING FOR DECISION ANALYSIS

157

INTRODUCTION

The purpose of this chapter is to demonstrate the application of the event patterning concepts discussed in Chapter 4 (Event Patterning for Decision Analysis) to two directed dyad pairs, Japan→United States and United States→Japan, and Japan→Soviet Union and Soviet Union→Japan. Both overall behavior between dyad partners and behavior in selected issue areas are explored for the period January 1972 to July 1974.

The analysis indicates that the event patterning approach successfully identifies both a normal range of interactions between dyadic partners and deviant patterns of behavior associated with development and resolution of different salient international issues. Dyadic partners and affected third parties are shown to have similar response patterns within the same issue area, and these are explored in detail for the political-military security issue of Japanese-U.S. and Japanese-Soviet interactions.

It will be recalled that the event patterning concept uses three indicators of interactive behavior:

(1) Tone, a summary weighted scalar index of quality of inter-
action based on a 22-category event coding scheme.

(2) Intensity, a deviation index of frequency of interaction from expected levels determined by the regression of fre-
quency of dyadic interactions on a size indicator (GNP).

(3) Movement, tone and intensity coordinates over time; in this case, the temporal coordinates represent 13-week moving averages of weekly interaction values.

The plot of points on the intensity and tone axes of the event patterning diagram permits the analyst to describe the overall range of normal behaviors

which characterize a given country's interaction with a second country. It also permits the discovery of patterns of salient issue development and resolution, where salient issues are identified by deviations from the range of normal behaviors. The pattern of issue development and resolution may be described in terms of:

(1) <u>Vectors</u> - the length of the unidirectional line connecting the temporal data points from the beginning of a salient issue area to the maximum deviant point achieved as it develops, and from this point back to the normal interaction range.

(2) <u>Angles</u> describing the direction of vector deviation from the horizontal tone axis,

(3) <u>Duration</u> of salient issue periods in terms of number of weeks for which the deviant pattern is observed,

(4) <u>Rate of change</u> of behavior during salient issue periods.

Moreover, the comparison of the patterns of directed dyad partners permits the analyst to evaluate (a) the similarity or dissimilarity of partner behavior over time and in specific issue areas, and (b) the quality, intensity and lead or lag time of actions and reactions between partners.

IDENTIFICATION OF AREAS OF NORMAL DYADIC INTERACTIONS

The density of data point clusters may be used to define the normal interaction range for each dyadic partner. It is hypothesized that in the absence of disturbance, behavior tends to assume the values associated with the normal range, and that this range may be used to characterize the quality of interactions of a given directed dyad. The normal interaction ranges may differ for different dyad partners, and a variety of factors, such as latent hostilities on the part of one actor or superpower indifference to weak powers, may explain why normal behaviors may not coincide or why they may change over extended periods of time. Nevertheless, the normal range may serve as the base from which to measure deviant behaviors and as such it serves as a directed dyad-specific indicator of the amount and quality of disturbance present in the international relations of given nations.

159

Figure 1 presents the event patterning diagram of overall Japanese behavior toward the United States for the period January 1972 to July 1974. It can be seen that the tone and intensity of Japan's interactions with the United States vary considerably over time. The range of normal interaction can be identified visually on the figure by the crescent-shaped cluster of data points moving approximately from data point 30 in quadrant II down through quadrant III and terminating in quadrant IV in the area between data points 82 and 104. This crescent pattern is indicated again in Table 1 which details the density of interactions in various segments of the pattern quadrants. Together, the density table and the event patterning diagram indicate that overall Japan's interactions with the United States tend to be mildly negative in tone (range: -.06 to +.03) and only slightly deviant from the expected frequency of interactions (range: +.33 to -.33).

In comparison with Japan's behavior toward the United States, U.S. behavior overall toward Japan, graphed in Figure 2, varies less, is less frequent in intensity, and more positive in tone. The U.S.→Japan interaction densities in Table 2 indicate that U.S.→Japan behavior is concentrated within a narrow box defined by neutral, but slightly positive, tone (range: 0 to .09) and a frequency between 50 and 100 percent lower than expected. A comparison of the density tables for the two directed dyads, Japan→U.S. and U.S.→Japan, indicates that the normal interaction ranges of the two countries do not overlap at all. U.S. interactions are contained entirely within quadrant IV while Japanese interactions cover all four quadrants.

Japanese-Soviet interactions tend to be more similar in tone and intensity than do Japan-U.S. interactions. Figure 3 represents the patterning of Japanese interactions with the Soviet Union for the entire time period. The clustering of data points indicates that Japan's interactions with the Soviet Union are close to expected values in intensity (0 percent deviation) and considerably more positive in tone than Japan→U.S. interactions. They all fall in the positive zone of quadrants I and IV. They also demonstrate greater concentration over time. Nearly 50 percent of Japan's initiatives toward the Soviet Union are concentrated in the range of normal interactions, as indicated in the density in Table 3.

160
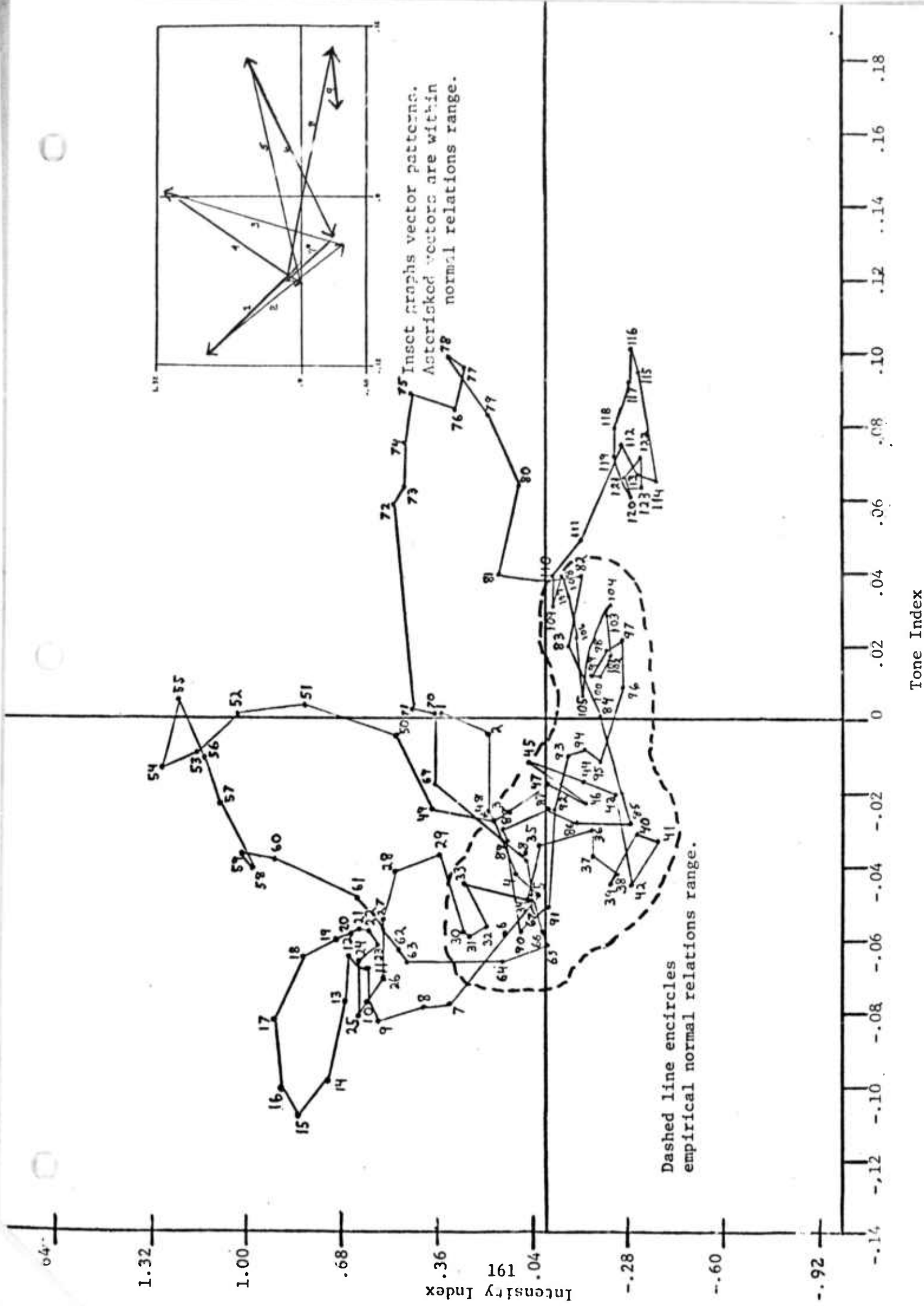
Figure 1. Event Patterning of Japan → U.S. (All Issues), 1972-1974

TABLE 1

Density of Japan → U.S. Interactions - All Issues

y \ x	-.06	-.03	.0	.03	.06	.09
~1.1	1	4	2			

y \ x	-.12	-.09	-.06	-.03	.0	.03	.06	.09
~.9	3	5	2			1		
~.33	9	7	3	3		1	3	
~.16	2	16	5			1	3	2
~-.16	1	7	10	12	7	8	3	
~-.5	1					1		

x-axis: -.14 -.12   -.06   .0   .06   .12   .18   .24
y-axis: 1.98 1.32 .66 .0 -.66 -.92

TABLE 2

Density of U.S. → Japan Interactions - All Issues

y \ x	.0	.03	.06	.09	.12
~-.16	3	6	2	1	7
~-.66	9	16	13	3	2
~-.92	25	21	15		

x-axis: -.14 -.12   -.06   .0   .06   .12   .18   .24
y-axis: 1.98 1.32 .66 .0 -.66 -.92
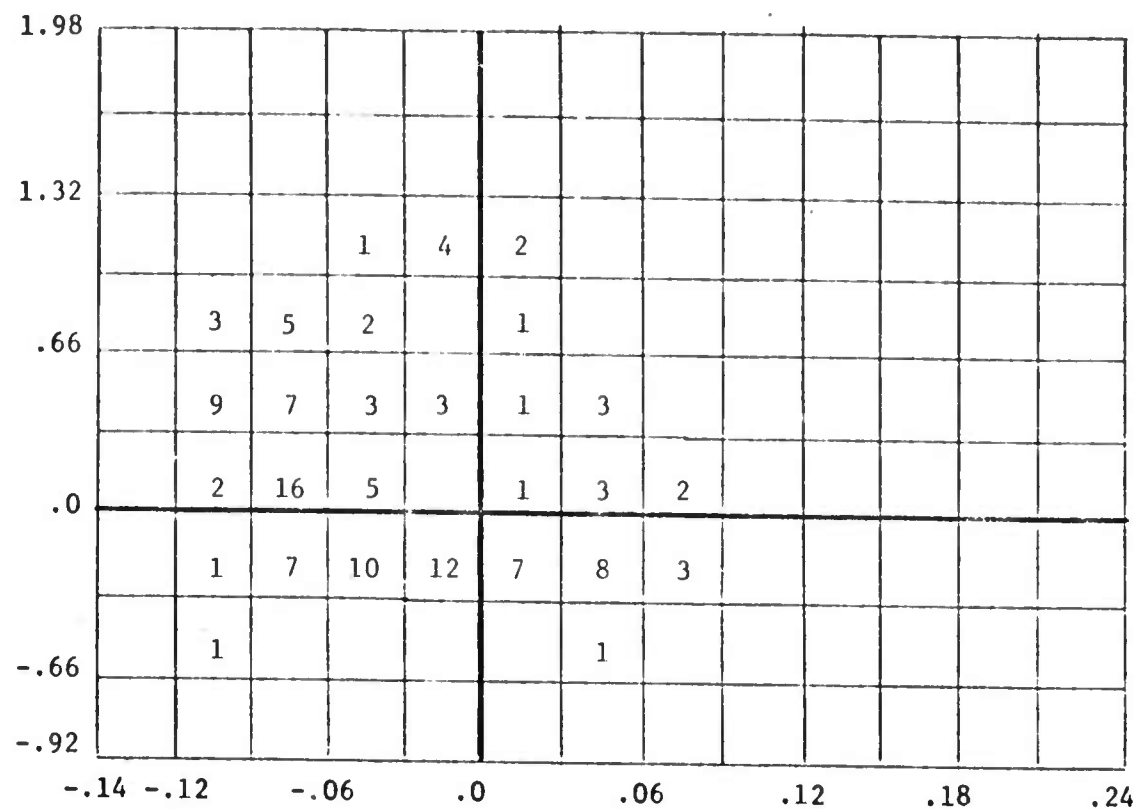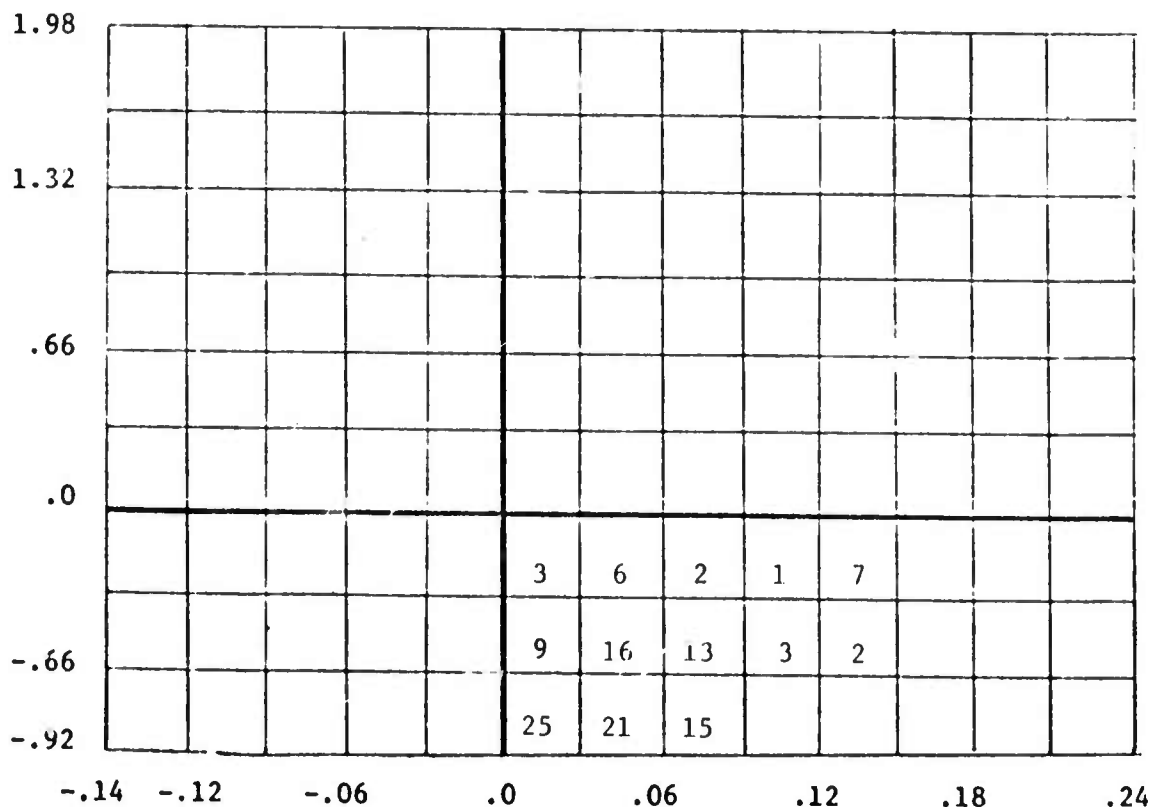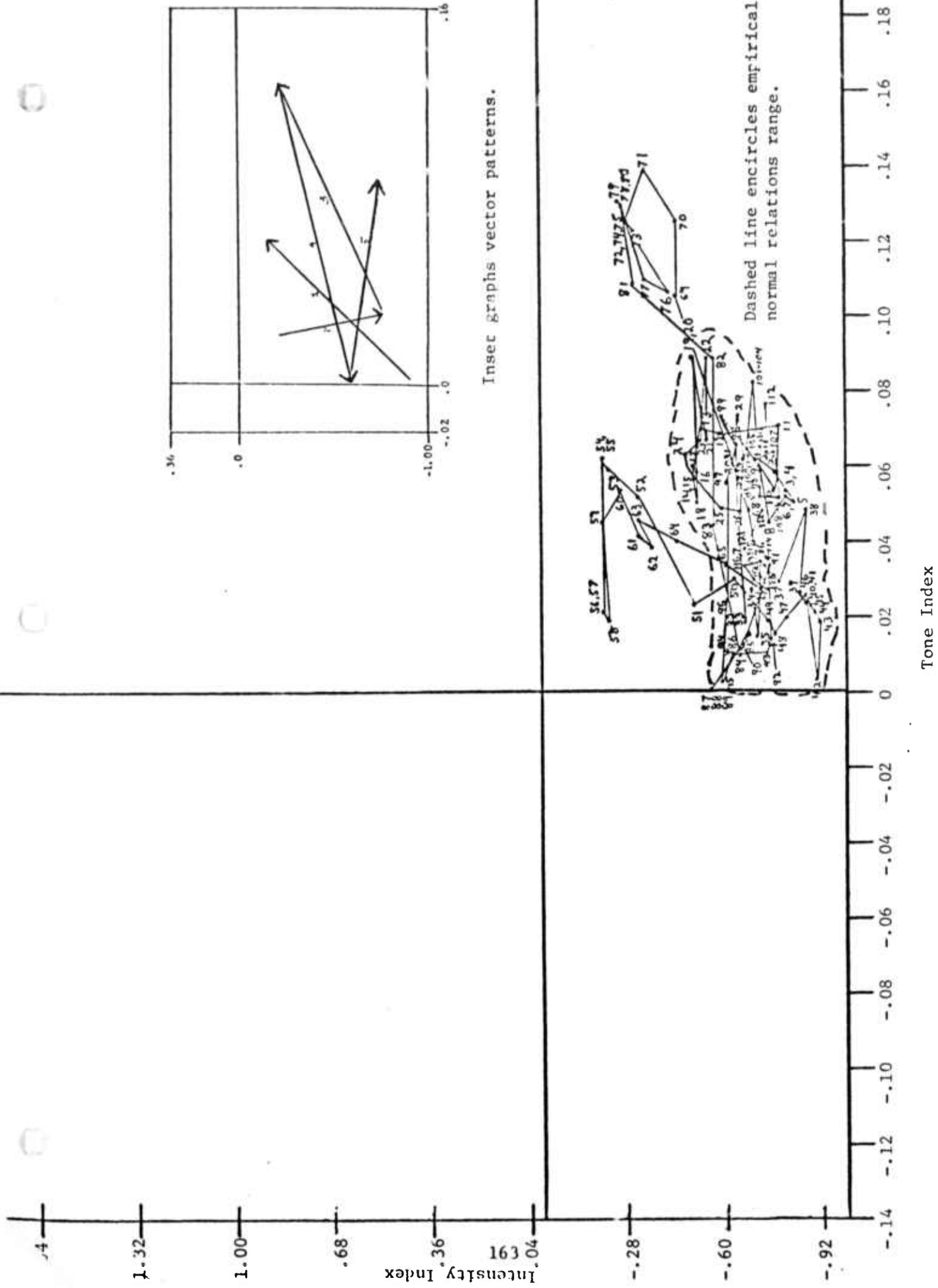
Figure 2. Event Patterning of U.S. → Japan (All Issues), 1972–1974

Inset graphs vector patterns.

Dashed line encircles empirical normal relations range.

Tone Index

Intensity Index

163
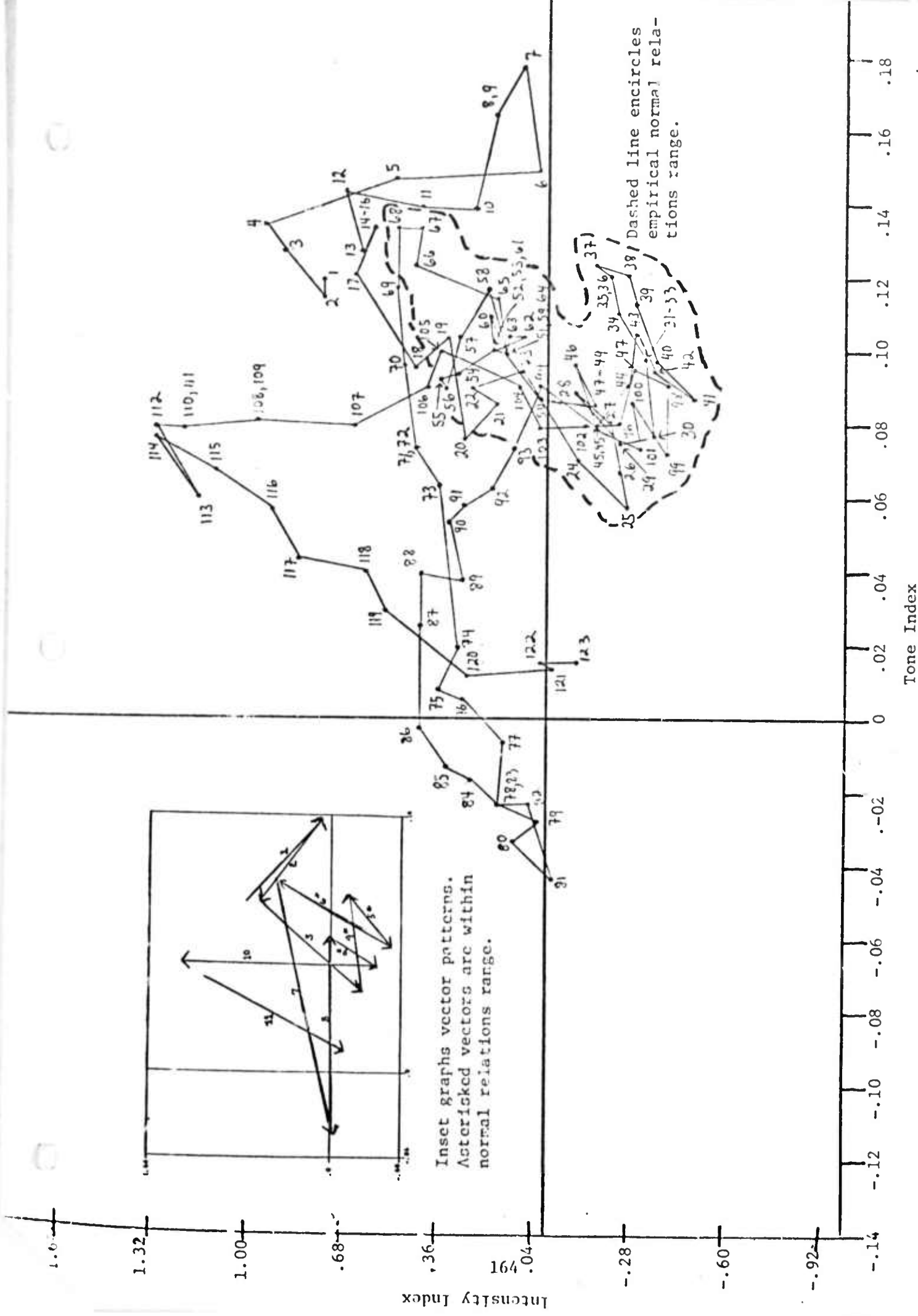
Figure 3. Event Patterning of Japan → USSR (All Issues), 1972-1974

Tone Index

Intensity Index

Inset graphs vector patterns. Asterisked vectors are within normal relations range.

Dashed line encircles empirical normal relations range.

TABLE 3

Density of Japan → USSR Interactions - All Issues

	-.14	-.12	-.06	.0	.06	.12	.18	.24
1.98								
1.32								
.66				2	2	2	2	
			2	3	2	5	5	11
.0		1	6	4	5	8	17	2	3
			1		2	1	14	9	4
-.66						3	3	
-.92								

TABLE 4

Density of USSR → Japan Interactions - All Issues

	-.14	-.12	-.06	.0	.06	.12	.18	.24
1.98								
1.32								
						2		
.66					3	5	1	
				1	9	3	4	3	4	3
.0				2	7	12	5	8	4	6	4
				1	6	6	8	2	5	4	2
-.66				3				
-.92								

165
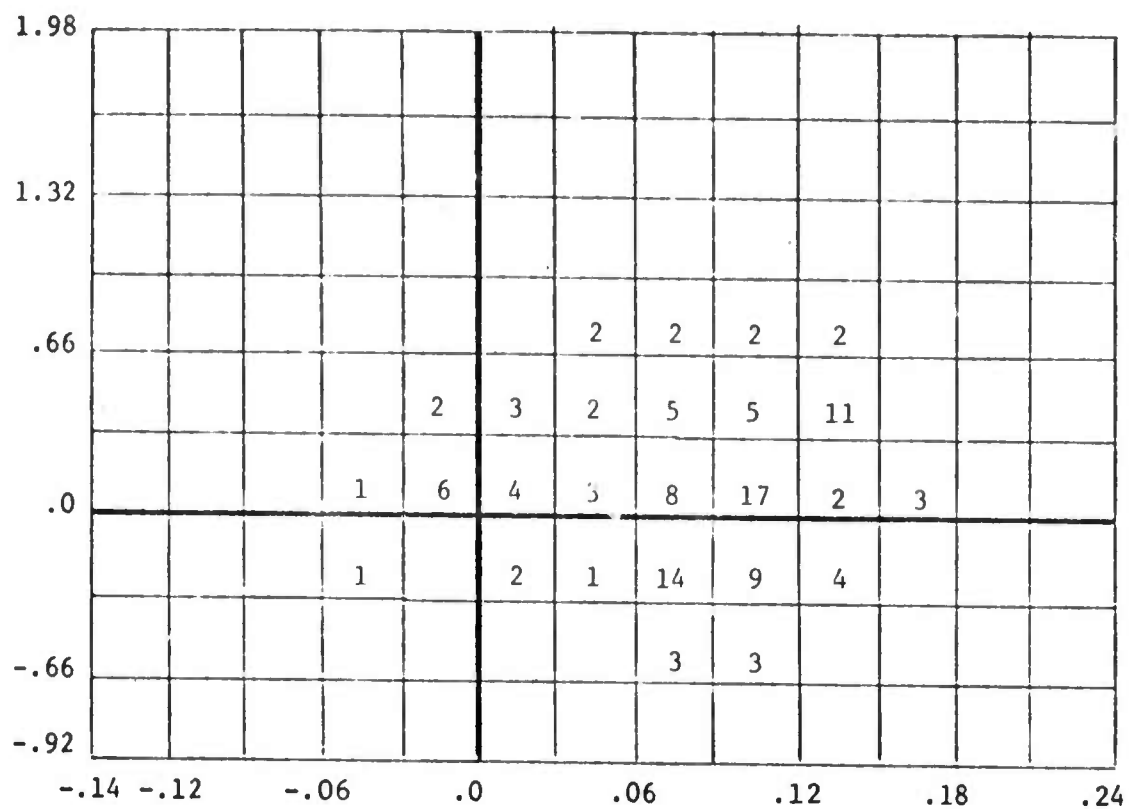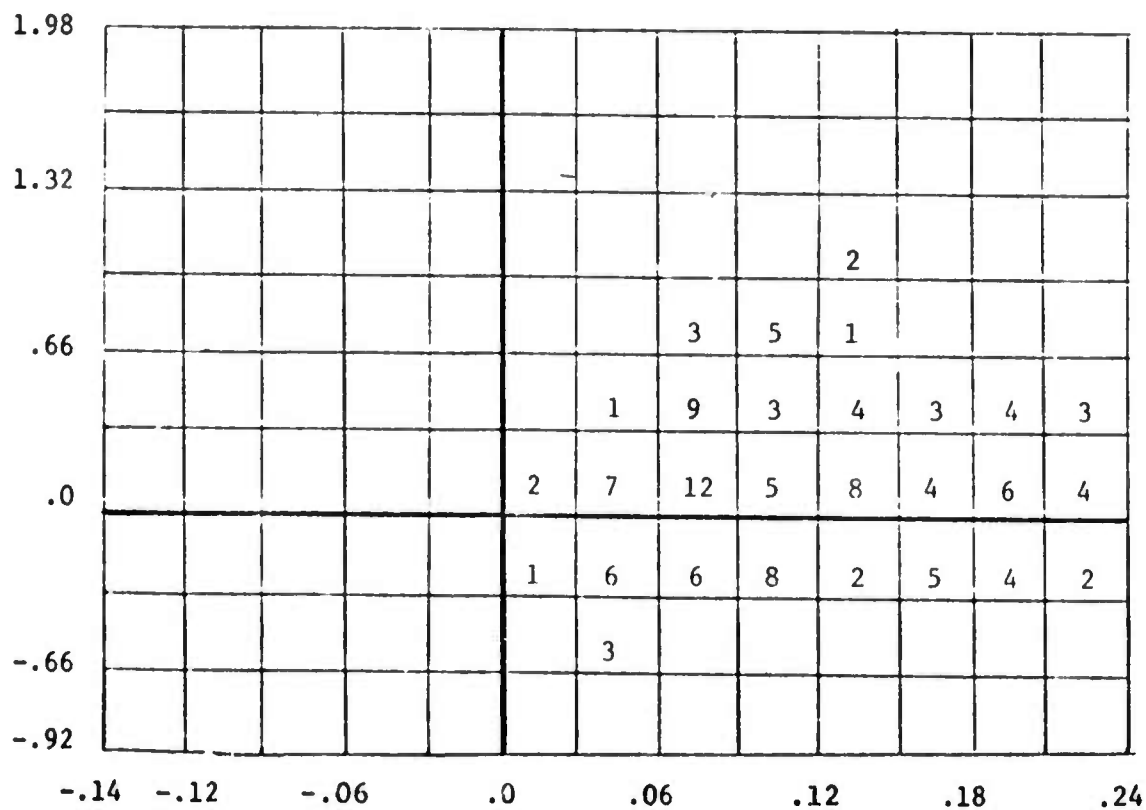
The clustering of Japanese behavior toward the Soviet Union spans the intensity range of deviations one-third greater and one-third less than expected frequency, while the tone characteristic of these interactions falls into a range defined as positive, neutral communication (range: +.06 to +.12).

Soviet interactions with Japan range into an even more posi ve zone than do Japan's initiatives toward the Soviet Union. In Figure 4, Soviet initiatives extend to a more positive point than any observed thus far. At the same time, Table 4 indicates that the range of normal interactions for the Soviet Union→Japan is very slightly less positive than Japan→Soviet interactions, but that the two dyad partners' normal interaction ranges overlap considerably. The Soviet range is slightly more concentrated than Japan's. While the normal range of Japan→Soviet initiatives falls across quadrants I and IV, Soviet→Japan initiatives concentrate in quadrant I.

IDENTIFICATION OF CRITICAL ISSUE PATTERNS

The identification of a range of normal interactions defines the expected behavior of dyad partners. That is, in the absence of disturbances from the international, domestic, or economic environments, it would be predicted that Japan→U.S. interactions would fall into a range of low intensity and mildly negative behavior, while U.S. initiatives to Japan would be even less intense, but mildly positive. Both Japan→Soviet and Soviet→ Japan interactions would be low in intensity, but more strongly positive than U.S.→Japan interactions.

When critical issues arise that disturb the normal relations between dyad partners, it may be expected that more extreme behaviors will occur. If the critical issue is not resolved and if relations remain strained for an extended period of time, it may be that a new normal range will be established. If the critical issues are resolved, however, behaviors are expected to return to within the normal range.

Inset graphs vector patterns.
Asterisked vectors are within normal
relations range.

Dashed line encircles empirical
normal relations range.

Tone Index

Intensity Index

167
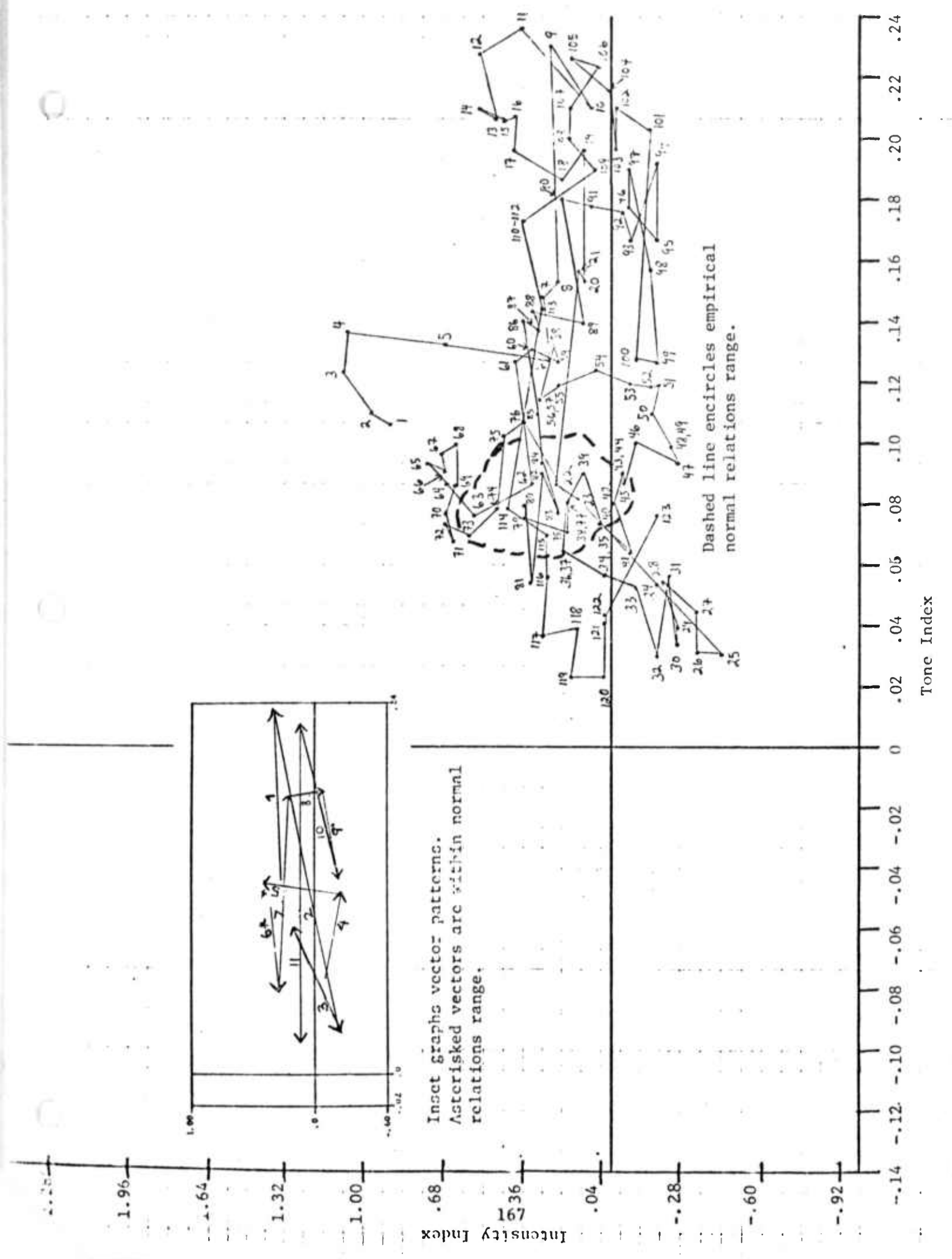
Figure 4. Event Patterning of USSR → Japan (All Issues), 1972-1974

The observation of the patterns of interaction that accompany the emergence of salient issues permits us to discover how different nations react in different types of issues, and how different issues are responded to in different ways. The pattern of data points plotted on the event patterning diagram permits the analyst to identify those time periods that are characterized by these highly salient issues. For example, in Figure 1 (Japan→U.S.) four salient patterns are observable. These are indicated by the movement of data points toward and away from the inflection points at weeks 14-17, 54-55, and 75-78, and 115-116. In contrast, only two clearly salient patterns are observed in Figure 2 (U.S.→Japan) as indicated by the pattern of movement toward the data points at weeks 70-80 and 55-58. In each case the movement of data points over time toward and away from these extreme points takes a pattern of departure from the range of normal interaction, inflection at the extreme point, and return to the normal range.

Each of these patterns may be described in terms of its quadrant location, the direction of its movement, rate of change, and the vectors and angles that describe the movement of data points away from and back to the normal relations range. Once the substance of the issues that cause the different patterns to develop is known, the different mathematical characteristics of the patterns may be compared and used as a base from which general statements about overall and issue-related behavior may be derived.

Tables 5, 6, 8, and 9 provide data for the mathematical analysis of overall directed dyad behavior. Column 1 in the tables identifies the inclusive weeks for which salient patterns or vectors are observed; column 2 indicates the number of weeks of duration of each pattern; and column 3 gives the Pearson product-moment correlation coefficient of the frequency and tone values associated with each vector pattern. The correlation coefficient describes the direction and degree of association of these values. A low correlation indicates that frequency and tone do not vary together, or that their pattern of covariance is not linear (and therefore does not describe a straight-line vector). A negative

168

TABLE 5

Japan → U.S. Vector Patterns, Overall Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location
1	5-15	11	-.80	.81	.07	95.0°	NNW: II
2	15-41	27	-.79	1.24	.05	93.6°	SSE: II→III
3	41-55	15	.76	1.61	.11	88.2°	NNE: III→II→I
4	55-66	12	.86	1.23	.10	86.6°	SSW: I→II→III
5	66-77	12	.73	.31	.03	66.8°	NE: III→II→I
6	77-35	9	.94	.58	.06	78.3°	SW: I→IV→III
7[a]	85-90	6	-.43	.39	.06	99.5°	NNW: III→II
8	90-116	27	-.67	.42	.01	116.8°	SE: II→III→IV
9	116-123	8	.12	.05	.01	14.6°	W: IV

---

[a] Patterns Within Normal Relations Zone

TABLE 6

U.S. → Japan Vector Patterns, Overall Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	42-55	14	.92	.69	.05	85.7°	N:	IV
2	59-67	19	.93	.50	.06	87.2°	S:	IV
3	67-79	13	.94	.47	.04	76.5°	NNE:	IV
4	79-95	17	.90	.36	.02	68.5°	SSW:	IV
5	95-104	10	-.67	.13	.01	130.2°	SE:	IV

correlation coefficient indicates, for a given pattern, that the most frequent events are more negative in tone. A positive correlation indicates that the most frequent events are also the most positive. Column 4 gives the length of the vector which describes each pattern, and column 5 indicates the average rate of movement of data points along that vector. The comparison of vector length and rates of changes permits the evaluation of the relative rapidity with which certain patterns emerge and extreme values of intensity and tone are achieved. Column 6 gives the size of the angle which each vector forms with the horizontal tone axis. This value indicates which behavior component, intensity or tone, is the driving force behind the pattern development and, when compared across patterns and dyads, indicates similarity of behavior patterns. If the angle value is below 45 degrees or between 135 degrees and 180 degrees, change in tone is the major factor contributing to the pattern. If the angle value falls between 45 degrees and 135 degrees, intensity is the major factor. When the angle value approaches 90 degrees, intensity becomes almost the sole contributor to pattern development, and conversely, when the angle value approaches 0 degrees or 180 degrees, tone becomes the sole contributor. When angle values approach 45 degrees or 135 degrees, tone and intensity make equal contributions to the patterns. The final column in the tables indicates the vector location and direction of movement within and across quadrants and is determined by the slope of the vector regression line. Vector direction of movement is given in terms of compass points (north, south, north-northwest, and so forth). Quadrant location, represented by roman numerals, refers to the areas of the event patterning diagram (Chapter 4).

Table 5 presents the analytical data for the Japan→U.S. directed dyad. Eight distinct patterns are observed. Two of these are extended, lasting 27 weeks, while three are relatively brief, lasting between 6 and 9 weeks. With the exception of the last three patterns, the correlation of intensity and tone values is quite high, indicating a strong linear movement pattern. An examination of the data points for weeks 85-90 and 116-123 in Figure 1 indicates that these patterns are curvilinear, that is, for part

171

of the pattern duration, one behavior attribute dominates and for the remainder of the pattern, the other behavior attribute dominates. For example, in the pattern for weeks 85-90, intensity increases while tone remains approximately constant until week 88, after which tone decreases while intensity remains constant.

Examination of the individual vector patterns in Figure 1 and of the vector angles and directions in Table 5 indicates that the vector patterns tend to move in pairs. That is, a distinctive set of interactions occurs which results in the movement of behavior out of the range of normal interactions and along a given vector to an extreme point. The pattern inflects at the extreme point and traces a return route roughly parallel to the original vector pattern. A comparison of the patterns identified in the table with the plotted patterns in Figure 1 indicates that the first pattern moves from data point 5 in the normal range, with increasing intensity and more negative tone out to data point 15. From data point 15, both intensity and tone coordinates trace a steady decrease back to week 41, again within the normal range. A comparison of the angle values for the two vectors which summarize these patterns, 95 degrees for the first pattern and 93.6 degrees for the second, indicates that they are closely parallel and that intensity is almost the sole factor causing movement along both vectors.[1] The fact that the angles are both greater than 90 degrees indicates that the tone contribution is slightly negative.

A comparison of the vector lengths and rates of change of the two pattern vectors indicates that while the vector for the increasing intensity pattern is not as long as that for the decreasing intensity pattern (.81 versus 1.21) and therefore does not describe as great a total amount of change as the decreasing intensity pattern, the average rate of change from time unit to time unit is somewhat greater for the first vector (.07) than for the second (.05).

---

[1] The differences in scale of the axes of the event patterning diagrams make the angles appear to be much greater than the reported values. The angle values used represent the actual location of the vectors with respect to the axes, not the apparent fit which is seen in the figures.

The second pattern pair observable in the Japan→U.S. dyad occurs between weeks 41-55 (increasing interaction) and 45-66 (decreasing interaction). Again, the correlation between tone and intensity is high, indicating that the patterns may be described by linear vectors. The angle values indicate that intensity changes again dominate the pattern development, but that the tone contribution is positive rather than negative. While the increasing function is slightly longer in duration than the decreasing function, the average rates of change are about equal (.11 versus .10).

A similar pattern of paired movement emerges for the fifth and sixth vectors in the Japan→U.S. dyad, and apparently for the eighth and ninth. The ninth time period however is incomplete, and while it would appear that the vector which is emerging from the point between weeks 116 and 123 in Figure 1 is beginning to move back to the normal range identified in the density charts, the pattern remains indeterminant. In sum, the general pattern that emerges from Table 5 is one of paired movement of vectors away from and back to the normal relations range, and a strong tendency for intensity to be the driving force behind Japan's initiatives toward the United States.

Table 6 indicates that the number of identifiable vectors for the U.S. initiatives toward Japan is much fewer than those for Japan to the United States. The entire pattern of movement is contained within a narrow space of quadrant IV as indicated in the Density Table 2. In comparison with the Japan→U.S. patterns, the U.S.→Japanese vectors tend to be shorter and the rates of change lower, indicating the more stable quality of behavior practiced by the United States in its relations with Japan. Again, the vectors tend to move in pairs. Thus the vector for weeks 42-55 describes an increasing function, while the vector for weeks 59-67 describes a decreasing function. A similar pattern occurs with the vectors for weeks 67-79 and 79-85. The angle sizes for the two pairs of vectors are nearly the same, indicating parallel movement. In each case, intensity is the driving force behind the pattern development, though tone contributes somewhat more to the second pattern pair, as indicated by the smaller

173

angle size. Note that the final vector, that for weeks 95-104, has an angle of 130 degrees indicating nearly equal contribution of intensity and tone. The angles for the first two vector pairs indicate positive vector direction, while that for the final vector indicates a negative vector direction.

Pattern Comparison Between Dyads: Japan and the United States

The two directed dyads which have just been examined interact with each other, and it may be appropriate to regard the initiatives of one actor as stimuli to or responses to the other's initiatives. A comparison of the time-bound vectors identified for the separate dyad partners will indicate whether, in fact, the behaviors of the two dyad partners are highly related.

The time periods covered by each vector, the direction of the vectors, and the angle sizes are the appropriate data for this comparison. Even though the actors' normal relations ranges are different, or the ranges of behavior covered by the vectors are different, if the direction, duration, and quality of interaction as indicated by the angle values are similar, it may be inferred that the behaviors of one partner are responsive to those of the other, and in fact, deal with the same critical issue.

Table 7 juxtaposes the data necessary for the comparative analysis of dyad interactions. An examination of the vector weeks identified for each directed dyad indicates that the first pattern pair for Japan→U.S. has no counterpart in U.S.→Japan behavior. The second Japan→U.S. pair, weeks 41-55 and 55-66, however, parallels the U.S.→Japan pair for weeks 42-55 and 59-67. It is noteworthy that the U.S.→Japan pattern develops with a short lag behind the Japan→U.S. pattern. This would suggest that the patterns for both countries are determined by Japanese initiatives toward the United States. To further confirm the interpretation that the dyad partners' behaviors are responsive one to another, the direction of movement of the vectors is similar across the directed dyads, and the angle sizes reflecting the quality of interaction characterizing the

174

TABLE 7

Comparison of Vector Patterns Across Dyads:
Japan and United States

Japan → U.S.			U.S. → Japan		
Inclusive Weeks	Angle Value	Vector Direction	Inclusive Weeks	Angle Value	Vector Direction
5-15	95.0°	NNW	---	---	---
15-41	93.6°	SSE	---	---	---
41-55	88.2°	NNE	42-55	85.9°	N
55-66	86.6°	SSW	59-67	87.2°	S
66-77	66.8°	NE	67-79	76.5°	NNE
77-85	78.3°	SW	79-95	68.5°	SSW
85-90	99.5°	NNW	---	---	---
90-116	116.8°	SE	95-104	130.2°	SE
116-123	14.6°	W	---	---	---

vectors are likewise similar, indicating approximate parallel movement of behaviors by the two actors. Similar patterns and interpretations can be given to the Japan→U.S. vector pair corresponding to weeks 66-77 and 77-85, to its U.S.→Japan counterpart for weeks 67-79 and 79-95, and to the isolated Japan→U.S. vector for weeks 90-116, and U.S.→Japan vector of weeks 95-104. It should be noted that in spite of the different lengths associated with these vectors (see Tables 5 and 6) movement along each vector is approximately parallel. Thus, though the duration of salient issue patterns varies with respect to actor, the quality of interaction is similar. The difference in duration provides a clue as to the relative importance of different subject matters to the different countries.

JAPANESE-SOVIET INTERACTIONS

Analyses similar to those just described for U.S.-Japanese interactions can be performed for Japanese interactions with the Soviet Union. Figures 3 and 4 indicated that Japan-Soviet interaction patterns are quite different from Japanese-U.S. patterns. Soviet initiatives to Japan tend to be positive overall, but quite diffuse, while Japan→Soviet relations tend to be more concentrated, but also evidence several clear salient behavior patterns.

Table 8 presents the data necessary to evaluate the behavior pattern for Japanese initiatives toward the Soviet Union. Seven separate vector patterns are identifiable from the inflection points of the frequency and tone coordinates. With two exceptions, the correlation coefficients indicate a strong linear pattern of relations between the behavior indicators. An examination of the data points in Figure 3 indicates that one of these exceptions, vector 6 between weeks 81 and 94, describes a curvilinear pattern and therefore is not accurately represented by the linear vector. The second exception, vector 8 between weeks 99 and 114, describes a pattern in which variation occurs only on the intensity scale, while tone remains approximately constant.

176

TABLE 8

Japan → USSR Vector Patterns, Overall Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	1-7	7	-.72	.86	.22	93.4°	S:	I
2	7-17	11	-.87	.56	.05	95.3°	N:	I
3	17-25	9	.88	.92	.10	94.4°	S:	I→IV
4 [a]	25-37	13	.29	.13	1.00	44.8°	NE:	IV
5 [a]	37-41	5	.93	.34	.07	81.8°	SSW:	IV
6 [a]	41-68	8	.66	1.01	.04	85.1°	NNE:	IV→I
7	68-81	14	.93	.56	.04	70.4°	SSW:	I→II
8	81-94	14	.08	.15	.01	15.9°	E:	II→I
9 [a]	94-99	5	.17	.42	.07	71.2°	SSW:	I→IV
10	99-114	16	.20	1.70	.11	93.8°	N:	IV→I
11	115-123	9	.95	1.23	.14	87.2°	S:	I→IV

---

[a] Patterns Within Normal Relations Zone

177

vectors are likewise similar, indicating approximate parallel movement of behaviors by the two actors. Similar patterns and interpretations can be given to the Japan→U.S. vector pair corresponding to weeks 66-77 and 77-85, to its U.S.→Japan counterpart for weeks 67-79 and 79-95, and to the isolated Japan→U.S. vector for weeks 90-116, and U.S. vector of weeks 95-104. It should be noted that in spite of the different lengths associated with these vectors (see Tables 5 and 6) movement along each vector is approximately parallel. Thus, though the duration of salient issue patterns varies with respect to actor, the quality of interaction is similar. The difference in duration provides a clue as to the relative importance of different subject matters to the different countries.

JAPANESE-SOVIET INTERACTIONS

Analyses similar to those just described for U.S.-Japanese interactions can be performed for Japanese interactions with the Soviet Union. Figures 3 and 4 indicated that Japan-Soviet interaction patterns are quite different from Japanese-U.S. patterns. Soviet initiatives to Japan tend to be positive overall, but quite diffuse, while Japan→Soviet relations tend to be more concentrated, but also evidence several clear salient behavior patterns.

Table 8 presents the data necessary to evaluate the behavior pattern for Japanese initiatives toward the Soviet Union. Seven separate vector patterns are identifiable from the inflection points of the frequency and tone coordinates. With two exceptions, the correlation coefficients indicate a strong linear pattern of relations between the behavior indicators. An examination of the data points in Figure 3 indicates that one of these exceptions, vector 6 between weeks 81 and 94, describes a curvilinear pattern and therefore is not accurately represented by the linear vector. The second exception, vector 8 between weeks 99 and 114, describes a pattern in which variation occurs only on the intensity scale, while tone remains approximately constant.

178

As was the case with the Japan→U.S. dyad, the vector patterns of Japan-
Soviet interactions tend to move in pairs. The first pair, vectors 1 and
2, occurs in an already extreme area of Japan-Soviet interaction (the
extremity is defined with respect of the range of normal interactions).
The fact that vector 2 is followed by a sharply declining vector (vector 3),
which brings the interaction pattern back into the normal range, suggests
that vectors 1 and 2 may mark a prolonged, unstable inflection endpoint
of a critical issue which had developed prior to the beginning of the
present data set. After the return to normal interaction which results
from the vector 3 pattern, no salient pattern occurs until week 68.
Beginning at that point, two vector pairs describing quite different
behaviors emerge. The first pair is described by sharply decreasing tone
values which move the pattern from quadrant I to quadrant II between weeks
68 and 81. Between weeks 81 and 94, the pattern is a reverse one of
increasing positive tone values until the normal relations are again
achieved. Though the vectors differ substantially in length, they are
each 14 weeks long and as a result, the rate of change in the first pat-
tern of increasing negative tone and decreasing intensity is four times
more rapid than the pattern of return to the normal range. The angle
sizes indicate that while the first vector in the pair is determined by
both intensity and tone, the second vector is determined almost exclusively
by increasing positive tone. In contrast, intensity is the driving force
behind both vectors in the pair which occurs between weeks 99-114 and
115-123.

Soviet→Japan interactions presented in Table 9 are considerably more diffuse
than those of the other directed dyads examined. The zone of normal inter-
action is less concentrated and as a result relatively few clear vector
departures from this zone emerge. An examination of the angle values for
all vectors indicates that the tone variable is more of an important
driving force behind pattern movements than has been the case in the
dyads examined so far.

179

TABLE 9

USSR → Japan Vector Patterns, Overall Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	6-11	6	.06	.16	.03	6.9°	E:	I
2	11-32	22	.92	.59	.03	75.3°	SSW:	I→IV
3	32-39	8	.77	.31	.04	80.8°	NNE:	IV→I
4	41-51	11	-.54	.12	.01	105.8°	SSE:	IV
5 [a]	51-61	11	.30	.58	.05	84.4°	NNE:	IV→I
6 [a]	76-81	6	.19	.06	.01	44.5°	SW:	I
7	81-90	10	-.25	.19	.02	153.5°	ESE:	I
8	90-97	8	.05	.28	.03	35.0°	WSW:	I→IV
9 [a]	97-99	3	.97	.28	.09	60.3°	SSW:	IV
10	99-106	8	.72	.27	.03	64.4°	NNE:	IV→I
11	106-120	15	-.00	.20	.01	.001°	W:	I

-----

[a] Patterns Within Normal Relations Zone

180

In spite of the relatively long duration of several of the vector patterns, the vector lengths are relatively short, and the rates of change are low. The erratic movement of the vectors does not seem to indicate clear paired patterns.

Pattern Comparison Between Dyads: Japan and the Soviet Union

The constant fluctuation of Soviet-Japan behavior makes it less likely that clear parallel response patterns will be found between the two dyad partners. Table 10 indicates that the individual vectors identified for each dyad partner tend to overlap in time very little. Rather, there appears to be a syncopated pattern in which a relatively long delay occurs between the behavior pattern changes of one country and response elicitation in the other. The Japanese patterns again appear to begin first and endure longer than the Soviet patterns. The angle values associated with vectors, even when these latter do coincide across the directed dyads, indicate that the quality of interactions as measured by intensity and tone are dissimilar. Note particularly that the angle value for the Japan-Soviet vector for weeks 81-94 is 15.9 indicating nearly complete dominance of positive tone, and the corresponding Soviet-Japan vector for weeks 81-90 is 153.5 degrees, indicating dominance of negative tone. The following Soviet-Japan vector for weeks 90-97 (35.0 degrees) indicates a shift to positive tone. The delay in response is greater than 9 weeks, however. A similar lack of parallelism is observed in the angle values for the overlapping final vectors for each dyad partner. (Japan-Soviet = 87.2 degrees while Soviet-Japan = .001 degrees.)

ISSUE AREA PATTERNS

The hypothesis behind the event patterning analysis states that identifiable critical patterns should be found to represent specific issue areas, and that these specific issue areas should be characterized by unique behavior patterns. The analyses presented so far have dealt with overall behavior. Patterns of behavior on specific issues were mixed together

181

TABLE 10

Comparison of Vector Patterns Across Dyads:
Japan and the Soviet Union

Japan → USSR			USSR → Japan		
Inclusive Weeks	Angle Value	Vector Direction	Inclusive Weeks	Angle Value	Vector Direction
4-7	93.4°	S	---	---	---
7-17	95.3°	N	6-11	6.9°	E
17-25	94.4°	S	11-32	75.3°	SSW
25-37	44.8°	NE	---	---	---
---	---	---	32-39	80.8°	NNE
37-41	81.8°	SSW	---	---	---
41-68	85.1°	NNE	41-51	105.8°	SSE
---	---	---	51-61	84.4°	NNE
68-81	70.4	SSW	76-81	44.5°	SW
81-94	15.9	E	81-90	153.5°	ESE
94-99	71.2	SSW	90-97	35.0°	WSW
99-114	93.8	N	99-106	64.4°	NNE
115-123	87.2	S	106-120	.001°	W

so that it was impossible to distinguish the unique patterns and contributions of analytically independent issue concerns. The analysis that follows explores the hypothesis that different issues evoke different, unique patterns of behavior by examining the behavior patterns on the political-military issue area for the two dyads, Japan→U.S. and Japan→ Soviet Union.

Figures 5 through 8 present the event patterning plots for the four directed dyads on the political-military issue. A comparison of these plots with those for overall behavior indicates both patterns within overall behavior which are most heavily concerned with a single unique issue, and the relative weight of the political-military issue within the overall context of interactions. Figure 5 represents Japan→U.S. behavior in the political-military issue. It can be seen that political-military interactions parallel overall interactions in the normal relations range. The first pair of vector patterns identified in the analysis of Japan→U.S. overall interactions clearly can be seen to deal with the political military issue area. Furthermore, an examination of Figures 1 and 5 indicates that the political-military issue is a major component, though not the sole subject, of the critical pattern which develops between weeks 41-55 and 55-61. Note that the shape of the pattern is much flatter when only the political military interactions are considered. Moreover, a comparison of the density tables for the political-military issue (Table 11) and for all behavior (Table 1) indicates that the quality of Japanese interaction with the United States on the political-military issue is much more negative than overall interaction. Apparently, more positive behavior on other issues tends to disguise the negative quality of relations on the political-military issue.

U.S. interactions on the political-military issue (Figure 6) are far less concentrated than overall U.S. interactions. While the latter were located exclusively in quadrant IV of Figure 2, political-military interactions cover three quadrants. Density Table 12 also indicates considerable divergence in the weight of the political-military issue as compared to the overall average of interactions presented in Table 2. Political-military issue tone tends to cluster at a minimum positive position and is a major
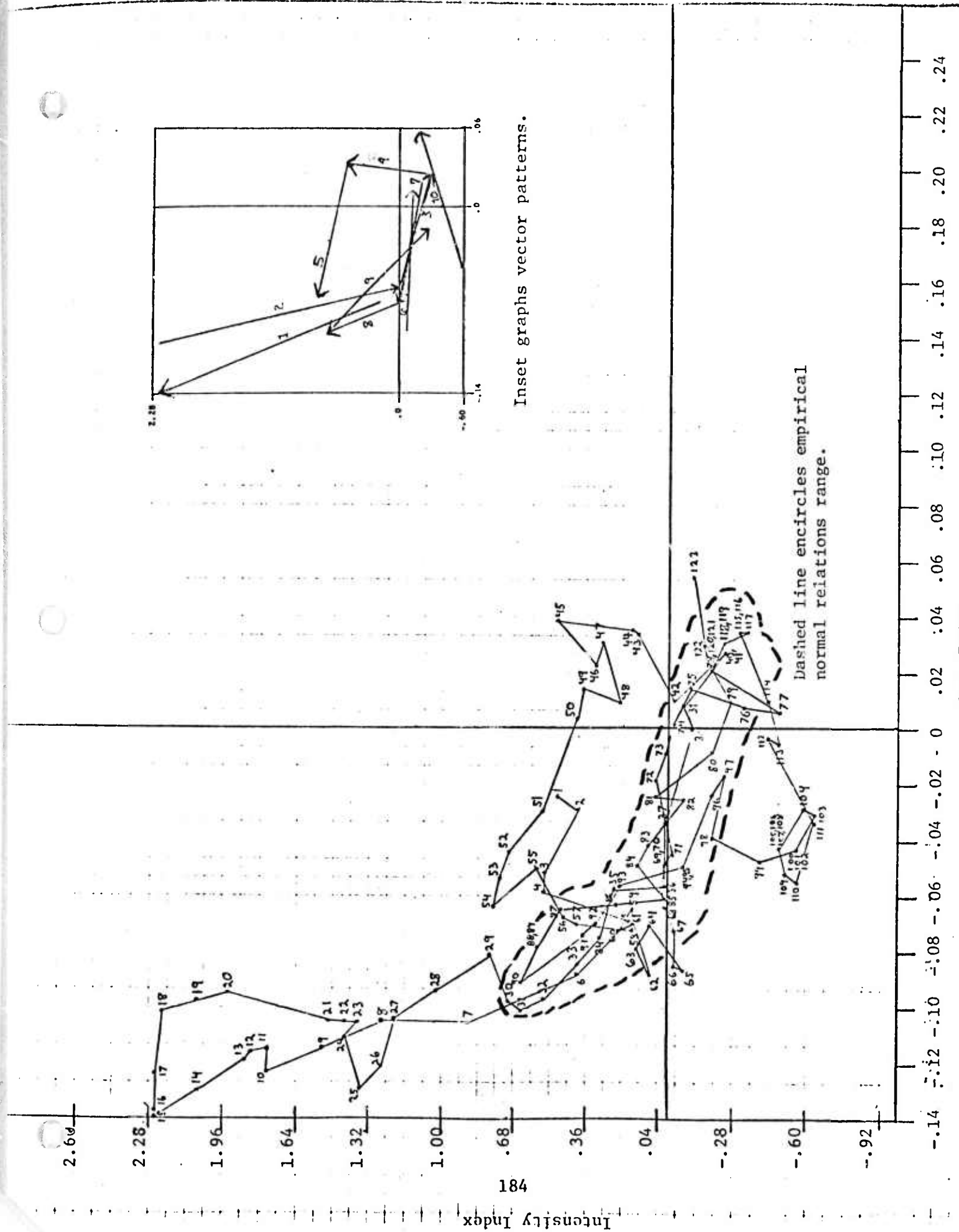
183

Inset graphs vector patterns.

Dashed line encircles empirical normal relations range.

Tone Index

184

Intensity Index

Figure 5. Event Patterning of Japan → U.S. (Political-Military Security Issue), 1972-1974
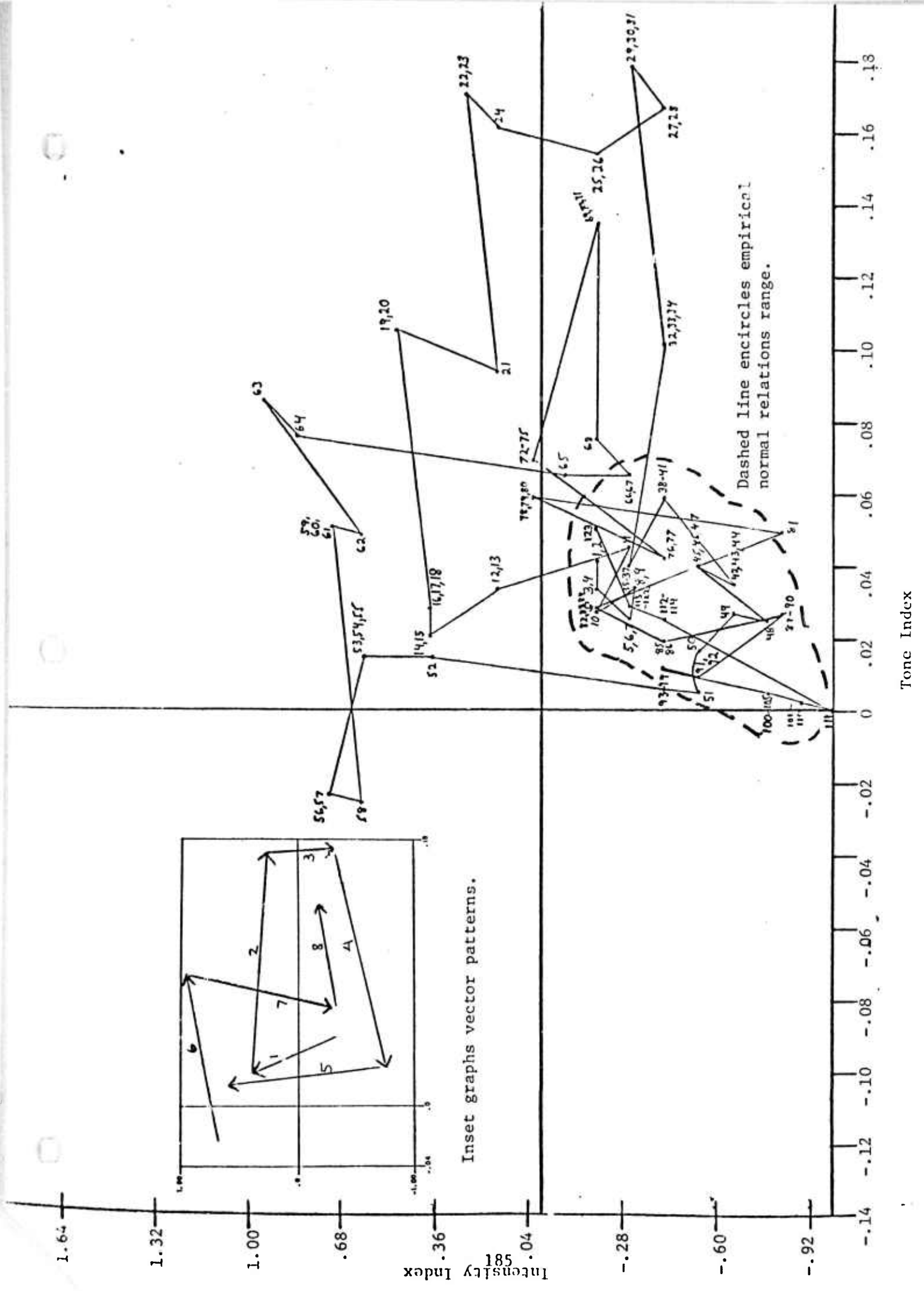
Figure 6. Event Patterning of U.S. → Japan (Political-Military Security Issue), 1972-1974

Dashed line encircles empirical normal relations range.

Inset graphs vector patterns.

Tone Index

Intensity Index

185

TABLE 11

Density of Japan → U.S. Interactions
Political-Military Security Issue

	-.14	-.12	-.09	-.06	-.03	.0	.03	.06	.09	.12	.15	.18	.21	.24
2.31	4	2												
1.98	1	4												
1.65	1	5												
1.32	1	3												
.99		2	2	2										
.66		3	9	3	3	2	1							
.33			12	8	3	2	3							
.0			3	4	5	11	6							
-.33				12	3	2	1							
-.66														
-.92														

TABLE 12

Density of U.S. → Japan Interactions
Political-Military Security Issue

	-.14	-.12	-.06	.0	.06	.12	.18	.24
1.98								
1.32								
.66			2		3	2		
			1	9	1	2		
.0				5	4	1	3	
				15	11	4	3	5
-.66				17	9	3	2	
-.92				17	4			

-.14   -.12   -.06   .0   136 .06   .12   .18   .24

contribution to the low intensity level that describes the U.S.→Japan normal interaction range.

Political-military interactions are also considerably different than overall interactions for the Japan→Soviet dyad (Figure 7). While overall Japan→Soviet behavior and particularly the Japan→Soviet normal relations cluster are quite positive relative to other dyads examined, Japan→Soviet interactions on the political-military issue are comparatively negative in tone. Few of the political-military interaction points extend into the normal relations area described for overall interactions. A comparison of Density Table 13 for the political-military issue and Table 3 for overall interactions suggests that the political-military issue has a strong impact in reducing both the level and quality of interactions between Japan and the Soviet Union.

Soviet→Japan interactions are also affected by the political-military issue. While overall interactions were all located in the positive quadrants, political-military interactions fall frequently into negative quadrants in Figure 8, and intensity is lower on the issue than on overall behavior, as can be seen in a comparison of Density Tables 4 and 14.

Table 15 compares the vector patterns for Japan→U.S. behavior on all issues with behavior on the political-military issues.[2] If fluctuations which occur within the normal relations range are discounted, the data indicate that the political-military issue is salient only during the first 55 weeks of analysis. In addition, it can be seen that the issue behavior patterns are different from overall behavior. The vectors for the issue area have more inflection points than do overall vectors, and they differ in quality of intensity and tone as measured by the angle values from overall behavior.

It is clear that the first vector pair in both analyses is almost exclusively concerned with the political-military issue area. The first vector in both

_____

[2] Tables with more detailed analysis of vector patterns for the political-military issue area are inserted at the end of the chapter.
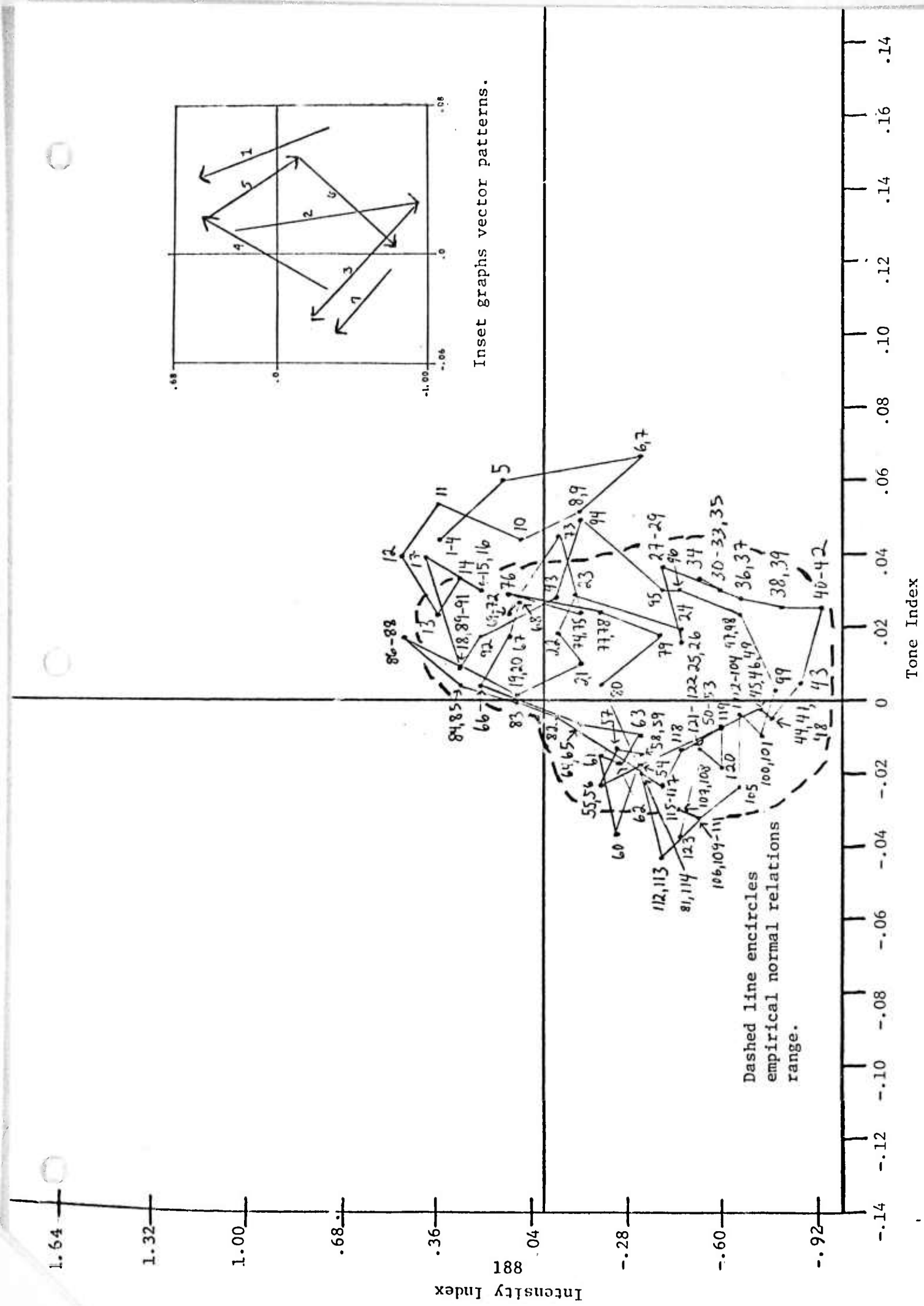
Figure 7. Event Patterning of Japan → USSR (Political-Military Security Issue), 1972-1974

Inset graphs vector patterns.

Dashed line encircles empirical normal relations range.

Tone Index

Intensity Index
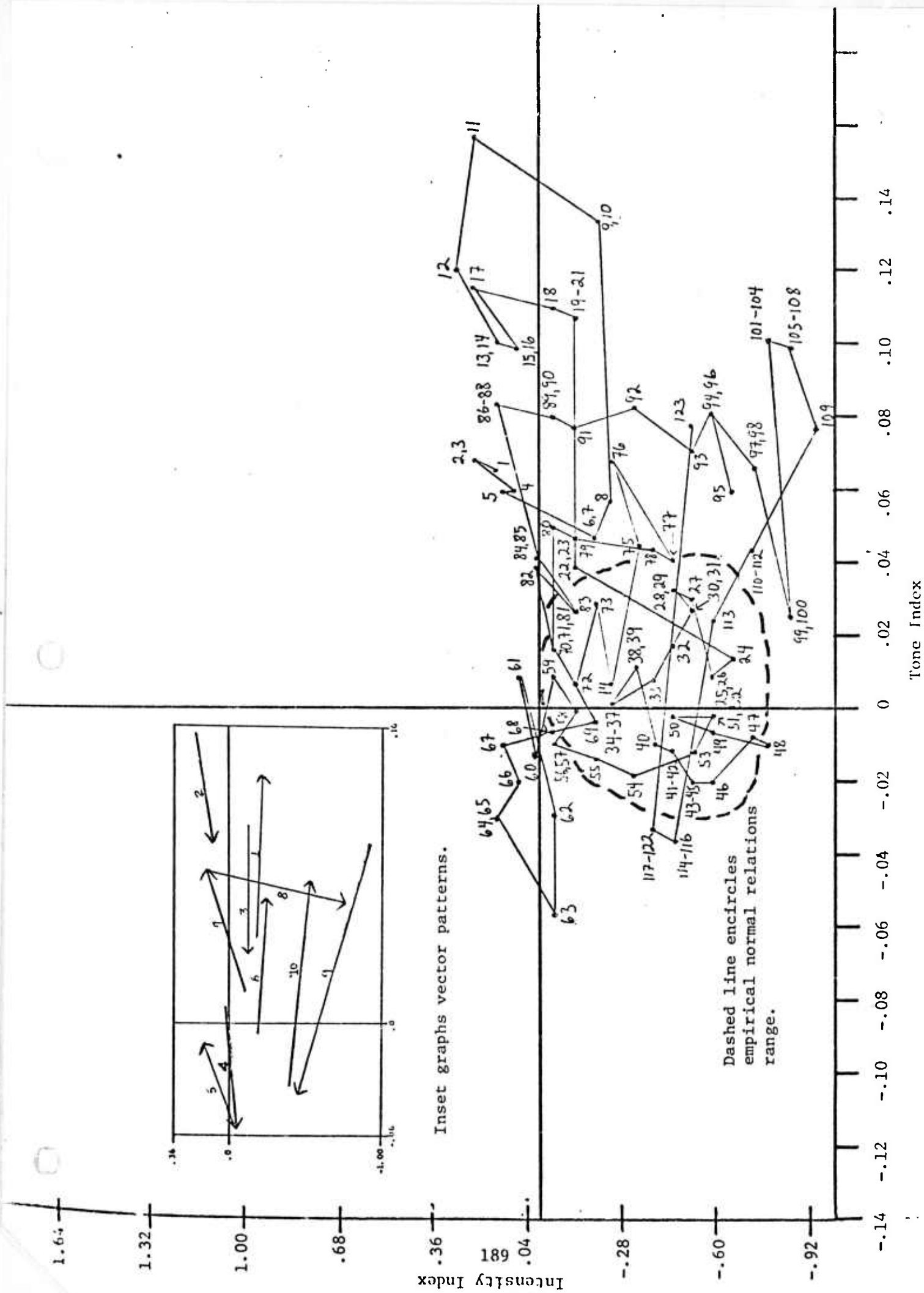
Figure 8. Event Patterning of USSR → Japan (Political-Military Security Issue), 1972-1974

TABLE 13

Density of Japan → USSR Interactions
Political-Military Security Issue

1.98													
1.32													
.66					4	7							
.0			1	17	4	1							
		1	15	9	4	2							
-.66		9	12	6	10								
-.92			12	9									

```
     -.14 -.12   -.06    .0     .06    .12    .18    .24
```

TABLE 14

Density of USSR → Japan Interactions
Political-Military Security Issue

1.98													
1.32													
.66													
.0		1	3	1	5	6	6		1				
		1	8	14	7	5	3	2					
-.66		9	12	9	6	5							
-.92			2	3	3	3	8						

```
     -.14 -.12   -.06    .0     .06    .12    .18    .24
```

190

TABLE 15

Comparison of Vector Patterns for Overall Behavior
and Political-Military Issue Behavior Within the Japan → U.S. Dyad

Japan → U.S. - All Issues			Japan → U.S. - Political-Military Issue		
Inclusive Weeks	Angle Value	Vector Direction	Inclusive Weeks	Angle Value	Vector Direction
5–15	95.0^o	NNW	5–15	91.7^o	N
15–41	93.6^o	SSE	18–36	92.7^o	S
			36–41	107.2^o	SSE
41–55	88.2^o	NNE	41–45	86.7^o	N
			45–54	102.6^o	NNW
55–66	86.6^o	SSW	---	---	---
66–77	66.8^o	NE	65–75	176.2^o	E
77–85	78.3^o	SW	78–85	102.5^o	NNW
85–90	99.5^o	NNW	85–90	93.4^o	N
90–116	116.8^o	SE	90–97	94.9^o	S
116–123	14.6^o	W	100–123	75.3^o	NNE

TABLE 16

Comparison of Vector Patterns for Overall Behavior
and Political-Military Issue Behavior Within the U.S. → Japan Dyad

U.S. → Japan - All Issues			U.S. → Japan - Political-Military Issue		
Inclusive Weeks	Angle Value	Vector Direction	Inclusive Weeks	Angle Value	Vector Direction
			11–15	92.1^o	N
---	---	---	15–23	176.6^o	E
---	---	---	23–31	100.7^o	S
---	---	---	31–48	60.1^o	SW
42–55	85.9^o	N	48–55	91.8^o	N
59–67	87.2^o	S	56–63	51.5^o	NE
			63–67	89.1^o	S
67–79	76.5^o	NNE	67–71	44.6^o	NE
79–95	68.5^o	SSW	---	---	---
95–104	130.2^o	SE	---	---	---

patterns is identical in duration and quite similar in angle value. The second political-military vector, which describes the pattern of return to normal range, however, is similar in angle value, though much shorter than the second overall vector. It can be inferred that another issue became salient during the period of disengagement of the political-military issue (weeks 18-36) and that this second issue was responsible for delaying the return to normal range in the overall pattern of vector 2. A similar overlap of issues is apparent for the second vector pair in the overall pattern. In Figure 1 the observed pattern was one of first a sharply increasing function (weeks 41-55), then a sharply decreasing one (weeks 55-66). The political-military issue analysis shows two separate patterns for the period between weeks 41-55. The first pattern, for weeks 41-45, is dominated by increasing intensity (angle value - 86.7 degrees), while the second (weeks 45-54) is somewhat more heavily influenced by negative tone changes (angle 107.6 = degrees). In the overall analysis, only the intensity changes were identified (overall angle for the total vector = 88.2 degrees). While the political-military issue continued to be a factor in Japan-U.S. interactions, after week 54 it declined in salience and remained in the normal interaction range, with less than expected frequency of mention. The salient vector pattern which emerged between weeks 66-90 and 90-116, therefore, must have involved other issues.

U.S. responsiveness to Japan's political-military issue concerns is reflected in Figure 6 and Table 16. Whereas no salient vector emerged for U.S.→Japan to match the first Japan→U.S. vector pair, when the isolated issue is examined, an interaction pattern does appear. Since overall U.S.→Japan behavior fell well within the normal range of low interaction, the fact that a salient pattern emerges for the political-military issue suggests that this issue differed considerably in both intensity and tone from interactions on other matters, and that these other interaction behaviors had a dampening effect on the overall average of interactions. It is also interesting to note that during the period of Japan-U.S. disengagement from the political-military issue (weeks 18-36), U.S.→Japan interactions were characterized primarily by change in tone (angle size for weeks 15-23 = 176.6 degrees)

192

and that, as can be seen in Figure 6, the change was largely in a positive direction as the United States apparently sought to reassure Japan of its positive intentions on an issue in which Japan→U.S. interactions had been predominantly negative.

As was noted in the discussion of Table 6, U.S. interactions with Japan tended to lag behind Japan's initiatives to the United States. The second Japan-U.S. pattern on the political-military issue begins at about week 41 with increasing intensity, and at week 45 begins to assume a more negative tone. A U.S. response does not begin until week 48. It is, however, followed by an increasing positive tone pattern. Note that the angle value of weeks 56-66 is 51.5 degrees indicating a mix of intensity and tone values. Interestingly, this increasing positive tone pattern overlaps the period of Japanese disengagement from the issue (weeks 55-65). As in the Japan→U.S. case, after the disengagement from this second political military pattern, no further salient pattern emerges for the issue, though other patterns are apparent in overall behavior.

Japan→Soviet interactions on the political-military issue assume a much less salient position than in Japan→U.S. relations. As noted in the background, the political-military questions are closely tied to economic questions in Japan-Soviet relations. Figure 7 indicated that the political-military questions are tightly concentrated in Japan→Soviet interactions. In Table 17 salient vectors emerge to parallel the patterns observed in overall interactions between weeks 68-94 and 99-123. A close comparison of the movement of data points over time within the two figures (3 and 7) indicates that the political-military issue tends to follow the general movement of overall salient patterns even though it does not become independently important. This suggests that, as in the case of Japan→U.S. behavior, they are an underlying issue in all interactions. Though the political-military data points change little in tone, they tend to increase slightly in frequency of mention during the periods which mark the saliency of other issues. Only one pattern emerges in which the political-military

193

TABLE 17

Comparison of Vector Patterns for Overall Behavior
and Political-Military Issue Behavior Within the Japan – USSR Dyad

Japan → USSR - All Issues			Japan → USSR - Political-Military Issue		
Inclusive Weeks	Angle Value	Vector Direction	Inclusive Weeks	Angle Value	Vector Direction
1-7	93.4°	S			
7-17	95.3°	N	6-12	92.3°	N
17-25	94.4°	S	18-42	104.4°	SSE
25-37	44.8°	NE			
37-41	81.8°	SSW			
41-68	85.1°	NNE	42-60	92.6°	N
68-81	70.4°	SSW	---	---	---
81-94	15.9°	E	81-88	87.4°	N
			88-94	94.7°	S
94-99	71.2°	SSW	94-99	86.3°	S
99-114	93.8°	N	100-113	97.7°	N
115-123	87.2°	S	---	---	---

TABLE 18

Comparison of Vector Patterns for Overall Behavior
and Political-Military Issue Behavior Within the USSR → Japan Dyad

USSR → Japan - All Issues			USSR → Japan - Political Military Issue		
Inclusive Weeks	Angle Value	Vector Direction	Inclusive Weeks	Angle Value	Vector Direction
6-11	6.9°	E	6-10	12.2°	E
11-32	75.3°	SSW	11-16	66.4°	SSW
			19-23	0.01°	W
32-39	80.8°	NNE	---	---	---
41-51	105.8°	SSE	---	---	---
51-61	84.4°	NNE	59-63	50.2°	SW
---	---	---	63-67	65.3°	NNE
---	---	---	69-76	114.1°	SSE
76-81	44.5°	SW	---	---	---
81-90	153.5°	ESE	81-88	74.4°	NNE
90-97	35.0°	WSW	88-98	87.7^c	S
97-99	60.3°	SSW	---	---	---
99-106	64.4°	NNE	---	---	---
106-120	$.001^\circ$	W	105-116	107.5°	NNW
			117-123	129.3°	SE

questions are dominant and that occurs in weeks 6-12. This pattern parallels the overall vector observed in weeks 7-17, and it should be noted that this same period was one of dominant political-military discourse in Japan-U.S. relations. The pattern suggest a Japanese effort to converse with both superpowers on the political-military subject.

Soviet-Japan interactions on the political-military issue generally parallel overall interactions (Table 18), though they are generally less positive and less intense. They are highly diffused and evidence wide fluctuations. The angle values indicate a greater dominance of change in tone, rather than intensity, as the driving force behind the patterns. The political-military issue appears most salient during weeks 6-10, again paralleling the Japan→ Soviet and U.S.→Japan patterns. It emerges briefly between weeks 59-63 with an increase in intensity and negative tone values. This period is not salient in the overall Soviet→Japan interaction. Again, it is suggested that the third-party interactions (U.S.→Japan) influence the emergence of political-military dialogue between the Soviet Union and Japan.

SUMMARY

The analysis indicates that Japanese behavior toward its partners tends to be quite moderate in quality of interaction. Only a few issues evoke unusual behavior from Japan. Political-military security issues involving questions of the Japan-U.S. military alliance, U.S. military bases in Japan, and U.S. and Japanese policies and roles in Asia, and economic issues involving questions of markets for and resource supplies to the Japanese economy are especially important. In these areas Japan tends to initiate dialogue with its superpower partners. The United States and the Soviet Union respond to Japan's initiatives with statements and actions which are more moderate but which, over time, generally follow the pattern set by Japan.

The range of behaviors evidenced by Japan covers only a small area of the types of behavior open to major international actors. Japan's relations with the countries and regions studied here reflect Japan's low

195

key and pragmatic approach to international relations -- the policy of "being friendly with everybody, or at least not making serious enemies anywhere" (Okita, 1974: 723). Even deviant patterns -- those that fall outside the normal range of relations -- are moderate. Japan's relations with the United States evidence a much greater amount of perturbation than Japan's relations with the Soviet Union; they are both more negative and more intense toward the United States. This is in part because the period covered is one of redefinition of the political and economic foundations of the traditional U.S.-Japanese alliance, and of positive overtures toward the Soviet Union. These overtures are stimulated by both economic needs and a desire not to antagonize the neighboring superpower as Japan moves into a more independent and active period of international policy.

Japanese relations with the United States tend to vary over time in intensity of interaction, while Japan-Soviet relations vary predominantly in tone while intensity remains approximately constant. This is both a function of opportunities for interaction and the policy content of these interactions. By virtue of longstanding military alliance and economic cooperation, Japan and the United States have more issues on which there must be dialogue than do Japan and the Soviet Union. Japan's relations with the Soviet Union are still tentative and concerned more with possibilities for future closer relations than with the present status quo.

The political-military issue proved to be the dominant topic of U.S.-Japanese relations for slightly less than half of the period studied. The quality of interactions on this issue was in large part responsible for the overall negative character of Japanese initiatives toward the United States. U.S. responses to increasing negative behavior by Japan tended to occur with some delay and to be very mild, almost indifferent. It is possible that more positive U.S. responses to Japanese concern on this issue might have improved the overall quality of relations between the two countries. This hypothesis could be tested with further development of the decision analysis component of the research effort.

196

FURTHER DEVELOPMENT

The analysis performed concentrated on the identification of salient patterns within the overall context of international interactions. Because all country dyads studied involved Japan, a simplified approach to the identification of the normal relations range was used. In more detailed analysis, the centroid of normal zone relations would be identified and standard deviation ranges about the zone would be computed. This would facilitate the characterization of areas within the event pattern quadrants, locations of salient pattern endpoints, and median points within these areas that would then permit more detailed characterization of types of issue behavior. Analysis of countries other than Japan is needed to complete the characterization of all zones of the quadrants.

Further development of salient Japanese patterns requires in-depth substantive analysis of the development of each of the issue patterns identified in the present research. The event patterning analysis can indicate the subject area of different patterns, but an analysis of the text or content of specific events contributing to the pattern is required to identify critical decision points within issue area development and disengagement processes. This would permit the integration of power impact analysis (see Chapters 4 and 7) within the different issue areas and would provide a basis for evaluating the consequences of different policy decisions.

Regression analysis of the relationships between the individual directed dyad partner patterns can be used to evaluate the impact of one actor's policy decisions on the other. Interrupted time series analyses should be useful in this evaluation. Third party influences, such as the apparent Japan-U.S. and Japan-Soviet response patterns which emerged in the analysis of the political-military issue area can also be tested and evaluated in this fashion. The development of these areas would provide a foundation for the simulated testing and evaluation of the impact of alternative policy decisions for different issues of international contention and different target countries.

TABLE 19

Japan → U.S. Vector Patterns, Political-Military Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	5-15	11	-.96	2.10	.19	91.7°	N:	II
2	18-36	19	-.64	2.22	.12	92.7°	S:	II
3	36-41	6	-.91	.03	.00	107.2°	SSE:	II→III→IV
4	41-45	5	.72	.02	.01	86.7°	N:	IV→I
5	45-54	10	-.85	.03	.00	102.6°	NNW:	I→II
6	65-75	11	-.05	.11	.01	176.2°	E:	III→II→III→IV
7	78-85	8	-.85	.00	.00	102.5°	NNW:	IV→III→II
8	85-90	6	-.85	.06	.01	93.4°	N:	II
9	90-97	8	-.96	.89	.11	94.9°	S:	II→III
10	100-123	24	.86	.08	.00	75.3°	NNE:	III→IV

TABLE 20

U.S. → Japan Vector Patterns, Political-Military Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	11–15	5	−.97	.69	.14	92.1°	N:	IV→I
2	15–23	9	−.33	.19	.02	176.6°	E:	I
3	23–31	9	−.21	.57	.06	100.7°	S:	I→II
4	31–48	18	.48	.48	.03	60.1°	SW:	I→II
5	48–55	8	−.33	1.38	.17	91.8°	N:	IV→I
6	56–63	8	.52	.25	.03	51.5°	NE:	II→I
7	63–67	5	.94	1.26	.25	89.1°	S:	I→IV
8	67–71	5	.68	1.34	.03	44.6°	NE:	IV

TABLE 21

Japan → USSR Vector Patterns, Political-Military Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	6-12	7	-.81	.82	1.17	92.3°	N:	IV→I
2	18-42	25	-.14	1.21	.05	104.4°	SSE:	I→IV
3	42-60	19	-.88	.70	.04	92.6°	N:	IV→III
4	81-88	8	.99	.81	.10	87.4°	N:	IV→I
5	88-94	7	-.80	.61	.09	94.7°	S:	I→IV
6	94-99	6	.95	.68	.11	86.3°	S:	IV
7	100-113	14	-.91	.34	.02	97.7°	N:	III

TABLE 22

USSR → Japan Vector Patterns, Political-Military Behavior

Vector Number	Inclusive Weeks	Duration	Correlation Coefficient	Vector Length	Average Rate of Change	Angle Value	Vector Direction and Location	
1	6-10	5	.33	.09	.00	12.2°	E:	IV
2	11-16	6	.67	.15	.02	66.4°	SS:	I
3	19-23	5	.66	.07	.01	0.01°	W:	IV
4	59-63	5	.55	.06	.01	50.2°	SW:	IV→II→III
5	63-67	5	.41	.08	.00	65.3°	NNE:	III→II
6	69-76	8	-.51	.09	.01	114.1°	SSE:	III→IV
7	81-88	8	.96	.21	.03	74.4°	NNE:	IV→I
8	88-98	11	.66	.88	.08	87.7°	S:	I→IV
9	105-116	12	-.97	.43	.04	107.5°	NNW:	IV→III
10	117-123	7	-1.00	.17	.02	129.3°	SE:	III→IV

CHAPTER 7

APPLICATION OF THE POWER STRATEGY IMPACT ANALYSIS

HYPOTHESES

This chapter reports the findings of an empirical analysis using the power strategy indicators (Chapter 3) and power-response structure of international interaction (Chapter 4). It is hypothesized that power strategies exercised in international dyadic interactions have observable effects on response patterns of target countries. If the probability of compliance with certain power attempts is high for particular dyads and on specific issues during the period analyzed, it may be possible to predict response potentials in reaction to similar power stimuli in the future.

It is to be expected that power strategies will be more or less effective in achieving their intended goals of modifying the target nation's behavior depending upon the dyad and issue being examined. Dyads that possess, to some degree, relational characteristics of dominance and submission should provide excellent proving grounds for studying the impact and effectiveness of power strategies. Particular dyads may exhibit dominant-submissive traits (for example, the Soviet Union and East Germany) in which the submissive nation generally complies with the dominant actor's power attempts. If both nations in a dyad are equally dominant (for example, the People's Republic of China and the Soviet Union) the interactive results may be deadlock and non-compliance rather than compliance to reciprocate power strategies (Singer, 1972).

In the present study two dyads are analyzed that are hypothesized to have dominant-submissive relationships: the United States-Japan, and Japan-Asia. Japan is subordinate to the United States in terms of its economic well-being (the United States is Japan's single largest export market) and military security against potential adversaries. Asia can be considered subordinate to Japan in terms of its dependence on processed goods

203

and technological and financial assistance. If our assumptions on domin-
ance and submission are valid, we should observe relatively high rates of
compliance by Japan and Asia to power strategies initiated by the United
States and Japan, respectively.

We would not expect all types of power strategies exercised by the
United States and Japan toward their partners to be successful all of the
time, but some to have higher degrees of effectiveness than others in
modifying certain types of behavior in the target nation. Increased pres-
sure by Japan for diplomatic and political autonomy from the leadership
of U.S. international policy may dampen their dominant-submissive relation-
ship and may impact on Japan's potential to comply with U.S. power initia-
tives. This trend may reduce Japanese compliance with and increase defiance
of U.S. power attempts.

DATA PREPARATION

Data on the nine power strategy indicators that could be explicitly opera-
tionalized in Chapter 3 were collected for the United States as initiator
toward Japan, and Japan as initiator toward Asia. These indicators, which
reflect the frequency of power strategy occurrence in overall behavior
as well as issue-specific behavior, were computed for every 28-day period.
Thus there are 33 time periods in the analysis from January 1972 to July
1974. Table 1 lists the power strategy variables employed in the analysis.

TABLE 1

Power Strategy Variables

Variables	On Dyad -- Issues
Promise	US → Japan (all issues)
Threaten	US → Japan (political-military security issue)
Positive Commitment	
Negative Commitment	US → Japan (trade issue)
Reconciliation	Japan → Asia (all issues)
Diplomatic Support	Japan → Asia (resource dependence issue)
Material Support	
Diplomatic Hostility	Japan → Asia (trade issue)
Physical Conflict	

204

To operationalize response behavior, all cooperative and conflictual events for the Japan to United States and Asia to Japan dyads were summed independently for each 28-day period yielding two frequency variables, each of positive and negative interactions. Response behavior was collected only for overall behavior in these dyads (and not on specific issues) since it was hypothesized that responsiveness to issue-specific power strategies might well be manifested in other issue domains. For instance, Soviet promises to return the northern islands (a diplomatic issue) may be favorably responded to (complied with) by Japan in agreements to cooperate with the Soviet Union to develop Siberian oil and gas fields (a resource dependence issue). Furthermore, a preliminary empirical investigation utilizing issue-specific response behaviors suggested that greater interpretability might be achieved by employing response variables that measure overall behavior. Mean frequencies, computed for the Japan to United States and Asia to Japan positive and negative response variables, were used as expected values to calculate a cumulative Poisson probabilities index of deviation from the mean.[1] Critical probability levels of .95 and .05 were chosen to denote substantial change from the mean, either substantial decreases or increases, respectively. Thus two response measures indicating significant deviation from a mean value (for cooperative and conflictual behavior) were developed for the Japan to United States and Asia to Japan directed dyads.

Treating the power strategy indicators as dummy variables (with "1" denoting occurrence and "0" denoting absence of occurrence within a time period), tables were compiled that relate the occurrence of power strategies to the response deviation measures for positive and negative behaviors on all issues and specific issue areas. In addition to forming tables that implicate simultaneous response (within the same 28-day period as the power strategy stimulus), time series tables were created that test whether responses to power strategies became more apparent with a one-month lag. Causality is inferred between power strategy usage and response behavior with or without lag.

---

[1] Poisson probability tables used were found in E.C. Molina, Poisson's Exponential Binomial Limit. Princeton, N.J.: D. Van Nostrand Co., 10th printing. No date.

Tables 2-7 present the results of the power strategy impact analysis. Four indices are presented in these tables that were discussed at greater length in Chapter 4.[2] The Power Impact Rating (PIR) appears on the first row of each cell. This rating is the product of the effectiveness and efficiency probability indices that follow. PIR varies from 0.0 to 1.0. Values of .25 and higher are considered to be significant in this analysis since they are ideally composed of ratings that indicate at least 50 percent effectiveness and efficiency. The second row in each cell is the Probabil-of Effectiveness (pEv) index. This figure provides an explanation of strategy impact. It indicates, in probabilistic terms, the degree to which certain types of response patterns are elicited by different types of power strategies. The third row in each cell represents the Efficiency Probabil-ity (pEc) index. It indicates the extent to which overall strategy distribution is spread between the various response conditions (increases, decreases or no change), and thus reflects the relative efficiency of strategy direction. A Probability of Strategy Success (pSS) index is calculated for each table to reveal the relative success of significant power impacts (as measured by PIR values) in obtaining favorable response patterns.

One further note about the tables. While the pEc index over the three response conditions sums to 1.0, the pEv index over all power strategy types sometimes adds to more than 1.0. Within each of the 33 time periods in the analysis, it was possible for more than one power strategy to occur simultaneously; for instance, both promise and threat strategies could be exercised within the same 28-day period. But in measuring the effectiveness of each power strategy in this analysis, all other simultaneous strategies were held constant, that is, they were assumed to be zero. Thus, in essence, each power strategy was observed independently of all other strategies. Since more than one strategy could occur in each period, some periods were counted multiple times, causing the addition of pEv values in any column to sum to more than 1.0.

---

[2] In Tables 3-7 only the two summary measures that are referred to in the discussion of results -- the PIR and pSS indices -- are presented for the sake of visual clarity.

206

RESULTS

U.S. Power Impacts on Japanese Behavioral Response Patterns

Tables 2-4 present the simultaneous and lagged impacts of U.S. power stra-
tegies on Japanese overall behavior. In Table 2 the occurrence of U.S.
power strategies was tapped from overall U.S. behavior; but in Tables 3
and 4, U.S. power strategies represent behavior in the international trade
issue area and political-military security issue area, respectively.

Overall U.S. Power Impacts (Table 2). Promise strategies have the highest
significant Power Impact Rating (PIR) scores resulting in simultaneous
increases of Japanese positive behavior (PIR = .303). Promises also result
in a simultaneous "no change" in Japanese cooperative behavior (PIR = .298).
These findings indicate that U.S. promises to Japan appear to be moderately
effective in maintaining or increasing the level of Japanese cooperative
response. In addition to being effective, they are also used fairly effi-
ciently by the United States; that is, promises are not made indiscriminantly
or at times when the intended cooperative responses are unlikely. Promise
strategies, however, appear to have no simultaneous or lagged effect on
changes in Japanese conflictual behavior (PIR = .280 and .280, respectively).
In other words, while promise strategies may be effective and efficient
tools for maintaining or causing increases in levels of Japanese cooperative
behavior, they have little influence in modifying conflictual response
patterns; however, they do not elicit outwardly defiant responses by Japan.
This finding may be a signal of Japanese desires for autonomy from U.S.
policy.

U.S. threats result in a lagged increase in Japanese conflictual responses
(PIR = .334), and diplomatic hostility results in a lagged decrease in coop-
erative responses (PIR = .267). While these appear to be apparent responses
of non-compliance with U.S. intentions, the fact that they become operative
one month after the U.S. power attempts may reflect moderation in the degree
of Japanese defiance. Japan's subordination to the U.S. desires is not
assured, but Japan is taking an especially cautious road in asserting indepen-
dence.

207

TABLE 2

Power Strategy Impact Analysis: The Effects of U.S. Power Strategies
In All Issue Areas on Japan's Responses to the U.S.[a]

Japan to United States (All Issues):
Simultaneous Power - Response Interaction

		Positive Responses					Negative Responses				
		Increase	Decrease	No Change	Total Frequency		Increase	Decrease	No Change	Total Frequency	
PROMISE	PIR	.103	.024	.294	17		.235	.066	.280	17	
	pEv	.857	.200	.563			1.00	.375	.476		
	pEc	.353	.118	.529			.235	.176	.588		
THREAT	PIR	.143	.100	.0	4		.0	.125	.048	4	
	pEv	.286	.200	.0			.0	.250	.095		
	pEc	.500	.500	.0			.0	.500	.500		
POS. COMMIT.	PIR	.117	.082	.142	11		.023	.102	.212	11	
	pEv	.429	.300	.313			.250	.375	.333		
	pEc	.273	.273	.455			.091	.273	.636		
NEG. COMMIT.	PIR	.029	.0	.200	5		.050	.0	.152	5	
	pEv	.143	.0	.250			.250	.0	.190		
	pEc	.200	.0	.800			.200	.0	.800		
RECONCIL.	PIR	.082	.014	.143	7		.036	.018	.170	7	
	pEv	.286	.100	.250			.250	.125	.238		
	pEc	.286	.143	.571			.143	.143	.714		
DIP. SUPPORT	PIR	.114	.020	.050	5		.0	.0	.238	5	
	pEv	.286	.100	.125			.0	.0	.238		
	pEc	.400	.200	.400			.0	.0	1.00		
MAT. SUPPORT	PIR	.117	.082	.142	11		.0	.284	.156	11	
	pEv	.429	.300	.313			.0	.625	.286		
	pEc	.273	.273	.455			.0	.455	.545		
DIP. HOSTILITY	PIR	.024	.017	.167	6		.0	.021	.198	6	
	pEv	.143	.100	.250			.0	.125	.238		
	pEc	.167	.167	.667			.0	.167	.833		
VIOLENCE	PIR	.0	.0	.063	1		.0	.0	.047	1	
	pEv	.0	.0	.063			.0	.0	.047		
	pEc	.0	.0	1.00			.0	.0	1.00		
TOTAL RESPONSE FREQUENCY		7	10	16			4	3	21		

Japan to United States (All Issues):
Lagged Power - Response Interaction (one month)

		Positive Responses					Negative Responses				
		Increase	Decrease	No Change	Total Frequency		Increase	Decrease	No Change	Total Frequency	
PROMISE	PIR	.157	.212	.180	17		.079	.184	.350	17	
	pEv	.667	.600	.438			.667	.625	.476		
	pEc	.235	.353	.412			.118	.294	.588		
THREAT	PIR	.042	.0	.141	4		.334	.0	.048	4	
	pEv	.167	.0	.188			.667	.0	.095		
	pEc	.250	.0	.750			.500	.0	.500		
POS. COMMIT.	PIR	.016	.228	.142	11		.030	.102	.212	11	
	pEv	.167	.500	.313			.333	.375	.333		
	pEc	.090	.455	.455			.090	.273	.636		
NEG. COMMIT.	PIR	.0	.080	.113	5		.0	.025	.152	5	
	pEv	.0	.200	.188			.0	.125	.190		
	pEc	.0	.400	.600			.0	.200	.800		
RECONCIL.	PIR	.095	.014	.143	7		.0	.0	.333	7	
	pEv	.333	.100	.250			.0	.0	.333		
	pEc	.286	.143	.571			.0	.0	1.00		
DIP. SUPPORT	PIR	.0	.180	.050	5		.067	.025	.086	5	
	pEv	.0	.300	.125			.333	.125	.143		
	pEc	.0	.600	.400			.200	.200	.600		
MAT. SUPPORT	PIR	.061	.146	.142	11		.0	.182	.212	11	
	pEv	.333	.400	.313			.0	.500	.333		
	pEc	.182	.364	.455			.0	.364	.636		
DIP. HOSTILITY	PIR	.0	.267	.042	6		.0	.083	.127	6	
	pEv	.0	.400	.125			.0	.250	.190		
	pEc	.0	.667	.333			.0	.333	.667		
VIOLENCE	PIR	.0	.100	.0	1		.0	.0	.048	1	
	pEv	.0	.100	.0			.0	.0	.048		
	pEc	.0	1.00	.0			.0	.0	1.00		
TOTAL RESPONSE FREQUENCY		6	10	16			3	8	21		

Overall pSS = .562

[a]Cells with significant PIR values (≥ .250) are outlined.

208

U.S. allocation of material support to Japan appears to be successful in causing simultaneous decreases in the level of Japanese conflictual actions (PIR = .284). A large degree of U.S. material support to Japan is concerned with military security. Japan's response pattern with respect to this power strategy reveals an effective and efficient method for the United States to alter Japanese hostile behavior in a continually sensitive area.

U.S. Trade-Specific Power Impacts (Table 3). Promise strategies possess a greater impact when they concern the trade issue area specifically. U.S. promises cause a simultaneous increase in levels of Japanese cooperative behavior (PIR = .286), and a lagged decrease in Japanese conflictual behavior (PIR = .250). Since the United States remains the single largest export market for Japanese goods, compliance with U.S. promise strategies emphasizes Japanese dependence in this area.

However, U.S. trade-specific threats result in a lagged increase in the level of Japanese negative behavior to the United States (PIR = .334). This defiant response pattern may indicate Japanese desires to assert its own economic power in a competitive mode with the United States.

U.S. Political-Military Security-Specific Power Impacts (Table 4). Power strategy impact analyses were also performed on political-military security issue behavior. Considering this issue area to be one in which Japan is especially subordinate to the United States, the results were extremely surprising. Promise strategies had the intended simultaneous effect of causing increases in Japanese cooperative behavior (PIR = .254), and U.S. reconciliation strategies had the indifferent impact of maintaining the average level of Japanese conflictual behavior (PIR = .286). Neither of these results suggests an apparent dominant-submissive relationship between the United States and Japan on this issue area. Yet, it must be emphasized that there is no defiance of U.S. desires on this issue. Perhaps the lack of apparent impact of U.S. power strategies on political-military security issues is a result of dwindling credibility of the U.S. commitment to Japanese security (Scalapino, 1972: 101). Another plausible reason might be that in the midst of Japan's

209

TABLE 3

Power Strategy Impact Analysis: The Effects of U.S. Power Strategies
in the Trade Issue Area on Japan's Responses to the U.S.[b,c]

Japan to United States (All Issues): Simultaneous Power – Response Interaction

United States to Japan (Trade Issues): Power Strategy Types[a]	Positive Responses				Negative Responses			
	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.286	.050	.031	8	.125	.016	.149	8
THREAT PIR	.143	.100	.0	4	.0	.125	.048	4
POS. COMMIT PIR	.036	.0	.141	4	.063	.0	.107	4
NEG. COMMIT PIR	.0	.0	.125	2	.0	.0	.095	2
MAT. SUPPORT PIR	.191	.0	.021	3	.0	.042	.063	3
DIP. HOSTILITY PIR	.0	.033	.083	3	.0	.042	.063	3
TOTAL RESPONSE FREQUENCY	7	10	16		4	8	21	

Japan to United States (All Issues): Lagged Power – Response Interaction (one month)

United States to Japan (Trade Issues): Power Strategy Types[a]	Positive Responses				Negative Responses			
	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.0	.113	.196	8	.042	.250	.054	8
THREAT PIR	.042	.0	.141	4	.334	.0	.048	4
POS. COMMIT PIR	.042	.025	.063	4	.0	.125	.048	4
NEG. COMMIT PIR	.0	.050	.032	2	.0	.063	.024	2
MAT. SUPPORT PIR	.056	.033	.021	3	.0	.042	.063	3
DIP. HOSTILITY PIR	.0	.033	.083	3	.0	.042	.063	3
TOTAL RESPONSE FREQUENCY	6	10	16		3	8	21	

Overall pSS = .667

[a] Only power strategy types that were exercised are listed.

[b] Significant PIR values ($\geq$ .250) are underlined.

[c] pEv and pEc indices are not presented in this table for the sake of visual clarity. PIR values are the product of pEv and pEc.

TABLE 4

Power Strategy Impact Analysis: The Effects of U.S. Power Strategies in the Political-Military Security Issue Area on Japan's Responses to the U.S. [b][c]

United States to Japan (Political-Military Issues): Power Strategy Types [a]

Japan to United States (All Issues): Simultaneous Power – Response Interaction

	Positive Responses				Negative Responses			
	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.254	.0	.174	9	.111	.056	.132	9
POS. COMMIT. PIR	.029	.180	.013	5	.0	.100	.086	5
NEG. COMMIT. PIR	.0	.0	.125	2	.0	.0	.095	2
RECONCIL. PIR	.024	.017	.167	6	.042	.021	.127	6
DIP. SUPPORT PIR	.0	.0	.063	1	.0	.0	.048	1
MAT. SUPPORT PIR	.029	.080	.032	5	.0	.100	.086	5
DIP. HOSTILITY PIR	.072	.0	.032	2	.0	.0	.095	2
VIOLENCE PIR	.0	.0	.063	1	.0	.0	.048	1
TOTAL RESPONSE FREQUENCY	7	10	16		4	8	21	

Japan to United States (All Issues): Lagged Power – Response Interaction (one month)

	Positive Responses				Negative Responses			
	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.074	.178	.063	9	.0	.125	.191	9
POS. COMMIT. PIR	.0	.080	.113	5	.067	.0	.152	5
NEG. COMMIT. PIR	.0	.050	.032	2	.0	.0	.095	2
RECONCIL. PIR	.111	.017	.094	6	.0	.0	.286	6
DIP. SUPPORT PIR	.0	.100	.0	1	.0	.0	.048	1
MAT. SUPPORT PIR	.033	.020	.113	5	.0	.100	.086	5
DIP. HOSTILITY PIR	.0	.200	.0	2	.0	.063	.024	2
VIOLENCE PIR	.0	.100	.0	1	.0	.0	.048	1
TOTAL RESPONSE FREQUENCY	6	10	16		3	8	21	

Overall pSS = .75

[a] Only power strategy types that were exercised are listed.

[b] Significant PIR values (≥ .250) are underlined.

[c] pEv and pEc indices are not presented in this table for the sake of visual clarity. PIR values are the product of pEv and pEc.

211

cautious attempts to normalize relations with its two potential adversaries, the Soviet Union and China, it had to effectively ignore U.S. attempts to influence its behavior on security matters.

Summary. As witnessed by the tables, most U.S. power strategies targeted at Japan, regardless of time lag or issue focus, have little impact on Japanese response patterns. However, some U.S. strategies, notably promise and material support strategies, have a significant impact as reflected in the Power Impact Rating score in a direction favorable to U.S. interests. Threat, diplomatic hostility, and reconciliation strategies have a significant impact on Japanese responses but in directions that are somewhat detrimental to U.S. concerns.

A summary index that reflects the relative success of power impacts on obtaining favorable response patterns, the Probability of Strategy Success (pSS), can be calculated by using the following formula:

$$pSS = \frac{\text{Number of significant power impacts considered to have favorable responses to the initiator nation}[3]}{\text{Total number of significant power impacts}}$$

This formula is applied to the U.S. - Japanese dyad:

$$pSS \text{ overall behavior} = \frac{4.5}{8} = .562$$

$$pSS \text{ trade issue} = \frac{2}{3} = .667$$

$$pSS \text{ political-military} = \frac{1.5}{2} = .75$$

This index confirms the existence of a dominant-submissive relationship between the United States and Japan. Of the times the United States had significant power impacts on Japanese actions between 1972 and 1974, Japan's behavioral response patterns were successfully influenced by U.S. power strategies in a direction favorable to U.S. interests between 56 percent and 75 percent of the time, depending on the issue focus. This means that

---

[3] Indifferent response patterns are counted as being ½ favorable.

between 44 percent and 25 percent of the time, U.S. power impacts had
unintended, detrimental effects. While it appears that U.S. success is
greatest (U.S. dominance is highest) on political-military security issues,
this result is largely a function of small sample size. But the overall
pSS index on all issues suggests that compliance with U.S. desires is far
from perfect; the degree of noncompliance observed may indicate that the
dominant-submissive relationship within this dyad is gradually disappearing.

The power strategy impact analysis of U.S.-Japanese relations suggests that
overall, increased Japanese efforts have been taking shape to move out
from under the shadow of U.S. policy leadership over the past two and a half
years. We have observed a shift in the nature of American-Japanese rela-
tions that probably would not have been manifested to this degree during
the 1960's or before (Scalapino, 1972). U.S. attempts to modify Japanese
behavior in a manner favorable to U.S. interests are successful only about
half the time. Rather than always bowing to the desires of U.S. policy,
Japan's policy-makers have developed an increasingly independent stance.
But while Japan appears to be no longer subservient to U.S. policy, it is
not openly defiant of U.S. interests.

If this dual-headed trend of increasing Japanese autonomy and loosening
U.S. ability to persuade and influence Japanese international policy
continues, U.S. policy-makers would be wise to rethink the utility of
power strategies that have proven to have low probabilities of success,
effectiveness, and efficiency in causing Japan to change its position and
behavior. The strategies that have been identified in this category are
basically those that impose negative sanctions on Japan -- threat and
diplomatic hostility strategies. Japan appears to react unfavorably to
U.S. exercise of these punishing strategies. U.S. policy reassessment can
take several directions, given the ultimate objective to maximize U.S.
influence over Japanese policy-making:

　　　1. Increasing the stated level of negative sanctions that will be
incurred by Japan if it does not comply with U.S. desires -- raising the
ante for Japan's policy-makers -- may well heighten the credibility of U.S.
power capabilities and cause a favorable change in Japan's position and

behavior toward the United States. However, this path maximizes the risk that strategies that already possess low probabilities of success will remain unsuccessful despite changes in their negative implications for Japan. In fact, it is conceivable that such a path taken by the United States might strain Japanese-U.S. relations to the point of causing a negative backlash and pressuring Japan to quicken its pace of normalizing relations with the Soviet Union and China.

2. A more cooperative path to maximizing U.S. influence on Japanese policy-making would be to increase the use of positive power strategies that have proven successful, such as promise and material support actions. This is the low-risk course that is likely to result in high probabilities of U.S. access and effective influence, or at least the maintenance of present influence, over future Japanese behavior.

Japanese Power Impacts on Asian Behavioral Response Patterns

Tables 5-7 provide the results of the power impact analyses for the Japanese-Asian dyad. It is hypothesized that Asia is in a subordinate role vis-a-vis Japan, and will respond favorably, for the most part, to Japan's use of power strategies.

Japan's Overall Power Impacts (Table 5). All Japanese power strategies, except threat, reconciliation, diplomatic hostility, and violence strategies, result in a simultaneous maintenance of Asian cooperative response patterns about the mean frequency. Although increases in the level of Asian cooperation would have signalled a more concrete impact, maintenance of positive behavior can generally be interpreted as compliance with power attempts. With a one-month lag in Asian responses, two hostile power attempts, negative commitments and diplomatic hostility, cause increases in Asian cooperation toward Japan (PIR = 2.61 and .347, respectively). Thus, forecasting and actually implementing negative sanctions against Asia to make its behavior more favorable appear to achieve the intended effects. Peculiarly, Japanese reconciliation strategies that allocate positive rewards to Asia have the opposite effect; they cause a decrease in the level of positive behavior with a lag of one month (PIR = .250).

TABLE 5

Power Strategy Impact Analysis: The Effects of Japanese
Power Strategies in All Issue Areas on Asia's Responses to Japan[a,b]

	Asia to Japan (All Issues): Simultaneous Power – Response Interaction								Asia to Japan (All Issues): Lagged Power – Response Interaction (one month)							
	Positive Responses				Negative Responses				Positive Responses				Negative Responses			
Power Strategy Types	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.143	.107	.655	29	.077	.345	.456	29	.214	.161	.481	28	.143	.175	.543	28
THREAT PIR	.137	.011	.234	11	.091	.082	.172	11	.150	.200	.047	10	.025	.040	.258	10
POS. COMMIT. PIR	.133	.100	.379	20	.113	.180	.318	20	.219	.059	.335	19	.211	.084	.335	19
NEG. COMMIT. PIR	.157	.066	.309	17	.059	.147	.309	17	.261	.071	.211	16	.063	.056	.398	16
RECONCIL. PIR	.084	.0	.027	2	.125	.0	.027	2	.0	.250	.0	2	.0	.050	.027	2
DIP. SUPPORT PIR	.017	.008	.556	16	.141	.157	.211	16	.094	.196	.211	16	.063	.225	.211	16
MAT. SUPPORT PIR	.143	.211	.524	29	.077	.279	.524	29	.149	.219	.481	28	.143	.175	.543	28
DIP. HOSTILITY PIR	.220	.165	.070	12	.084	.132	.158	12	.347	.042	.110	12	.0	.133	.281	12
VIOLENCE PIR	.033	.0	.169	5	.0	.180	.042	5	.033	.025	.095	5	.0	.020	.169	5
TOTAL RESPONSE FREQUENCY	6	8	19		4	10	19		6	8	19		4	10	19	

Overall pSS = .739

[a] Significant PIR values ($\geq$ .250) are underlined.

[b] pEv and pEc indices are not presented in this table for the sake of visual clarity. PIR values are the product of pEv and pEc.

Japan to Asia (All Issues): Power Strategy Types

While strategies with negative sanctions appear to cause increases in Asian cooperative response patterns with a one month lag, two other strategies that forecast and actually implement positive rewards seem to cause decreases in the level of Asian conflictual behavior toward Japan. Promise and material support strategies significantly shift Asian response patterns toward a less negative mode (PIR = .345 and .279, respectively). It is interesting to note the almost mirror-image impacts of Japan's use of the carrot and the stick toward Asia. The carrot is an effective and efficient way for Japan to minimize the negative in Asia's behavior, and the stick is equally successful in maximizing the positive in Asia's actions. A bit of ambiguity is introduced into these findings, however, by the large number of significant PIRs which indicate that Japanese power strategies cause no change in Asia's conflictual behavior.

Japan's Resource Dependence-Specific Power Impacts (Table 6). The resource issue is one in which Japan's dominance over Asia is partially negated by its dependence for raw materials. Potentially, this is an area in which Asia can assert bargaining leverage over Japan. However, this does not appear to be the mode of Asian behavior. Japanese positive commitment strategies impact significantly on simultaneous increases in Asian cooperative responses (PIR = .250). Promise strategies serve to maintain and increase Asian positive behavior simultaneously and with a lag (PIR = .539, .250, and .334, respectively). Finally material support strategies exercised by Japan result in a maintenance in the level of Asian cooperative responses with a one-month lag (PIR = .292). Japan's high level of dependence on Asia for raw materials and resources is reflected in its effective use of "carrot" strategies. Promise and material support strategies have only indifferent results on altering levels of Asian conflictual behavior targeted at Japan.

Japan's Trade-Specific Power Impacts (Table 7). Several Japanese strategies have favorable and cooperative impacts. Japanese promise and material support (with a lag) strategies maintain Asian cooperative behavior patterns (PIR - .399 and .347, respectively). Positive commitments result in an increase in positive responses (PIR = .381). But in response to

216

TABLE 6

Power Strategy Impact Analysis: The Effects of Japanese Power Strategies
in the Resource Dependence Issue Area on Asia's Responses to Japan[b]

Japan to Asia (Resource Dependence): Power Strategy Type[a]

	Asia to Japan (All Issues): Simultaneous Power – Response Interaction								Asia to Japan (All Issues): Lagged Power – Response Interaction (one month)							
	Positive Responses				Negative Responses				Positive Responses				Negative Responses			
	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.167	.080	.539	25	.090	.196	.473	25	.250	.188	.334	24	.167	.116	.493	24
THREAT PIR	.0	.0	.105	2	.0	.050	.027	2	.0	.063	.028	2	.125	.0	.027	2
POS. COMMIT. PIR	.250	.021	.035	6	.042	.0	.219	6	.111	.083	.037	6	.167	.0	.141	6
NEG. COMMIT. PIR	.0	.063	.027	2	.125	.0	.027	2	.167	.0	.0	1	.0	.0	.053	1
DIP. SUPPORT PIR	.0	.0	.053	1	.0	.0	.053	1	.0	.0	.056	1	.0	.0	.053	1
MAT. SUPPORT PIR	.173	.225	.213	20	.050	.125	.445	20	.141	.164	.292	19	.053	.211	.335	19
DIP. HOSTI-LITY PIR	.0	.0	.105	2	.0	.050	.027	2	.0	.063	.028	2	.0	.056	.027	2
TOTAL RESPONSE FREQUENCY	6	8	19		4	10	19		6	8	18		4	9	19	

Overall pSS = .778

[a] Only power strategy types that were exercised are listed.

[b] Significant PIR values ($\geq$.250) are underlined.

[c] pEv and pEe indices are not presented in this table for the sake of visual clarity. PIR values are the product of pEv and pEe.

TABLE 7

Power Strategy Impact Analysis: The Effects of Japanese Power Strategies
In the Trade Issue Area on Asia's Responses to Japan[b][c]

Japan to Asia (Trade Issues): Power Strategy Types[a]

Power Strategy Type	Asia to Japan (All Issues): Simultaneous Power – Response Interaction								Asia to Japan (All Issues): Lagged Power – Response Interaction (one month)							
	Positive Responses				Negative Responses				Positive Responses				Negative Responses			
	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency	Increase	Decrease	No Change	Total Frequency
PROMISE PIR	.219	.026	.399	19	.119	.190	.277	19	.219	.164	.237	19	.117	.211	.277	19
THREAT PIR	.167	.0	.0	1	.0	.0	.053	1	.167	.0	.0	1	.0	.0	.053	1
POS. COMMIT. PIR	.095	.018	.120	7	.036	.057	.120	7	.381	.018	.032	7	.322	.0	.120	7
NEG. COMMIT. PIR	.042	.125	.013	4	.250	.025	.013	4	.042	.031	.056	4	.063	.028	.053	4
DIP. SUPPORT PIR	.0	.063	.027	2	.125	.050	.0	2	.0	.063	.028	2	.0	.0	.105	2
MAT. SUPPORT PIR	.116	.087	.198	13	.0	.193	.259	13	.013	.087	.347	13	.077	.077	.259	13
DIP. HOSTI-LITY PIR	.0	.125	.0	1	.0	.0	.053	1	.0	.0	.056	1	.0	.111	.0	1
TOTAL RESPONSE FREQUENCY	6	8	19		4	10	19		6	8	18		4	9	19	

Overall pSS = .555

[a] Only power strategy types that were exercised are listed.

[b] Significant PIR values ($\geq$.250) are underlined.

[c] pEv and pEc indices are not presented in this table for the sake of visual clarity. PIR values are the product of pEv and pEc.

218

Japanse _negative_ and _positive commitments_ (with a lag), Asian nations tend
to increase their conflictual relations (PIR = .250 and .322, respectively).
The Asian nations seem to have balked at attempts by Japan to assert its
economic power on the continent. Some of these nations fear the reappear-
ance of Japanese political and military hegemony over Asia as a result of
its economic dominance, and therefore respond with defiance to Japanese
power attempts in the economic sphere.

Summary. All but two power strategies exercised by Japan--_negative_ and
postive commitments on the trade issue--that have a significant impact on
Asian behavior yield favorable response patterns. Thus we would expect
the Probability of Strategy Success (pSS) index to be somewhat higher for
the Japanese-Asian dyad than for the U.S.-Japanese dyad. The pSS results
are listed below:

$$pSS \text{ overall behavior} = \frac{17}{23} = .739$$

$$pSS \text{ resource dependence issue} = \frac{7}{9} = .778$$

$$pSS \text{ trade issue} = \frac{5}{9} = .555$$

These values confirm a dominant-submissive relationship between Japan
and Asia that is slightly stronger than the relationship between the
United States and Japan. However, the Asian nations appear to reveal
a certain amount of independence from Japan on the trade issue.

The results of the power strategy impact analysis of Japanese-Asian rela-
tions indicate an overall high level of power and influence exercised
by Japan over its Asian neighbors. Japanese desires to modify Asian
behavior in an increasingly friendly vein have been largely successful
(except concerning matters of international trade). Unlike the U.S.-
Japanese dyad, the Asian nations respond favorably to Japan's use of
negative, punishing strategies. In itself, this bowing to the threat of
punitive action signals Asia's heightened submissive relationship in
light of Japanese interests.

219

In general, this analysis of the impact of power strategies has confirmed the hypotheses presented earlier concerning dominant-submissive relationships between nations. It has also shown that the success, effectiveness, and efficiency of different types of power strategies are largely dependent on the actor, target, and issue focus of the strategies. Most importantly, this test has demonstrated that these vital attributes of power strategies can be quantified and monitored successfully through event-based indicators to predict the probability of certain types of response behavior from target nations.

CHAPTER 8

INTERNAL PREDICTION MODELS OF JAPANESE INTERNATIONAL BEHAVIOR

221

In this chapter, the influence of domestic environmental factors and forces on Japanese international behavior is examined. International behavior is operationalized as the tone of overall Japanese interactions with the United States, the Soviet Union, the People's Republic of China, Asia (excluding the PRC), and the world as a whole. In addition, international behavioral tone in several issue areas is studied. Two types of domestic indicators are used: opinion indicators reflecting the influence of perceptions within the population on international behavior, and event-based indicators of domestic dyadic interactions reflecting the influence of political and economic elites on international behavior. (See Chapter 3 for a discussion of these indicators.) The time frame of the analysis is January 1972 to July 1974. Weekly time units were employed in the part of the analysis dealing with internal and external event indicators; monthly aggregations were used to study the effects of public opinion on international behavior.

Correlation and regression techniques are employed to determine the degree to which domestic environmental indicators can attempt to predict international behavior. Event-based indicators of domestic dyadic interactions appear to be the best predictors of international behavioral tone. Different mixes of these internal indicators predict behavior toward different international targets, though specific indicators of domestic indicators of domestic interaction on economic issues are consistently the most potent predictors. The analysis demonstrates that public opinion has little power in predicting international behavior. Domestic dyadic interaction tone on particular issue areas also fails to predict international behavior on the same issue. When domestic dyadic interaction tone variables representing a variety of issues are used to predict international behavior, however, predictive power is much improved. More specifically, variables representing different subnational actor positions on economic

222

issues, particularly domestic economic conditions and resource dependency, appear to have an important impact on international tone toward different countries and on different issues.

THE IMPACT OF PUBLIC OPINION ON INTERNATIONAL BEHAVIOR

Six measures of public opinion from the JIJI Press monthly polls were used in the analysis (see Chapter 3 for a more complete description of these measures). They represent the percentage of responses of a stratified random sample of the Japanese population to a survey of the following questions:

(1) Which political party do you support?

(2) Do you support the (incumbent Prime Minister's) cabinet?

(3) Do you think the price of commodities is leveling off?
Do you think the cost of living will still go up? Or
do you think it will come down?

(4) How do you view the prosperity of the people in general?
Do you think it is about the same as last month? Do you
think it is has become worse? Or do you think it has
improved?

(5) How difficult is your life compared with this time last year?
Has it become easier? Or has it become more difficult?

(6) What countries do you like/admire most?

Data on these items were available on a monthly basis. To statistically relate these opinion data with international behavior, the international tone index was computed and averaged for each calendar month, yielding 31 monthly observations. Table 1 presents the Pearson product-moment correlation coefficient (r) for the percentage of responses to these questions with the international tone indicators for Japanese overall behavior toward each of five directed dyads. The coefficients of determination (r^2), which represent the amount of variance in international tone that is explained by the opinion indicators, or the degree to which the latter predict the former, are presented in parentheses.

223

TABLE 1

The Impact of Domestic Public Opinion on International Tone Behavior

Pearson Product Moment Correlation Coefficients (r)
and Coefficients of Determination (r^2)--(in parentheses)

	Japan → US	Japan → USSR	Japan → PRC	Japan → Asia	Japan → World
(1) Support for Government Party	-.14 (.02)	.08 (.01)	-.13 (.02)	-.003 (.00)	-.19 (.04)
(2) Support for Incumbent Cabinet	.08 (.01)	-.11 (.01)	-.23 (.05)	-.11 (.01)	.26 (.07)
(3) Cost of Living Is Increasing	-.04 (.00)	-.45 (.20)**	-.13 (.02)	.05 (.00)	-.12 (.01)
(4) Prosperity Has Worsened	.14 (.02)	-.31 (.10)*	-.11 (.01)	.06 (.00)	.33 (.11)*
(5) Life Is Becoming More Difficult	.26 (.07)	-.45 (.20)**	.10 (.01)	-.08 (.01)	.29 (.08)*
(6) Percent Admiring Target Country	-.21 (.04)	.44 (.20)**	.27 (.07)	--	--

* Significant ≤ .05

** Significant ≤ .01

224

The results of the analyses are straightforward. The coefficients indicate that public opinion has very little impact on Japanese international behavior. It is interesting that the only statistically significant relationships to emerge are those relating attitudes on economic conditions to international behavior toward the Soviet Union. When economic conditions are perceived to worsen, behavior targeted at the Soviet Union becomes more conflictual; as conditions become more favorable, international interaction becomes cooperative. The interpretation of these results is difficult in light of Japanese desires to tap Soviet energy resources to supplement supplies from other countries. This long-range policy would be expected to result in a more friendly posture toward the Soviet Union in times of economic adversity.

Scatterplots of the opinion variables indicate that after the third quarter of 1972, negative attitudes toward the state of the domestic economy evidenced a sharp linear increase. This break in the pattern of economic attitudes, and the fact that the political support variables fluctuate considerably over time may be responsible for the low predictive power of the set of opinion indicators. In addition, the opinion indicators represent a potential influence that is considerably removed from the decision-making process which ultimately is responsible for international statements and actions. As was suggested in Chapter 2, international policy-making is largely a bureaucratic function; party dialogue and public opinion, although they exist, are not likely to have a major impact on the status quo. A high correlation between popular attitudes and international posture, therefore, should not be expected. The analysis confirms this hypothesis, and indicates that, for the period under examination, opinion indicators did not serve as useful predictive monitors of international behavior.

THE IMPACT OF DOMESTIC DYADIC INTERACTIONS ON INTERNATIONAL BEHAVIOR

Eighteen different domestic dyads (see Chapter 3) were used to test the impact of salient concerns among domestic political and economic elites on international behavioral tone. These 18 dyads may be grouped by

actor-target and by issue area. To simplify presentation, the following
notations are used:

GNA   – Government actor to non-government target on
           all issues

GNP   – Government actor to non-government target on
           political-military security issues

GNDI   – Government actor to non-government target on
           diplomatic relations issues

GNR   – Government actor to non-government target on
           resource dependency issues

GNDOMEC – Government actor to non-government target on
           domestic economic issues

GNT   – Government actor to non-government target on
           international trade issues

NGA   – Non-government actor to government target on
           all issues

NGP   – Non-government actor to government target on
           political-military security issues

NGDI   – Non-government actor to government target on
           diplomatic relations issues

NGR   – Non-government actor to government target on
           resource dependency issues

NGDOMEC – Non-government actor to government target on
           domestic economic issues

NGT   – Non-government actor to government target on
           international trade issues

GGA   – Government actor to government target on all issues

GGP   – Government actor to government target on political-
           military security issues

GGDI   – Government actor to government target on diplomatic
           relations issues

GGR   – Government actor to government target on resource
           dependency issues

226

GGDOMEC – Government actor to government target on domestic
economic issues

GGT   – Government actor to government target on international
trade issues

For each of these dyads a behavioral tone index was computed to measure
the average mix of cooperation and conflict between the actor and the
target on a particular issue area (see Chapter 3).   Table 2 presents the
inter-correlation matrix for these variables.   The table reveals several
useful pieces of information about the subject areas of domestic political
discourse.   High correlation coefficients suggest areas where behavioral
tone is highly interrelated over time.   Overall, some of the strongest
correlations within each dyad group involve overall behavior variables
("A" issues areas) and diplomatic relations variables ("DI" issues areas).
This occurs in part because the diplomatic issues form a substantial per-
centage of total interactions (See Table 13, Chapter 3).   Diplomatic issue
behavior is also likely to reflect a variety of concerns, with mixtures
of both positive and negative behavior, as does the overall category
behavior.   Within the government to non-government dyads, tone on political-
military security issues and diplomatic relations issues is also strongly
associated (r=.71), indicating that national security is an important
component of the dialogue between government and opposition as the former
defends its diplomatic activities.

A comparison of the correlations for behavioral tone between government
to non-government and non-government to government dyads indicates rela-
tively weak and frequently negative associations.   This suggests that
the dyad aggregates are indeed reflecting the different positions which
government and oppositions are expected to assume on the different issues.
Note particularly that the domestic economy and resource dependency issue
areas have a moderately strong correlation across the dyads (r=-.52) but
the negative coefficient sign indicates that the positions assumed by the
actors often contradict each other.

227

TABLE 2

Correlations Between Domestic Dyadic Actor Interaction
Indicators for Aggregate and Issue Area Tone
(Coefficients >.50 Are Underlined)

	GNA	GNP	GNDI	GNR	GNDOMEC	GNT	NGA	NGP	NGDI	NGR	NGDOMEC	NGT	GGA	GGP	GGDI	GGR	GGDOMEC
GNP	.68																
GNDI	.81	.71															
GNR	.45	.36	.34														
GNDOMEC	.29	-.00	-.15	.19													
GNT	.53	.32	.41	.69	.48												
NGA	.05	-.08	.07	-.53	-.05	-.26											
NGP	.07	-.03	-.02	-.33	.19	-.31	.21										
NGDI	.44	.13	.48	-.21	.03	.19	.64	.07									
NGR	.13	-.04	.11	.48	.20	.43	.10	-.31	.15								
NGDOMEC	-.24	.05	-.14	-.52	-.09	-.28	.65	.23	.20	-.15							
NGT	.36	.23	.23	.13	.09	.41	.28	-.13	.48	-.06	.25						
GGA	.80	.56	.81	.54	.14	.60	.03	.01	.44	.35	-.11	.32					
GGP	.30	.23	.38	-.01	-.08	.06	.32	.39	.25	.01	.42	.17	.51				
GGDI	.60	.35	.68	.40	.02	.52	.07	-.03	.48	.14	-.01	.45	.86	.49			
GGR	.21	.12	.26	.72	.10	.68	-.24	-.46	.02	.73	-.25	.11	.52	.05	.51		
GGDOMEC	.44	.30	.36	.82	.23	.69	-.26	-.28	.00	.77	-.31	.12	.64	.10	.46	.87	
GGT	.73	.73	.65	.33	.21	.42	.09	.27	.23	.10	.16	.27	.72	.58	.50	.15	.44

228

As would be expected, there are relatively strong associations between government to non-government and government to government tone, since the actors are the same in these dyads. Differences across the dyads may be attributed to the fact that intra-governmental dialogue is likely to be more positive and supportive of ongoing government activities, while government to non-government dialogue reflects efforts to defend government activities against the criticism of opposition groups. Overall, the different actor positions appear most divergent on political-military security issues, and most similar on economic issues -- especially domestic economy and resource dependency. Though tone for diplomatic relations issues is strongly associated with overall tone within each dyad, it is not closely associated across dyads, or with other, more specific issue areas. Again, this reflects the aggregate nature of diplomatic relations which must be tempered to reflect the mix of a variety of concerns.

Table 3 presents the correlations of domestic dyadic tone with overall Japanese international tone toward the United States (JUSA), the Soviet Union (JUSRA), the People's Republic of China (JPRCA), and Asia (JASA), and with tone in the Japan to U.S. political-military (JUSP), diplomatic relations (JUSDI), and international trade (JUST) issue areas and Japan to USSR political-military (JUSRP) issue area. High coefficients indicate strong domestic prediction of international tone to the different target countries (the actual predictive power of each variable is equal to the squared value of the coefficients presented). The general pattern to be inferred from the table is that domestic concern over resource dependency and domestic economic conditions has the most important influence on the quality of relations between Japan and other countries. The all issues category of domestic interactions tends to have low levels of association (and therefore low predictive power) with international tone behavior. This indicates that international tone is a result, not of generalized domestic concerns but rather of specific, time-bound salient issues.[1]

---

[1] This interpretation is further supported by the overall low correlations between the composite domestic indicator on all issues (all domestic actors→ all domestic targets) with international tone. However, the composite domestic indicator on resource and domestic economic issues, again, appears to be more strongly associated with selected international tone behaviors.

TABLE 3

Correlation of Domestic Actor Tone Indicators
and International Tone Indicators
(Coefficients $\geq$ .50 Are Underlined)

	JUSA	JUSRA	JPRCA	JASA	JUSP	JUSDI	JUST	JUSRP
GNA	.09	-.44	.31	-.32	.09	.38	.15	.05
GNP	-.16	-.14	.25	-.29	-.17	.31	-.09	.22
GNDI	-.00	-.29	.34	-.33	-.17	.36	.28	.33
GNR	_.59_	_-.69_	-.18	_-.54_	.45	_.82_	.25	-.14
GNDOMEC	.17	.06	.09	.21	.29	.13	-.08	_-.57_
GNT	.30	-.36	-.13	-.17	.19	.55	.17	-.16
NGA	-.46	.25	.13	.25	-.35	-.36	.26	.35
NGP	-.03	.21	.49	.19	.22	-.23	-.26	-.06
NGDI	-.21	-.01	.14	.10	-.35	-.02	.27	.20
NGR	_.58_	_-.63_	-.10	-.36	.35	_.64_	_.55_	-.33
NGDOMEC	_-.56_	_.52_	.07	.28	-.42	-.39	-.02	.42
NGT	-.23	-.51	-.26	-.02	-.23	.06	.06	.32
GGA	.25	-.48	.23	-.36	.10	_.60_	.37	.20
GGP	.03	.12	.37	.08	.13	.12	.24	.45
GGDI	.06	-.31	-.04	-.29	-.10	.40	.33	-.40
GGR	.47	_-.60_	-.37	-.53	.17	_.70_	.45	.09
GGNDOMEC	_.61_	_-.77_	-.13	-.64	.42	_.83_	.43	-.21
GGT	.04	-.22	.44	-.22	.19	.35	.12	.18

230

Note that no single variable emerges as a strong potential predictor of J→PRC tone, or, surprisingly, of J→U.S. tone on the political-military security issue.

The matrix of correlations between domestic dyadic tone on different issues (Table 2) indicated relatively high intercorrelation across several different issue areas and actor groups. This suggests that domestic political and economic forces are likely to influence international behavior in a complex and interactive manner. The task for the researcher is to sort out those sets of indicators that have greatest predictive power within selected issues areas and selected international dyadic relations. Once these sets of indicators are identified, it becomes possible for the policy analyst to focus attention on those processes that are most likely to influence change in policy within the specific dyadic relations and issue area with which he is concerned.

Multiple regression was the technique chosen to select the best set of predictors of Japanese international tone toward selected targets and on selected issues. The dependent variables (predicted variables) in the analysis presented below are tone indicators for Japanese behavior toward the United States, Soviet Union, People's Republic of China and Asia on all issues (JUSA, JUSRA, JPRCA, and JASA); toward the United States and the Soviet Union on political-military security issues (JUSP and JUSRP); and toward the United States on diplomatic and international trade issues (JUSDI, JUST).

The independent variables (predictor variables) are domestic dyadic tone indicators. Because tone for all issues and diplomatic issues was highly intercorrelated within dyads, only the diplomatic issue variables were used in the analysis. A total of 15 independent variables was therefore introduced into each multiple stepwise regression equation. The stepwise technique permits the best predictor variable (always the variable with the highest simple correlation) to be entered into the equation first. Then the variable that maximizes the explanatory power of the existing equation is selected and so on until the remaining variables cannot

231

significantly improve prediction. A criterion of at least .01 contribu-
tion to explained variance (R^2) was used to limit the number of variables
admitted to the equations presented in Table 4. Data for each equation
consist of R^2 values or total variance in the dependent variable explained
by the variables admitted to the equation; the regression coefficient (b)
associated with each variable; and, in parentheses, the standardized regres-
sion coefficient (beta weight) which permits the comparison of the relative
influence of each variable. All equations are statistically significant,
though in a very few equations, certain variables became insignificant
(F statistic is significant at $\leq$ .01) after the addition of the final var-
iables. These are marked with asterisks in the table.

In equation 1 overall Japanese tone to the United States is most responsive
to intra-governmental concerns about the domestic economy and secondarily
to resource dependency and international trade issues. This is reasonable,
as it has been noted in previous sections (see especially "Background,"
Chapter 2), since Japanese-U.S. relations were strained during the analytic
period by threats of tariff restrictions on exports to the United States
and embargoes on vital food exports for the United States. Each of these
policies would have had a substantial impact on the Japanese economy. In
response to the threatened restrictions, the Japanese Government adopted
a more active policy of seeking new markets in areas which would guarantee
raw materials supplies. Political-military questions also influence overall
tone to the United States, though the dominant influence comes from govern-
ment positions (GGP and GNP) rather than from the opposition which has been
pressing for departure from past policies of close alliance with the United
States. Overall, intra-governmental positions dominate the equation. This
may be explained in part as a consequence of the traditionally close rela-
tionship between the United States and Japan, a relationship to which much
of the government establishment is committed and from which Japan can
extricate itself only with great effort. Note that the equation does
not indicate any influence of government need to defend its positions
against the opposition, though some influence of opposition concern over
the domestic economy is suggested.

232

TABLE 4

Analysis of the Impact of Domestic Dyadic Actor Interaction on International Behavior

1. JUSA = -.04067 +.04018GGDOMEC -.02588NGDOMEC -.01451GNP -.02029GGR +.04101GGP -.02537GGT -.00739GGDI
   (1.28414)   (-.44708)   (-.22364)   (-.61150)   (.48642)   (-.39036)   (-.18631)
   R^2 = .77

2. JUSP = -.07319 +.03116GNR +.00945NGP -.01887GNP -.00641GGDI +.01479GGT -.02463NGDOMEC +.03278GGP
   (.35273)   (.12520)   (-.31353)   (-.17414)   (.24522)   (-.45904)   (.41888)
   -.01504GNDI +.01190NGR -.02038GGR +.01982GGDOMEC
   (-.42143)   (.13414)   (.66178)   (.68273)
   R^2 = .35

3. JUSDI =-.04245 +.00450GGDOMEC* +.03671GNR +.01498NGR +.362GGP
   (.20285)   (.5443.)   (.22172)   (.10428)
   R^2 = .77

4. JUST = .00858 +.01232NGR -.0023NGDOMEC* +.00144GGDI -.01069GNP +.00408GNDI +.00716GGT -.00619NGP
   (.47849)   (-.12625)   (.13501)   (-.61185)   (.39355)   (.40598)   (-.28245)
   -.00626GNT
   (-.26665)
   R^2 = .57

5. JUSRA = .11169 -.02672GGDOMEC +.02112NGDOMEC +.04029GNT -.03249NGT
   (-.98623)   (.42195)   (.53413)   (-.22304)
   R^2 = .79

6. JUSRP = .00786 -.01400GNDOMEC +.00663GGDI +.00824NGDOMEC -.01451NGR -.00827NGP +.00877GGP
   (-.42271)   (.34701)   (.29608)   (-.31556)   (-.21882)   (.21603)
   R^2 = .72

7. JPRCA = .09830 +.00866NGP +.01853GNDI -.01042GGDI +.02071GGP +.0190GNDOMEC -.03520NGT -.00768GGR
   (.13981)   (.63289)   (-.34494)   (.32279)   (.24631)   (-.27486)   (-.30410)
   R^2 =.64

8. JASA = .11937 -.02649GGDOMEC +.05156GNT +.02850NGR +.01793GGP -.00795GNDI -.00676GGR -.01737NGT
   (-1.19394)   (.83442)   (.42047)   (.29972)   (-.29161)   (-.28730)   (-.14560)
   R^2 =.75

---

* The F statistic for these variables was insignificant at the .01 level.

The Japan-U.S. political-military security issue emerges in equation 2 as considerably more complex than might be anticipated. Eleven variables each contribute at least 1 percent of the total variance explained. Intragovernment, government to non-government, and non-government to government tone on the political-military issue all exercise influence in determining international tone on this same issue. Resource dependency and domestic economic concerns are closely intertwined with political-military concerns, and in fact, their relative weight, as indicated by the beta coefficients, is more substantial than that of the domestic positions on the political-military issue. When the equation is limited only to the domestic indicators on the political-military issue, only 8 percent of the variance in international tone is explained.

The Japanese-U.S. diplomatic relations (JUSDI) equation (number 3) points clearly to the underlying domestic issues that influence overall tone to the United States. These are domestic economic and political-military security concerns. The interaction between government and opposition is indicated by the presence of variables representing both dyads on the resource dependency issue. A major theme of Japanese internal dialogue on this issue has been the question of diversification of economic activities to reduce reliance on U.S. markets and supplies. Again, government policy, (GGP) rather than government-opposition dialogue (GNP or NGP), provides the strongest input on the political-military security issue.

Japanese tone on trade with the United States (equation 4) is strongly influenced by government to non-government dialogue on political-military and resource dependency issues, in addition to trade issues. This can be explained as a result of the long history of dependence on the United States and current efforts to revise that relationship. Note that both GNP and NGP coefficients carry negative signs in the equation, suggesting agreement between government and non-government actors on the trade issue. At the same time, the positive government positions on GNDI and GGT suggest a reluctance to let purely political considerations interfere too strongly with an essential international relationship. As a result of this complexity

234

of relations, the JUST equation accounts for the least amount of explained variance of the entire set studied. Nevertheless, the 57 percent explanatory power is respectable.

As in the case of JUSA tone, tone between Japan and the Soviet Union on all issues (equation 5) responds overwhelmingly to economic considerations. Four economic-related variables account for .79 variance explained. The signs of the coefficients require consideration. The negative sign on GGDOMEC suggests possible reluctance on the part of the very conservative government to permit internal economic issues to alter its long-standing policy of resisting expansion of diplomatic relations to Communist nations, while the opposition has long argued that such an expansion of relations is highly desirable. The sign on trade issue variables is the reverse of those hypothesized, which suggests that positions on these issues are not clear cut.

Japanese interactions with the Soviet Union or political-military security issues (equation 6) again reflect the strong influence of domestic economic concerns on international tone for different issues. Non-government positions have more influence in this equation than in any other, and it should be recalled that a major feature of opposition arguments is the improvement of collaboration between Japan and the Soviet Union. The non-government position on the domestic economy, reflecting support or approval of more positive relations with the Soviet Union, may be influential for this reason.

The event pattern analysis of interactions between Japan and the Soviet Union on all and political-military issues strongly suggested a third party influence in the political-military security issue area, and it was suggested that the interacting issues concerned political-military issues with the United States. The negative signs for the NGR and NGP variables again indicate the possible influence of a third party. If such an interpretation is valid, the positive sign for GGP may indicate efforts on the part of the government to reassure the Soviet Union with respect to Japan's political-military intentions.

235

Diplomatic issue domestic dialogue has the most important influence on
Japan to PRC overall tone (equation 7) and this is to be expected given
the informal, "private meeting" approach which Japan has used to expand
interactions with China. The influence of opposition demands for formali-
zation of Japanese-PRC relations and of intra-government concern over the
impact of such a step on Japan's relations with the Soviet Union, the
United States, and Asia are active in the equation. The beta coefficients
indicate, however, that the relative influence of NGP is minor, though
the non-government position has been strongly in favor of the China rap-
prochement. Economic questions are comparatively less important in the
JPRC relations than in relations with other countries. This is somewhat
surprising, given the strong economic rationale behind present relations
with China. It is, however, the fact that the impact of a change in policy
toward China would have substantially greater impact on Japan's diplo-
matic relations with other countries than on its economic efforts.

Asia, even more than China, represents a new economic and diplomatic fron-
tier in current Japanese thinking. Equation 8 indicates that strong govern-
ment concern over domestic economy, trade, and resource dependency is
active in influencing Japan's behavior toward Asia. In addition, intra-
governmental political considerations, reflecting Japan's new approach
to Asia as a Japanese responsibility, are influential in determining
Japanese tone toward the region.

Summary

The analysis of domestic influences on Japanese international behavior
confirms the notions, represented frequently in scholarly literature, that
Japanese international behavior is more responsive to institutionalized
influences of political parties and the government bureaucracy than to
changing opinion patterns within the population. The issues within domes-
tic dialogue which exercise the most influence on international behavior
are those related to economic questions -- domestic economic performance,

resource needs, and international trade, in that order. The inter-
relationships between stated concerns of domestic actors on these issues
and international behavior are complex. However, the strength of these
relations, indicated by the regression technique, indicates that economic
variables of the type used here can serve as useful indicators of likely
changes in international policy.

CHAPTER 9

ECONOMIC PREDICTION MODELS OF JAPANESE INTERNATIONAL BEHAVIOR

In this chapter, potential economic influences on Japanese international behavior are analyzed. Economic indicators believed to be relevant to Japanese goals and actions, as developed in Chapter 3, are employed in an estimation model to predict future movements in event-based indicators of Japanese overall and issue-specific international behavior.

DEPENDENT VARIABLES

The variables to be forecast by economic variables are issue area quantitative indicators of Japanese behavioral tone toward selected countries and all countries as a group. These indicators have been explained previously in Chapter 3. The following notation is used in the analysis below. The countries or groups of countries toward which Japanese actions are directed are: the United States, US; People's Republic of China, PRC; Soviet Union, USSR; Asian countries, ASIA; and all Japanese behavior regardless of target, WRLD.

To identify issue areas, a hyphen after the country designation will be followed by one of five letters: A, all issues; P, political/military security issues; D, diplomatic issues; R, resource dependency issues; or T, trade issues. Each issue area classification was not estimated for every country; a total of 20 of the possible 25 were considered. The economic independent variables employed as predictors in this analysis have been discussed previously in Chapter 3. The time period under analysis is January 1972 through July 1974. The behavioral tone index was calculated on a monthly basis to enable comparison with monthly economic variables (N=31).

ESTIMATION TECHNIQUE

Multiple linear regression was chosen for estimation of the forecasting equations. A variety of possible curve fitting techniques could have been applied to the problems. Regression analysis was chosen for two reasons -- statistical theory and functional specification.

239

Regression theory is well developed and permits a variety of statistical tests for the significance of an equation and the significance of individual coefficients. Other techniques--the Box-Jenkins method is an excellent example--are powerful and extremely flexible tools but do not permit the variety of statistical inferences possible in using regression. As a result, the Box-Jenkins system tends to be more data-oriented. For problems with known causal structures or easily presumed causal implications, such an orientation can be very desirable. Unfortunately, neither condition applies to the problems at hand.

By choosing regression, a linear relation is accepted for the problem. Admittedly, this may well be an oversimplification of reality. But, lacking any information to suggest an alternate system, a linear relation provides a more readily understandable and interpretable result.

To allow greater flexibility within the regression approach, lagged values of each economic variable were created. The lags employed as the most consistent across all equations were 2-month, 4-month, and 6-month lags. This structure established 60 economic "variables." To implement the lags, data for July through December 1971 were added to the set of economic figures previously collected.

To distinguish one variable for different periods, the following notation is adopted: US-A and X_{USSR}^{1} indicate that the two variables are observed for the same month; US-A and $X-6_{USSR}$ indicate that the value of exports to the USSR was observed 6 months prior to the observation of US-A.

ESTIMATION RESULTS

The equations estimated are reported in groups according to the target country of Japanese actions. Tables 2-5 report the estimated equations. The coefficients and their estimated standard errors (in parentheses) as well as R^2 and the F statistics of the equation are included. All equations were estimated using 27 of the 31 available observations--the April through July 1974 observations were deleted to allow limited testing of the equations'

_____

[1] See Chapter 3 for a key to the economic variable notations used here.

forecasting ability. Forecasts were constructed for each of the four months
for each equation. Observations outside the 95 percent confidence interval
of the forecast by the equation render the equation suspect. Those equations
failing are noted in the discussion of each table.

US AS TARGET - TABLE 1

In terms of the limited forecasting experiment, each equation's 95 percent
confidence interval for the forecast contained the observed value. However,
US-P and US-D were marginally successful.

The interesting feature of the US-A and US-P equations is the significant
coefficient estimated for X_{USSR}. A possible interpretation for these results
can be extracted from the theory of collective goods applied to alliances.
If it is true that Japan's dependence on the United States as a market
for exports is the benefit derived from the U.S. alignment, then
increased exports to the USSR would allow Japan to replace a part of the sales
normally going to the United States, reduce the benefit it derives from U.S.
alignment and also reduce the cost of alignment. This may result in Japan's
adopting a less friendly tone toward the United States. The negative
coefficients on X_{USSR} in both equations are consistent with this interpreta-
tion.

USSR AS TARGET - TABLE 2

In all honesty, the equations reported in Table 2 are difficult to interpret.
But, because each of these equations performed well on the small forecast
test, it seems worthwhile to attempt to sort out some of the influences.

For the USSR-A equation, the sign of the coefficient on X_{US} is consistent
with the public good-alliance model but the sign of X_{US}^{-2} is not. Neither is
the sign of the term X_{USSR} consistent with the explanation. Only if a
dynamic response framework is adopted can the signs of these variables be
explained. In more familiar language, it is possible to posit a behavior
pattern that is capable of replicating a "walk a fine line" approach to the
USSR--gather the benefits but do not allow costs to be imposed.

241

TABLE 1

Japanese Behavior to the U.S.
Estimated Equations

$$\text{US-A} = -2.22707 - \underset{(0.01585)}{0.04818}\, X_{USSR} + \underset{(0.00371)}{0.01747}\, NO^{-6} - \underset{(0.00238)}{0.00650}\, NO^{-4}$$

$$R^2 = .5601 \qquad F = 9.762$$

$$\text{US-P} = 3.14743 + \underset{(0.00284)}{0.00824}\, X_{EEC} - \underset{(0.0239)}{0.07518}\, X_{USSR} - \underset{(0.00011)}{0.00023}\, R$$

$$R^2 = .3667 \qquad F = 4.439$$

$$\text{US-D} = -18.87129 - \underset{(0.00243)}{0.00474}\, X_{EEC} + \underset{(0.06505)}{0.2094}\, CU$$

$$R^2 = .3020 \qquad F = 5.192$$

$$\text{US-T} = -17.40811 - \underset{(0.00392)}{0.01721}\, M_{EEC} - \underset{(0.01410)}{0.02658}\, W + \underset{(0.00130)}{0.00508}\, NO + \underset{(0.07800)}{0.24974}\, CU^{-6} + \underset{(0.00068)}{0.00230}\, X_{US}^{-4} + \underset{(0.00008)}{0.00034}\, R^{-4} - \underset{(0.00009)}{0.00051}\, R$$

$$R^2 = .7308 \qquad F = 7.367$$

242

TABLE 2

Japanese Behavior to the USSR

Estimated Equations

$$\text{USSR-A} = -2.15247 - 0.07992\ X_{USSR} + 0.00247\ X_{US} + 0.09120\ W^{-4} - 0.00946\ X_{US}^{-2} + 0.00685\ X_{EEC}^{-2}$$
$$(0.01232) \qquad (0.00121) \qquad (0.02114) \qquad (0.00173) \qquad (0.00281)$$

$$R^2 = .8037 \qquad F = 17.196$$

$$\text{USSR-P} = 6.58180 - 0.00023\ R + 0.03043\ X_{USSR} - 0.00579\ NO^{-4} - 0.00207\ X_{US}^{-2}$$
$$(0.00008) \qquad (0.01242) \qquad (0.00146) \qquad (0.00092)$$

$$R^2 = .5278 \qquad F = 6.148$$

$$\text{USSR-D} = 14.37666 - 0.14892\ CU + 0.00428\ X_{US}^{-6} - 0.00229\ X_{US}^{-2}$$
$$(0.06029) \qquad (0.00159) \qquad (0.00147)$$

$$R^2 = .3964 \qquad F = 5.035$$

$$\text{USSR-R} = 2.52923 + 0.00662\ M_{US} - 0.00306\ M_{EEC} - 0.03058\ X_{EEC} - 0.00765\ NO^{-6}$$
$$(0.00165) \qquad (0.00186) \qquad (0.01004) \qquad (0.00345)$$

$$R^2 = .4896 \qquad F = 5.276$$

For the USSR-R equation, the signs of all variables are interpretable. The negative sign for new orders suggests that an upswing within the Japanese economy permits a lessening of friendly tone toward the Soviet Union as a potential supplier of resources. Alternately, the negative sign could be the result of an increased firmness by the Japanese in attempts to acquire resources from the Soviet Union as the Japanese economy expands. The negative signs for exports and imports to and from the EEC capture the possibility of an alternate market for Japan as it switches from U.S. dependence. On resource areas, Japan depends for foodstuffs on the United States. To insure deliveries from the United States, increased imports are associated with increased tone.

PRC AS TARGET - TABLE 3

The equations reported in Table 3 performed adequately in the small forecast test. On these grounds the equations are acceptable. In the judgment of the research staff, the particular time period of the study may have produced these results rather than any underlying causal structure.

Throughout the sample period, Japanese tone toward the PRC was quite friendly and showed a tendency to rise (becoming more friendly) over time. Virtually all economic variables display an increasing trend over time. High correlations are to be expected in such a situation. Two checks of the "data-induced" or "sample period" problem were tried. The first, a detailed examination of the correlation matrix of all variables (dependent and independent) plus a time trend, did indicate a tendency for slightly higher correlations of PRC-A, PRC-D and PRC-T with time and all economic variables than any other issue area indicators. The second check was an extended regression strategy that posited more economic variables for each of the equations. It was possible to produce near "perfect" fits for these expanded equations.

As a result of these checks and the previous experience of the research staff, the reported equations are indicative of an _emerging_ structure. In the immediate future, the best expectation is that the equations will perform reasonably well. As Japanese-PRC relations mature, the equations will do less well as forecasting tools.

TABLE 3

Japanese Behavior to the People's Republic of China
Estimated Equations

$$PRC\text{-}A = 17.94643 + 0.00196\ M - 0.00768\ NO + 0.08727\ X_{USSR}^{-6} + 0.01533\ NO^{-4} - 0.25680\ WPI^{-2}$$
$$\phantom{PRC\text{-}A = 17.94643 + }(0.00007)(0.00201)(0.01683)(0.00456)(0.06511)$$

$$R^2 = .6731 \qquad F = 8.649$$

$$PRC\text{-}D = 4.87383 - 0.01237\ NO^{-6} - 0.00790\ M_{US}^{-4} + 0.09230\ X_{USSR}^{-4} - 0.00810\ X_{US}^{-2} + 0.03041\ i_{EEC}^{-2} + 0.00454\ X_{EEC}^{-2}$$
$$(0.00405)(0.00214)(0.01672)(0.00179)(0.00712)(0.00334)$$

$$R^2 = .7293 \qquad F = 8.979$$

$$PRC\text{-}T = 16.05367 + 0.01010\ M_{US} - 0.06662\ M_{USSR} - 0.07860\ X_{USSR} + 0.18115\ CU + 0.00030\ R^{-6} + 0.00321\ X_{EEC}^{-2} - 0.36938\ CU^{-2}$$
$$(0.00188)(0.01423)(0.01724)(0.10079)(0.00009)(0.00201)(0.09608)$$

$$R^2 = .7841 \qquad F = 9.861$$

ASIAN COUNTRIES AS TARGET - TABLE 4

The ASIA-D equation is not statistically significant at the 99 percent con-
fidence level, nor does it forecast even tolerably well. The other equations do
perform adequately, ASIA-R in particular. For the ASIA-R equation, a moment's
reflection will allow the realization that every coefficient sign save one
(R^{-6}) is perfectly consistent with the thesis that Japan views Asian markets
as sources of needed raw materials and that Japan views the Soviet Union as
an alternative supplier of raw materials. The positive sign of M_{EEC} reflects
the relative lack of primary resources of European countries.

JAPAN TO THE WORLD - TABLE 5

Of the five equations estimated for total Japanese actions, WRLD-A and
WRLD-D are not significant. Although significant, WRLD-P did not pass the
forecast test. Both of the remaining equations performed well. The sur-
prising feature of these equations is the appearance in each equation of
total imports and country-specific exports. A reasonable a priori surmise
would have aggregate measures of imports and exports in the equations
together with descriptors of the domestic Japanese economy.

SUMMARY AND EVALUATION

Having estimated 20 forecasting equations for different aspects of Japanese
international behavior, two points seem clear. First, in general, it is
possible to use economic variables to forecast such interaction in the short
term. Second, the failure of some equations and the difficult inter-
pretation of others suggest that an improved forecasting technique could
be developed.

The suggested approach for any future research efforts is to attempt to
consider simultaneously the several ideas subsumed under the heading, public-
goods theories of alignment behavior. The potential explanatory power of
such an approach seems to be substantial. The fundamental difficulty that
blocked any attempt to begin that development during the current project is

TABLE 4

Japanese Behavior to Asia
Estimated Equations

$$\text{ASIA-A} = -2.26708 + 0.00676 \ X_{US} - 0.00758 \ M_{US} + 0.00815 \ NO^{-4}$$
$$(0.00215) \qquad (0.00261) \qquad (0.00380)$$

$$R^2 = .3613 \qquad\qquad F = 4.337$$

$$\text{ASIA-D} = -0.56333 + 0.00245 \ X_{US}$$
$$(0.00155)$$

$$R^2 = .0910 \qquad\qquad F = 2.504$$

$$\text{ASIA-R} = 23.02054 + 0.00070 \ X + 0.03811 \ M_{EEC} - 0.07173 \ M_{USSR} + 0.00326 \ X_{US}^{-6} - 0.35491 \ CU^{-6} - 0.00018 \ R^{-6} + 0.00863 \ NO^{-4}$$
$$(0.00046) \qquad (0.01115) \qquad (0.02148) \qquad (0.00150) \qquad (0.13177) \qquad (0.00009) \qquad (0.00276)$$
$$+ 0.00031 \ R^{-2}$$
$$(0.00012)$$

$$R^2 = .7776 \qquad\qquad F = 7.866$$

$$\text{ASIA-T} = -1.02464 + 0.05324 \ X_{USSR}^{-6}$$
$$(0.02151)$$

$$R^2 = .1969 \qquad\qquad F = 6.128$$

247

TABLE 5

Japanese Behavior to the World
Estimated Equations

WRLD-A $= -2.03327 + 0.00337\ X_{US}^{-6} + 0.03277\ X_{USSR}^{-4}$
$\qquad\qquad\qquad\quad (0.00132)\qquad\ (0.01590)$

$\qquad R^2 = .2760 \qquad\qquad F = 4.574$

WRLD-P $= -1.92065 + 0.00847\ NO^{-6} - 0.44755\ CU^{-4} - 0.00032\ R^{-4} - 0.03494\ X_{USSR}^{-2} + 0.49909\ CU^{-2}$
$\qquad\qquad\qquad\quad (0.00452)\qquad\quad (0.11615)\qquad\quad (0.00014)\qquad (0.01546)\qquad\qquad (0.11501)$

$\qquad R^2 = .6260 \qquad\qquad F = 7.031$

WRLD-D $= .46838 + 0.03102\ X_{USSR}^{-4}$
$\qquad\qquad\qquad (0.01576)$

$\qquad R^2 = .1341 \qquad\qquad F = 3.873$

WRLD-R $= 14.31647 + 0.00794\ M_{US} + 0.00263\ X_{US} - 0.00074\ NO + 0.00629\ X_{US}^{-6} - 0.23054\ PI^{-6} + 0.00107\ M^{-2}$
$\qquad\qquad\qquad\quad (0.00174)\quad (0.00113)\quad (0.00160)\quad (0.00127)\qquad (0.05582)\qquad (0.00063)$

$\qquad R^2 = .7718 \qquad\qquad F = 11.275$

WRLD-T $= 6.52271 + 0.00326\ M - 0.00475\ X_{US} - 0.06217\ WPI - 0.00995\ M_{EEC}^{-6} + 0.09885\ X_{USSR}^{-6} - 0.04950\ X_{EEC}^{-2}$
$\qquad\qquad\qquad\quad (0.00064)\quad (0.00151)\quad (0.03053)\quad (0.00286)\qquad (0.01747)\qquad (0.00971)$

$\qquad R^2 = .7658 \qquad\qquad F = 10.898$

248

the number of observations required to estimate parameters in such a system.
And, properly designed, the system would require data for at least one other
country.

In the absence of an alternate forecasting strategy, three suggestions are
rendered as guides for future work. First, concentrate attention on individ-
ual country targets or groups of homogeneous countries. Second, focus the
forecasting exercise toward the economic issue areas if at all possible.
Rather than be exhaustive in attempts to forecast political/military
behavior, attempt to relate political/military issue indicators to both
economic variables and indicators of target country responses in the same
equation. And third, attempt to estimate time trends for economic variables
and employ the residuals from these equations as predictors of international
behaviors.

BIBLIOGRAPHY

ABEL, E. (1968) The Missile Crisis. New York: Bantam Books.

ANDRIOLE, S., J. WILKENFELD, and G. HOPPLE (1975) "The Sources and Pro-
cesses of Foreign Policy Behavior: A Panoramic Conceptualization."
Paper presented at the International Studies Association Annual
Meeting, Washington, D.C., 19-22 February.

AZAR, E. (1972) "Conflict Escalation and Conflict Reduction in an Inter-
national Crisis: Suez, 1956," Journal of Conflict Resolution 16, 2
(June).

_____ (1970) "Analysis of International Events," Peace Research Reviews
IV (November).

BREWER, T. (1973) "Issue and Context Variations in Foreign Policy,"
Journal of Conflict Resolution 17 (March).

Bureau of Statistics (1972) Japan Statistical Yearbook. Tokyo: Office
of the Prime Minister.

BURROWES, R. and B. SPECTOR (1970) "Conflict and Cooperation Within and
Among Nations: Enumerative Profiles of Syria, Jordan and the
United Arab Republic, January 1965 to May 1967." Paper presented
at the Annual Meeting of the International Studies Association,
Pittsburgh, Pennsylvania, 2-4 April.

BURROWES, R., et al. (1970) "The Road to the Six Day War: A Relational
Analysis of Conflict and Cooperation Within and Between the Arab-
Israeli and Inter-Arab Political Domains." Presented at the Annual
Meeting of the Middle East Studies Association.

CACI (1974) Development and Experimental Application of Quantitative
International Affairs Indicators, Final Report. Arlington, Va.:
CACI, Inc.

_____ (1973) "International Affairs Indicators for Defense Decision-
Making." Arlington, Va.: CACI, Inc.

_____ (1972) "Development and Experimental Application of Quantitative
International Affairs Indicators," Interim Technical Report.
Arlington, Va.: CACI, Inc.

COPLIN, W. (1971) Introduction to International Politics: A Theoretical
Overview. Chicago: Markham Publishing Co.

CORSON, W. (1971) "Conflict and Cooperation in East-West Crises." Unpub-
lished paper, University of Michigan.

_____ (1970) "Conflict and Cooperation in East-West Relations: Measurement and Explanation." Institute for Social Research, University of Michigan. (mimeo)

DAHL, R. (1969) "The Concept of Power," in R. Bell, D. Edwards, and R. Wagner (eds.) Political Power. New York: Free Press.

_____ (1961) Who Governs. New Haven: Yale University Press.

DEUTSCH, K. (1968) The Analysis of International Relations. Englewood Cliffs, N.J.: Prentice-Hall, Inc.

_____ (1966) "Power and Communications in International Society," in A. DeReuck and J. Knight (eds.) Conflict in Society. London: Ciba Foundation Symposium.

FUKUI, H. (1974) "Foreign Policy-Making in Japan: Case Studies for Empirical Theory." Paper presented at the Annual Meeting of Association for Asian Studies, Boston, 1-3 April.

HAITANI, K. (1973) "Japan's Trade Problem and the Yen," Asian Survey 13 (August).

HARSANYI, J. (1969) "Measurement of Social Power, Opportunity Costs, and the Theory of Two-Person Bargaining Games," in R. Bell, D. Edwards, and R. Wagner (eds.) Political Power. New York: Free Press.

HAYES, R. (1974) "Does Violence Precede Repression or Does Repression Precede Violence: A Study Over Time." Presented at the Annual Meeting of the American Political Science Association.

_____ (1973) "Identifying and Measuring Changes in the Frequency of Event Data," International Studies Quarterly 17, 4 (December).

HELLMANN, D. (1972) Japan and East Asia. New York: Praeger Publishers.

HERMANN, C. (1969) "International Crisis as a Situational Variable," in J. Rosenau (ed.) International Politics and Foreign Policy. New York: The Free Press.

HOGGARD, G.D. (1970) "Differential Source Coverage and the Analysis of International Interaction Data." University of Southern California.

_____ (1969) "Indicators of International Interaction." University of Southern California.

IKLE, F.C. (1964) How Nations Negotiate. New York: Praeger.

_____ and N. LEITES (1962) "Political Negotiations as a Process of Modifying Utilities," Journal of Conflict Resolution 6, 1.

JOHNSON, C. (1972) "How China and Japan See Each Other," Foreign Affairs 50 (July).

KOHLER, G. (1975) "Scaling Events Aggregates: The H.Q. Scale and Tension Management," Peace Research 7, 2 (April).

MARCH, J. (1969) "An Introduction to the Theory and Measurement of Influence," in R. Bell, D. Edwards, and R. Wagner (eds.) Political Power. New York: Free Press.

MCCLELLAND, C.A. (1969) "Action Structures and Communication in Two International Crises: Quemoy and Berlin," in J. Rosenau (ed.) International Politics and Foreign Policy. New York: Free Press.

_____ (1963) "Response Behavior Study: International Bargaining, Conflict and Accommodations," University of Southern California (May).

_____ and G.D. HOGGARD (1969) "Conflict Patterns in the Interactions Among Nations," in J.N. Rosenau (ed.) International Politics and Foreign Policy. New York: Free Press.

MCCLELLAND, C.A. and R. YOUNG (1970) "The Flow of International Events, July-December 1969." Interim Technical Report, World Event/Interaction Survey, Department of International Relations, University of Southern California (January).

MOLINA, E. (No Date) Poisson's Exponential Binomial Limit, 10th Printing. Princeton, N.J.: D. Van Nostrand Co.

MOORE, J.A. and R.A. YOUNG (1969) "Some Preliminary Short-Term Predictions of International Interaction." World Event/Interaction Survey Working Paper, University of Southern California.

MOSES, L., R. BRODY, O. HOLSTI, J. KADENE, and J. MILSTEIN (1967) "Scaling Inter-Nation Action Data," Science 156 (May).

NICKEL, H. (1974) "The Rediscovery of Japan," Foreign Policy 14.

OKITA, S. (1974) "Natural Resource Dependency and Japanese Foreign Policy," Foreign Affairs 52 (July): 714-724.

OVERHOLT, W. (1974) Japan's Emerging World Role, HI-1946/3-RR. Croton-on-Hudson, New York: Hudson Institute.

PHILLIPS, W. (1973) "The Conflict Environment of Nations: A Study of Conflict Inputs to Nations in 1963," in J. Wilkenfeld (ed.) Conflict Behavior and Linkage Politics. New York: David McKay Co.

_____ and R. CRAIN (1974) "Dynamic Foreign Policy Interactions: Reciprocity and Uncertainty in Foreign Policy," in P. McGowan (ed.) Yearbook of International Relations. Beverly Hills: Sage.

POND, E. (1973) "Japan and Russia: The View from Tokyo," Foreign Affairs 52 (October).

REISCHAUER, E. (1974) "Their Special Strengths," Foreign Policy 14 (Spring).

RICHARDSON, B. (1974) The Political Culture of Japan. Beverly Hills: University of California Press.

ROSENAU, J. (1967) "Foreign Policy as an Issue-Area," in J. Rosenau (ed.) Domestic Sources of Foreign Policy. New York: The Free Press.

_____ (1966) "Pre-Theories and Theories of Foreign Policy," in R.B. Farrell (ed.) Approaches to Comparative and International Politics. Evanston: Northwestern University Press.

RUBIN, T. and G.A. HILL (1973) "Experiments in the Scaling and Weighting of International Event Data." Arlington, Va.: CACI, Inc.

RUMMEL, R.J. (1970) Applied Factor Analysis. Evanston: Northwestern University Press.

SALMORE, B. and L. BRADY (eds.) (1972) "Creon Supplemental and Descriptive Coding Manual: Revised," CREON Publication 9B, Mershon Center, The Ohio State University.

SCALAPINO, R. (1972) "American-Japanese Relations in a Changing Era," The Washington Papers 2. Beverly Hills: Sage Publications.

SCHELLING, T. (1971) Arms and Influence. New Haven: Yale University Press.

_____ (1960) The Strategy of Conflict. New York: Oxford.

SINGER, M. (1972) Weak States in a World of Powers. New York: The Free Press.

SMOKER, P. (1969) "A Time-Series Analysis of Sino-Indian Relations," Journal of Conflict Resolution 13, 2.

SPECTOR, B. (1976) "A Social Psychological Model of Behavior and Position Modification in International Bargaining," in I.W. Zartman (ed.) The Fifty-Percent Solution. New York: Doubleday.

_____ (1975) "The Effects of Personality and Situational Variables on the Bargaining Process and Outcome." Ph.D. dissertation, New York University.

STOUFFER, S., et al. (1950) Measurement and Prediction. New York: John Wiley and Sons.

TANTER, R. (1974) Modeling and Managing International Conflicts: The Berlin Crises. Beverly Hills: Sage.

TSURUTANI, T. (1974) "The Causes of Paralysis," Foreign Policy 14 (Spring): 125-141.

TUFTE, E. (1975) "Determinants of the Outcome of Midterm Congressional Elections," American Political Science Review, forthcoming.

WAKAIZUMI, K. (1974) "Japan's Dilemma: To Act or Not To Act," Foreign Policy 16 (Fall).

WARD, M., et al. (1975) "Petroleum-Related Transnational Interactions: A Comparative Issue-Specific Events Data Analysis." Presented at the Annual Meeting of the International Studies Association.

WHITE, D.M. (1971) "Power and Intention," American Political Science Review LSV, 3: 749-759.

WILKENFELD, J. (ed.) (1973) Conflict Behavior and Linkage Politics. New York: David McKay Co.

_____ (1973) "Domestic and Foreign Conflict," in J. Wilkenfeld (ed.) Conflict Behavior and Linkage Politics. New York: David McKay Co.

YANAGA, C. (1968) Big Business in Japanese Politics. New Haven: Yale University Press.

ZARTMAN, I.W. (1974) "The Political Analysis of Negotiations," World Politics 26, 3 (April).

_____ (1971) The Politics of Trade Negotiations Between Africa and the EEC. Princeton: Princeton University Press.

ZINNES, D.A. (1972) "Some Evidence Relevant to the Man-Milieu Hypothesis," in J.N. Rosenau, V. Davis, and M. East (eds.) The Analysis of International Politics: Essays in Honor of Harold and Margaret Sprout. New York: Free Press.

C.A.C.I.

WASHINGTON, D.C. OFFICES

CODEBOOK FOR
DEFENSE EVENTS CODING SCHEME FOR
DOMESTIC AND INTERNATIONAL EVENTS

Revisions to Codebook made November 1974,
and 1974 Data Recoded as per Revisions

M. Hayes

B. Spector

Original Codebook
by
Vivian Moore
June 1974

253<

TABLE OF CONTENTS

LIST OF TABLES

This report presents the Defense Events Coding Scheme (DECS) for coding international and domestic events. The coding system was developed to (1) increase the detail in international events categories in the World Event/Interaction Survey (WEIS) coding project; (2) add new components to the WEIS coding system (e.g., subnational actors and targets); and (3) develop an initial list of domestic events categories. The international events in DECS comprise the 63 WEIS events categories plus about 40 new international events. The domestic events were selected from among several domestic events coding schemes and included some newly developed domestic events categories. The coding system was applied to four years (1971-1974) of Japanese interactions reported in the Foreign Broadcast Information Service Bulletin (FBIS).

The report is divided into four sections. Section I describes revisions of the original Defense Events Coding Scheme; Section II, the components of DECS; Section III, the rules for coding; and Section IV, procedures for writing textual abstracts for each event coded.

I. EXPLANATION OF REVISIONS

DEFINITION OF AN EVENT

The original Defense Events Coding Scheme (DECS) defined an event as "any distinct, human activity." This definition was a departure from definitions used in other events coding schemes in that it (1) encompassed a much larger range of behavior, and (2) had no theoretical or historical basis. Several members of the Indicator Project argued that a more precise definition, rooted in the events literature, would be more useful for analytic purposes. Consequently, the author reviewed major international and domestic events coding schemes to establish a viable definition of an event.

International Events

An "event," specifically an "international event," has been variously defined. Charles McClelland (World Event/Interaction Survey) considers an event a specific official statement or action that crosses a national boundary (Fitzsimmons, 1969; Truesdell, 1973). Edward Azar (Conflict and Peace Data Bank) is more general in his definition. He considers an event an overt action that may affect the behavior of other international system actors (1970). Patrick McGowan (Comparative Study of Foreign Policy) similarly notes that an action is taken to affect the behavior of the recipient (1970). Charles Hermann (CREON) defines an international event as "purposeful behavior which may be either verbal or nonverbal and which is initiated by some human actor who represents the executive of a state" (1970).

Drawing upon these definitions an international event must, for the purposes of DECS, satisfy the following criteria:[1]

---

[1] These criteria are mutually exclusive. For example, an event that satisfies the third criterion need not involve an official government spokesman (criterion 1).

2

1. Occur across national boundaries (between two or more nations, international organizations, or groups), or

2. Involve at least one official government spokesman or group (e.g., President, Congress), or

3. Constitute a political relationship between two or more actors in the international system.

Domestic Events

A review of the literature of domestic conflict suggests a number of approaches to defining an "internal" or "domestic event." Taylor and Hudson (1970) and the Feierabends (1968) contend that domestic events involve the political system in one way or another. Taylor and Hudson suggest that political structure, political participation, and the relationship between the rulers and the ruled are important dimensions of domestic political behavior, or "events." James Rosenau (1968) posits three dimensions of domestic political behavior--internal war, authority (e.g., roles), and personnel and structural conflicts (e.g., internal power conflicts). John Sullivan (1969) agrees that "political" or "ideological" disputes are important phenomena that must be considered.

One other significant dimension is that of anomic versus organized activity. Charles Tilly (1973) suggests that political turmoil may be anomic (e.g., riots) or tactical (e.g., terrorist bombings). Both the Feierabends and Taylor and Hudson agree with this basic dichotomy.

Drawing upon these definitions a domestic event must, for the purposes of DECS, satisfy the following criteria:[2]

1. Involve the national government directly, that is, the event as reported must pertain to the executive structure (e.g., governmental changes, changes in personnel, laws), or

---

[2] Again, these criteria are mutually exclusive.

3

2. Constitute political participation,[3] either anomic or struc-
    tural, by any actor, including aggregates such as political
    parties and lobbying organizations, or

3. Constitute a relationship between the rulers and the ruled in
    the political system (e.g., declaration of martial law, lifting
    of restrictions).

Non-Interactive Events

Non-interactive events are occurrences that may be historically important
but have either no specific actor or target such as the death of a president
or the occurrence of a natural disaster. These events are coded "0" in the
actor or target column, depending upon which is not relevant.

EVENT CODES

The original coding scheme was designed to develop a more detailed list of
event codes, and to bring together event codes that could be applied to both
international and domestic actions. There were several problems with this
approach.

First, the 128 DECS codes were derived partly from WEIS and from ad hoc
selection. The final original coding scheme, however, was a relatively com-
plete departure from WEIS and other existing events coding schemes since it
had a different overall structure and contained different categories and
numeric codes.

Since WEIS had been used from the inception of the Indicator Project, it
seemed reasonable to increase its detail rather than to develop a totally
new system that would not be comparable to any other. An increase in detail
in an already existing system would make it possible to compare the systems
to determine whether the increase is actually necessary and useful for anal-
ysis. Therefore, the following rules were used in the revision of DECS

---

[3] Political participation is any action aimed at influencing government
policy, behavior, structure, or participants.

4

international events categories:

1. When a DECS event could be subsumed under an already existing WEIS event category, the DECS event was eliminated.

2. When a DECS event could be subsumed under a WEIS combined event category, but no event code fit the event, a new code under the appropriate WEIS category was created for the event.

3. When no WEIS combined event category fit the DECS event, a new combined event category plus event categories under that combined event category was created for the DECS event.

In this way, approximately 25 new events were added to the WEIS system from the DECS codes. This represents a 40 percent increase in detail in the WEIS coding scheme, an increase that should be more than adequate for testing whether more detail in coding actually is desirable and workable.

The total number of international events categories in the revised scheme is approximately 84. It seems more reasonable to work with a 40 percent increase in detail on an already existing and tested system than to use a completely untested system that represents a 100 percent increase in detail. If the WEIS system (as revised) indicates that more detail would be useful after being tested, then that change could be made in the coding system.

The second problem was that DECS did not separate the international and domestic events domains. Each event code theoretically could be applied to either international or domestic situations. This assumes that a particular international event is comparable to the same domestic event. For example, a meeting of Israeli and Egyptian negotiators would be comparable to a Congressional committee meeting.

The literature concerning international and domestic events domains presents evidence that these domains are separate and generally unrelated. Rummel (1963) and Tanter (1966) questioned the commonly held notion that the two domains are related. Their analyses indicated that the domestic and external politics of nations are largely independent of one another. Burrowes and Spector (1972) factor analyzed Syrian external and domestic events and presented further evidence confirming the independence of the two domains.

5

Three major studies that code both domestic and external events separate the two domains. These studies are:

- Robert Burrowes, <u>Middle East Conflict and Cooperation (MECCA) Project</u>

- Rudolph Rummel, <u>Dimensionality of Nations (DON) Project</u> (also Tanter, 1966; Wilkenfeld, 1972; Banks, 1972)

- Charles Taylor and Michael Hudson, <u>World Handbook of Political and Social Indicators, II</u>

It seems more sensible to rely on past-tested systems of coding domestic events than to operate with an entirely new, untested category system, at least for an initial test of a new coding scheme. Therefore, the following rules were used to develop a category system for domestic events separate from international events:

1. Categories were selected from the following major domestic events studies:

   (a) Robert Burrowes, <u>MECCA Project</u>

   (b) John Collins, <u>Foreign Conflict Behavior and Domestic Disorder in Africa</u>

   (c) Ivo and Rosalind Feierabend, <u>Political Events Project</u>

   (d) Rudolph Rummel, <u>DON Project</u>

   (e) Charles Taylor and Michael Hudson, <u>World Handbook of Political and Social Indicators, II</u>

2. The various categories were combined and identical categories eliminated.

3. Combined events categories from the DECS international events scheme were added where the categories did not match already selected domestic codes.

4. Slightly more detail was added by the authors.

The addition of combined events categories enriched the domestic events detail, particularly in the areas of verbal cooperation and verbal conflict. There are approximately 75 domestic events categories.

6

COMPONENTS

The Defense Events Coding Scheme consists of two parts: the analytic/numeric codes, and the textual narrative of the events. Coders select events, assign them numeric codes, then write a brief textual description of each coded event.

Analytic components of DECS are as follows:

- Date
  The day, month, and year in which the event is reported to have occurred.

- Actor
  International actor is the country, group, region, or international organization that initiates the event.

  Subnational actor is the person or group initiating the event.

- Event
  Character: international, domestic, or non-interactive.
  Event: type of event.
  Length: discrete or continuous.

- First (direct) target
  International target is the country, group, region, or international organization that receives the event.

  Subnational target is the person or group at whom the event is directed.

- Second (indirect) target
  International target is any country, group, region, or international organization other than the first target about which the event occurs.

- Subject
  A general topic of the coded event.

- Issue
  A particular issue and issue position associated with the event.

- Source
  A code for the data source.

7

ALL CODES ARE RIGHT JUSTIFIED, THAT IS, FOR EACH CATEGORY, THE ANALYTIC
CODE MUST END IN THE FURTHEST RIGHT-HAND COLUMN OF THAT CATEGORY. For
example, there are nine columns for the subject codes. Each subject
code is three digits. If there are only two subject codes, the codes
would appear in columns 36-41. Below is a list of the categories and
columns of each code.

Coded Item	Column
Day	1-2
Month	3-4
Year	5-6
International Actor	7-9
Subnational Actor	11-13
Character of Event	14
Event Code	15-17
Length of Event	18
1st Target (International)	19-21
1st Target (Subnational)	23-25
2nd Target (International)	26-28
2nd Target (Subnational)	30-32
Subject	33-35, 36-38, 39-41
Issue	46-49
Issue Position	50
Source	51

A sample code sheet is shown on the following page.

8

DATE	ACTOR		EVENT		1st TARGET		2nd TARGET		GENERIC SUBJECT RETRIEVAL CODES	SPECIFIC ISSUE CODES	Source
	INT 1	SUB 1	b e t	l g t h	INT 1	SUB 1	INT 1	SUB 1			

9

III. CODING RULES

DATE

The date is the specific date on which the event occurred. It includes the day, month, and year in which the event is reported. The following codes are used for the date.

Day   = 01-31
Month = 01-12
Year = 00-99   (last two digits of the year)

Example: January 3, 1972 = 030172[4]

If only the month and year are known, the day is coded "00." If only the quarter or semi-annual period in which the event occurred is mentioned, the month is coded 8Y where Y is the quarter (i.e., 1,2,3 or 4) of the year Y; or 9X, where X is the first or second 6-month period (i.e., 1,2) of the year.

If there is insufficient information to specify the day, month, quarter, or semi-annual period of an event, "0" and "0" will be entered in both columns. DURING CODING, THE INABILITY TO ENTER A SPECIFIC CODE FOR ANY OF THE CATE-GORIES WILL BE DENOTED BY A ZERO (0) ON THE CODE SHEET IN THE FURTHEST RIGHT-HAND COLUMN OF THE SPECIFIC CATEGORY.

INTERNATIONAL ACTOR

The international actor is the country, group, region, or international organization that initiates the action. THERE MUST ALWAYS BE A CODE FOR INTERNATIONAL ACTOR. Table 1 contains a list of these actors that includes:

- All independent countries
- Selected major colonies/protectorates

---

[4] For 1974 data, the date variable is coded as "Year-Month-Day".

- Selected intergovernmental organizations
- Selected "other entities" and regions[5]

The coder should determine the nationality of the entity that is performing the event. Occasionally, questions of mixed nationality occur (e.g., a journalist or businessman who is a citizen of nation X works for a news agency or business which is of a different nationality). In such cases, the nationality of the organization for which the individual works is coded unless he engages in activities or events that are expressly and obviously not being carried out as part of the program of his employer. Employees of an international organization will normally be presumed to be acting in its behalf unless it is explicitly known that such is not the case.

TABLE 1

INTERNATIONAL ACTOR/TARGET CODE LIST

(Alphabetical)

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
Independent Countries					
700	Afghanistan	AFG	765	Bangladesh	BGD
339	Albania	ALB	053	Barbados	BAR
615	Algeria	ALG	211	Belgium	BEL
232	Andorra	AND	266	Berlin/East	EBE
160	Argentina	ARG	267	Berlin/West	WBE
900	Australia	AUL	760	Bhutan	BHU
305	Austria	AUS	145	Bolivia	BOL
035	Bahamas	BAS	571	Botswana	BOT
695	Bahrain	BAH	140	Brazil	BRA

---

[5] Regions are used when no one specific actor (or target) is applicable.

11

TABLE 1 (Cont'd.)

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
355	Bulgaria	BUL	530	Ethiopia	ETH
775	Burma	BUR	375	Finland	FIN
516	Burundi	BUI	220	France	FRN
811	Cambodia	CAM	980	Fiji	FIJ
471	Cameroun	CAO	481	Gabon	GAB
020	Canada	CAN	420	Gambia	GAM
482	Central African Republic	CEN	265	Germany/Dem. Rep.	GME
			255	Germany/Fed. Rep.	GMW
780	Ceylon (now Sri Lanka)	CEY	452	Ghana	GHA
			350	Greece	GRC
483	Chad	CHA	054	Grenada	GRE
155	Chile	CHL	090	Guatemala	GUA
710	China, People's Republic of	CHN	438	Guinea	GUI
			445	Guinea-Bissau	PGU
713	China, Republic of	CHT	110	Guyana	GUY
?00	Columbia	COL	041	Haiti	HAI
484	Congo (Brassaville)	COP	091	Honduras	HON
			310	Hungary	HUN
490	Congo (Kinshasa) (now Zaire)	CON	395	Iceland	ICE
			750	India	IND
094	Costa Rica	COS	850	Indonesia	INS
040	Cuba	CUB	630	Iran	IRN
352	Cyprus	CYP	645	Iraq	IRQ
315	Czechoslovakia	CZE	205	Ireland	IRE
434	Dahomey	DAH	666	Israel	ISR
390	Denmark	DEN	325	Italy	ITA
042	Dominican Rep.	DOM	437	Ivory Coast	IVO
130	Ecuador	ECU	051	Jamaica	JAM
651	Egypt (UAR)	UAR	740	Japan	JAP
092	El Salvador	ELS	663	Jordan	JOR
440	Equitorial Guinea (includes Fernando Po)	GUE	501	Kenya	KEN

12

267<

TABLE 1 (Cont'd.)

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
731	Korea/North	KON	770	Pakistan	PAK
732	Korea/South	KOS	095	Panama	PAN
690	Kuwait	KUW	913	Papua, New Guinea	PNG
812	Laos	LAO	150	Paraguay	PAR
660	Lebanon	LEB	135	Peru	PER
570	Lesotho	LES	840	Philippines	PHI
450	Liberia	LIB	290	Poland	POL
620	Libya	LBY	235	Portugal	POR
223	Liechtenstein	LIC	696	Qatar	QAT
212	Luxemburg	LUX	552	Rhodesia	RHO
580	Malagasy	MAG	360	Rumania	RUM
553	Malawi	MAW	517	Rwanda	RWA
820	Malaysia	MAL	331	San Marino	SAN
782	Maldive	MAD	670	Saudi Arabia	SAU
432	Mali	MLI	433	Senegal	SEN
338	Malta	MLT	451	Sierra Leone	SIE
590	Mauritius	MAR	830	Singapore	SIN
435	Mauritania	MAU	520	Somalia	SOM
070	Mexico	MEX	560	South Africa	SAF
221	Monaco	MOC	681	South Yemen	SYE
712	Mongolia	MON	230	Spain	SPN
600	Morocco	MOR	625	Sudan	SUD
698	Muscat and Oman	MOM	572	Swaziland	SWA
921	Nauru	NAU	380	Sweden	SWD
790	Nepal	NEP	225	Switzerland	SWZ
210	Netherlands	NTH	652	Syria	SYR
920	New Zealand	NEW	510	Tanzania	TAZ
093	Nicaragua	NIC	800	Thailand	TAI
436	Niger	NIR	461	Togo	TOG
475	Nigeria	NIG	052	Trinidad-Tobago	TRI
385	Norway	NOR	616	Tunisia	TUN

13

TABLE 1 (Cont'd.)

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
640	Turkey	TUR	328	Vatican	VAT
500	Uganda	UGA	101	Venezuela	VEN
365	USSR	USR	816	Vietnam/North	VTN
675	United Arab Emirates	UAE	817	Vietnam/South	VTS
200	United Kingdom	UNK	990	Western Samoa	WSM
002	USA	USA	678	Yemen	YEM
439	Upper Volta	UPP	345	Yugoslavia	YUG
165	Uruguay	URU	551	Zambia	ZAM

Colonies or Protectorates

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
555	Angola (Port.)	ANG	557	Mozambique (Port.)	MOZ
030	Bermuda (Br.)	BER	556	Southwest Africa	SAW
085	British Honduras	BHO	430	Spanish Sahara	SPS
115	French Guiana	FGU	996	All other Colonies/	
720	Hong Kong (Br.)	HOK		Protectorates	
721	Macao (Port.)	MAC			

International Organizations or Multilateral Groups of Nations

CODE	ENTITY	ABBR.
198	Alliance for Progress	AFP
699	Arab League	ARL
397	European Economic Community (EEC)	EEC
398	European Free Trade Association (EFTA)	EFT
986	International Monetary Fund (IMF)	IMF
993	International Red Cross (IRC)	IRC
396	North Atlantic Treaty Organization (NATO)	NAT
599	Organization for African Unity (OAU)	OAU
199	Organization of American States (OAS)	OAS

TABLE 1 (Cont'd.)

CODE	ENTITY	ABBR.
992	Southeast Asia Treaty Organization (SEATO)	SEA
399	United Nations (only)	UNO
394	Warsaw Pact	WAR
985	World Bank (IBRD, IDA)	WBK
809	Cambodian Government in Exile (Sihanouk, Khmer Rouge)[*a]	CKR
649	Kurds	KUR
818	Vietcong	VCG
697	Arab commando groups (Palestine Liberation Organization, Al Fatah)	PLO
991	International terrorist groups	TER
995	Multinational Corporations[*]	MNC
997	All other international organizations	INT
998	Any other multilateral group	MLG
999	Not stated, unidentified target	NSC

Region Codes

CODE	ENTITY	ABBR.
025	North America/North Atlantic	NAM
060	Caribbean	CAR
099	Central America	CEA
190	South America	SAM
270	West Europe	WEU
280	East Europe	EEU
340	Turkey, Greece, Iran, Cyprus	CTO
379	Scandinavia	SCA
498	Black Africa	BLA
499	White Africa	WHA
692	North Africa	NOA
693	Persian Gulf	PER

[a] Starred codes in this table did not exist for coding 1971-1973 data

TABLE 1 (Cont'd.)

CODE	ENTITY	ABBR.
694	Arab World	ARA
715	South Asia	SAS
819	Southeast Asia	SES
825	South Pacific	SOP
970	Arctic	ARC
971	Antarctic	ANA
972	Pacific Ocean	PAC
973	Atlantic Ocean	ATL
974	Indian Ocean	INO
975	Mediterranean	MED
976	North Sea	NOS
977	China Sea	CHS
978	Baltic	BAL
979	Other European Waters	OEW

SUBNATIONAL ACTORS

This dimension consists of a three-digit subnational actor code listed in Table 2. First the coder identifies who within a country is performing the event and then selects the code for one of the subnational entities listed in Table 2. This list contains over 200 codes.

TABLE 2
SUBNATIONAL ACTORS

001	NATION
020	UNIDENTIFIED PERSON OR GROUP IN NATIONAL GOVERNMENT
	EXECUTIVE
100	Unidentified person or group
101	Chief or head of state (if distinct from chief of government)

TABLE 2 (Cont'd.)

110	Chief of government
111	Personally
119	Other chief of government (e.g., spokesmen for, personal aides to, representatives of)
	Council of ministers or cabinet
120	Unidentified person or group
121	Prime Minister or chairperson (if distinct from chief of government)
125	Other officers
129	Other council of ministers

FOREIGN MINISTRIES, DEPARTMENTS, OR AGENCIES

150	Unidentified person or group
	Foreign affairs or foreign policy ministry
160	Unidentified person or group
161	Secretary or minister of foreign affairs; spokesmen
165	Foreign ambassadors
169	Other foreign affairs
170	Foreign trade ministry (if distinct)

DEFENSE MINISTRY

200	Unidentified person or group
201	Secretary or minister of defense and spokesmen
210	Army, Army staff
230	Navy, Navy staff
250	Air Force, Air Force staff
270	Military intelligence
272	Mixed or undifferentiated forces

279   OTHER FOREIGN MINISTRIES, DEPARTMENTS, AND AGENCIES

281	Foreign intelligence, non-military
285	Border security forces
299	All other foreign ministries

TABLE 2 (Cont'd.)

DOMESTIC MINISTRIES OR DEPARTMENTS

300	Unidentified person or group
302	Agriculture and food
304	Economics, finance, commerce, trade
306	Health, education, welfare
308	Transportation/communications
310	Internal security
312	Justice
313	Natural resources
314	Other domestic ministries
317	National police

GOVERNMENT ENTERPRISES

320	Unidentified person or group
322	Agricultural, fisheries
324	Industrial
326	Trade and science
329	Mixed and other

399   OTHER EXECUTIVE BRANCH

LEGISLATIVE

400	Unidentified person or group
402	Officers of
404	Committees and commissions

Regionally or organizationally representative legislature

420	Unidentified person or group
422	Officers of
424	Committees and commissions

Population representative legislature

440	Unidentified person or group
442	Officers of
444	Committees and commissions
479	Other national legislative organizations

18

TABLE 2 (Cont'd.)

JUDICIAL

480	Unidentified person or group
482	Supreme Court, highest tribunal
489	Other

499   MIXED AND OTHER NATIONAL GOVERNMENT

REGIONAL GOVERNMENT

500	Unidentified person or group
510	Executive
530	Legislative
578	Judicial
579	Mixed and other regional government

LOCAL GOVERNMENT

580	Unidentified person or group
582	Executive
588	Legislative
594	Judicial
599	Mixed and other local government

ORGANIZATIONS

700	Parties
701	Unidentified person or group
702	Ruling party
703	Leftist/Socialist/Communist
704	Periodic congresses or conventions
705	National or central committees
706	Chairman, spokesman, delegation
601	Left faction*[a]
602	Right faction*
707	Other

---

[a] Starred codes in this table did not exist for coding 1971-73 data.

19

TABLE 2 (Cont'd.)

708	Centrist
709	Periodic congresses or conventions
710	National or central committees
711	Chairman, spokesman, delegation
603	Left faction*
604	Right faction*
712	Other
713	Rightist/Fascist
714	Periodic congresses or conventions
715	National or central committees
716	Chairman, spokesman, delegation
605	Left faction*
606	Right faction*
717	Other
718	Opposition party
719	Leftist/Socialist/Communist
720	Periodic congresses or conventions
721	National or central committees
722	Chairman, spokesman, delegation
607	Left faction*
608	Right faction*
723	Other
724	Centrist
725	Periodic congresses or conventions
726	National or central committees
727	Chairman, spokesman, delegation
609	Left faction*
610	Right faction*
728	Other
729	Rightist/Fascist

20

TABLE 2 (Cont'd.)

730	Periodic congresses or conventions
731	National or central committees
732	Chairman, spokesman, delegation
611	Left faction*
612	Right faction*
733	Other
734	Ruling coalitions
735	Leftist/Socialist/Communist
736	Periodic congresses or conventions
737	National or central committees
738	Chairman, spokesman, delegation
613	Left faction*
614	Right faction*
739	Other
740	Centrist
741	Periodic congresses or conventions
742	National or central committees
743	Chairman, spokesman, delegation
615	Left faction*
616	Right faction*
744	Other
745	Rightist/Fascist
746	Periodic congresses or conventions
747	National or central committees
748	Chairman, spokesman, delegation
617	Left faction*
618	Right faction*
749	Other
750	Opposition coalitions
751	Leftist/Socialist/Communist

21

TABLE 2 (Cont'd.)

752	Periodic congresses or conventions
753	National or central committees
754	Chairman, spokesman, delegation
619	Left faction*
620	Right faction*
755	Other
756	Centrist
757	Periodic congresses or conventions
758	National or central committees
759	Chairman, spokesman, delegation
621	Left faction*
622	Right faction*
760	Other
761	Rightist/Fascist
762	Periodic congresses or conventions
763	National or central committees
764	Chairman, spokesman, delegation
623	Left faction*
624	Right faction*
765	Other
766	Other
768	INSURGENTS AND POLITICAL TERRORISTS
769	OTHER ORGANIZATIONS
	ECONOMIC ORGANIZATIONS
	Producers of goods and services
770	Unidentified person or group
772	Agricultural, fishing
774	Industrial
	Trade and Service

22

TABLE 2 (Cont'd.)

776	Unidentified person or group
777	Scientific and technical
781	Artistic
785	Educational
	Non-governmental media
790	Unidentified person or group
791	Broadcast
793	Press
798	Other
799	Other
810	Trade or labor unions
820	Trade associations

830	OTHER ECONOMIC ORGANIZATIONS
	RELIGIOUS ORGANIZATIONS
850	Unidentified person or group
852	Christian
853	Catholic
354	Protestant
856	Jewish
858	Hindu
860	Buddhist
862	Moslem
863	Other

870	ETHNIC/TRIBAL ORGANIZATIONS
875	WOMEN'S ORGANIZATIONS
891	STUDENTS' ORGANIZATIONS
892	FOREIGN REFUGEE/RESIDENT ORGANIZATIONS
893	CULTURAL, FRIENDSHIP ASSOCIATIONS, GROUPS

TABLE 2 (Cont'd.)

899   OTHER ORGANIZATIONS

INDIVIDUALS AND GROUPS OF INDIVIDUALS NOT CONSTITUTING A FORMAL ORGANIZATION

POLITICAL

900   Pro-government
901   Leftist/Socialist/Communist
902   Centrist
903   Rightist/Fascist
904   Opposition
905   Leftist/Socialist/Communist
906   Centrist
907   Rightist/Fascist
908   Other

ECONOMIC/OCCUPATIONAL

912   Agricultural, fishing
913   Industrial
914   Workers in general
915   Management
        Trade and Service
916   Scientists and engineers
918   Artists, writers, musicians
920   Educational (administrative, teachers)
922   Press
929   Other

RELIGIOUS

930   Christian
931   Catholic
932   Protestant
945   Jewish
937   Hindu
939   Buddhist

24

TABLE 2 (Cont'd.)

941   Moslem

949   Other

<u>951</u>   ETHNIC/TRIBAL

<u>955</u>   RACIAL

<u>958</u>   WOMEN

<u>971</u>   YOUTH UNDER ?0

<u>973</u>   UNDIFFERENTIATED "INTELLIGENCIA"

<u>975</u>   APPARENTLY UNORGANIZED AND SPONTANEOUS

<u>976</u>   PEOPLE AS A WHOLE; PUBLIC IN GENERAL

<u>981</u>   INDIVIDUALS

<u>983</u>   FORMER "HIGH-RANKING" GOVERNMENT OFFICIALS

<u>985</u>   SPECIFIC AREA OR REGION

<u>998</u>   FOUR OR MORE PERSONS/GROUPS

<u>999</u>   OTHER, NOT SPECIFIED TARGET

EVENT CODES

Event codes consist of three parts: the <u>character</u> of the event, the <u>type</u> of event, and the <u>length</u> of the event. The character of the event is a one-digit code that specifies whether the event is international, non-interactive, or domestic (actual or rumored). Coders select the character code, then select the event code under the appropriate character (international, non-interactive, or domestic). (See Table 3.) INTERNATIONAL EVENTS ARE ALWAYS CODED FROM <u>INTERNATIONAL EVENT CODES (011-236)</u>; NON-INTERACTIVE EVENTS FROM <u>NON-INTERACTIVE EVENT CODES (401-423)</u>; AND DOMESTIC EVENTS FROM <u>DOMESTIC EVENT CODES (601-751)</u>.

25

TABLE 3

EVENT CODES

Code	Character of Event
1	**International (Actual Event)** An international event is one that occurs across national boundaries, that is, involving two or more nations.
2	**Domestic (Actual Event)** A domestic event is one that occurs within national boundaries, that is, involving two or more groups or individuals within one nation.
3	**Non-Interactive (Actual Event)** A non-interactive event is a specific historical event that does not involve two parties, e.g., the death of a political figure.
4	**International (Rumored Event)** [a] An international event which is mentioned or announced but which has not yet actually occurred.
5	**Domestic (Rumored Event)** [a] A domestic event which is mentioned or announced but which has not yet actually occurred.
6	**Non-Interactive (Rumored Event)** [a] A non-interactive event which is mentioned or announced but which has not yet actually occurred.

INTERNATIONAL EVENTS

1.   YIELD

011   Surrender; yield to order; submit to arrest

012   Yield position; retreat; evacuate; surrender possessions

013   Admit wrongdoing; retract statement

014   Apologize *b

015   Yield to pressure from; demands of

---

[a] This code added for coding 1974 data.

[b] Starred events in this table are event codes added to the WEIS system from DECS.

TABLE 3 (Cont'd.)

2. COMMENT

021   Explicit decline to comment

023   Neutral comment on situation[c]

025   Neutral explanation of policy or future position[d]

026   Positive comment on situation; statement implies a positive position with respect to a situation; implies that the existing situation or policy position is satisfactory[e]

027   Negative comment on situation; statement implies a negative position with respect to a situation; implies that the existing situation or policy position is unsatisfactory[e]

3. CONSULT

031   Meet with at neutral site; send note

032   Visit; go to

033   Receive visit; host

4. APPROVE

041   Praise, hail, applaud; express condolences, ceremonial greetings, thanks

042   Endorse other's policy or position; give verbal support

043   Physically demonstrate in support of*

5. PROMISE

051   Promise own policy support

052   Promise material support

053   Promise other future support action

054   Assure, reassure

055   Promise information to*

---

[c] For coding 1971-73 data, code 023 was "Comment on situation; express hope, concern, fear."

[d] For coding 1971-73 data, code 025 was "Explain policy or future position."

[e] This code did not exist for coding 1971-73 data.

TABLE 3 (Cont'd.)

6.   GRANT

061   Express regret

062   Give state invitation

063   Grant asylum

064   Grant privilege, diplomatic recognition, de facto relations; send ambassador to unoccupied post

065   Suspend negative sanctions; truce; cease-fire

066   Release and/or return persons or property

067   Increase number of consulates in*

068   Establish a legation in*

069   Open an embassy in; increase embassy personnel*

7.   REWARD

071   Extend economic aid (gift and/or loan)

072   Extend military assistance; joint military exercise

073   Give other assistance

075   Give friendly warning, implicit warning. Statement that another party should or ought to do something. Expresses hope that another party will do something, or fear or concern of consequences if something is not done. Implies a preferred policy position, or that another party should change its behavior or position. f

8.   AGREE

081   Make substantive agreement

082   Agree to future action or procedure; agree to meet, to negotiate; accept state invitation

083   For an agreement to go into effect*

084   For an agreement to expire

9.   REQUEST

091   Ask for information

---

f This code did not exist for 1971-73 data. For coding 1971-73 data code 074 was "Give non-threatening (friendly) notice of impending or possible harm to*."

TABLE 3 (Cont'd.)

092   Ask for policy assistance; seek help

093   Ask for material assistance

094   Request action; call for; ask for asylum

095   Entreat; plead for; emotional appeal to

096   Request granting of rights and/or privileges

10.   PROPOSE

101   Offer proposal

102   Urge or suggest policy or action

11.   REJECT

111   Turn down proposal; reject protest, demand, threat, etc.

112   Refuse; oppose; refuse to allow; exclude; fail to reach agreement

113   Refuse to give information to*

114   Refuse to give certain rights and privileges to*

115   Refuse to give, or refuse to accept, tangible or material support*

12.   ACCUSE

121   Charge; criticize; blame; disapprove

13.   PROTEST

131   Make complaint (not formal)

132   Make formal complaint or protest

14.   DENY

141   Deny an accusation, attributed policy, action, role, or position

15.   DEMAND

150   Issue order or command; insist; demand compliance; etc

16.   WARN

162   Give hostile warning; explicit warning of necessary policy change[g]

---

[g] This code did not exist for 1971-73 data. For coding 1971-73 data,
code 160 was "Give warning".

TABLE 3 (Cont'd.)

17.   THREATEN

171   Threaten without specific negative sanctions

172   Threaten with specific non-military negative sanctions

173   Threaten with force specified

174   Threaten with negative sanctions and time limit specified; ultimatum

18.   DEMONSTRATE

181   Non-military demonstration; walk out on; boycott

182   Armed force mobilization, exercise, and/or display; blockade

183   Attempt to cause physical destruction*

19.   REDUCE

191   Cancel or postpone planned event; withdraw offer

192   Reduce routine international activity; recall officials; etc.

193   Reduce or suspend aid or assistance; permanently withhold

194   Halt negotiations

195   Break diplomatic relations; declare independence from

196   Increase number or severity of legal barriers on*

197   Decrease the number of consulates in*

199   Expressly terminate (or violate) an agreement with*

20.   EXPEL

201   Order personnel out of country; deport

202   Expel organization or group

21.   SEIZE

211   Seize position or possessions

212   Detain or arrest person(s)

213   Intrude upon the property or territory of*

22.   FORCE

221   Non-military destructive act

222   Military injury-destruction; bomb

223   Military engagement

TABLE 3 (Cont'd.)

23.   ORGANIZATIONAL AFFAIRS*

231   Establish a new organization

232   Abolish an old organization

233   Reorganize or alter the composition of an existing organization

234   Join

235   Withdraw from membership in

236   Revoke or suspend the membership of; expel

NON-INTERACTIVE EVENTS*

40.   PERSONAL HEALTH

401   Personal accident (of important person) which affects ability to
       govern or act

402   Become ill in such a way as to affect ability to govern or act

403   Recover

404   Injure in an assassination attempt

405   Important political person's death from natural causes

41.   PREPAREDNESS

411   Increase the recognized "readiness" of an organization; to go on alert

412   Decrease the recognized "readiness" of an organization; to discontinue
       an alert

42.   CURRENCY

421   Officially increase the value of one's own currency in terms of
       other currencies

422   Officially decrease the value of one's own currency in terms of
       other currencies

423   Other

DOMESTIC EVENTS

Government Structure, Personnel

60.   REGULAR STRUCTURAL CHANGE

601   Regular power transfer

602   Regular executive transfer

603   Renewal of executive tenure

786

31

TABLE 3 (Cont'd.)

61. PERSONNEL CHANGE

611   Appointment of politically significant person

612   Resignation of politically significant person

613   Dismissal of politically significant person

62. IRREGULAR STRUCTURAL CHANGE

621   Irregular power transfer or purge

622   Dissolution of legislature

623   Fall of cabinet; removal from office

624   Coup d'etat

625   Revolution

Political Participation

63. PHYSICAL PROTEST, NO VIOLENCE

631   Political or general strike

632   Economic or other strike

633   Boycott

634   Anti-demonstration

635.   Attempted coup

636.   Seizure of government property

637   Seizure of government personnel

638   Symbolic protest; demonstration

639   Defection

64. PHYSICAL PROTEST, VIOLENCE

641   Assassination

642   Attempted assassination

643   Symbolic demonstration or suicide

644   Riot

645   Mutiny

646   Sabotage

647   Terrorism or armed attacks

648   Guerrilla warfare

649   Civil war

TABLE 3 (Cont'd.)

65. PHYSICAL EXPRESSIONS OF SUPPORT

651   Pro-demonstration

652   Symbolic demonstration of support

66. ELECTIONS

661   Hold elections

662   Schedule elections

663   Cancel or postpone elections

67. EXPRESS VERBAL SUPPORT

671   Approve; endorse; praise; thanks

672   Promise

673   Agree to future action; agree to meet

674   Formal agreement

676   Give friendly warning, implicit warning. Statement that another party should or ought to do something. Expresses hope that another party will do something, or fear or concern of consequences if something is not done. Implies a preferred policy position, or that another party should change its behavior or position[h]

68. GRANT SUPPORT

681   Grant

682   Reward

683   Yield; apologize

69. GENERALLY SUPPORTIVE ACTIVITY

690   Implement new policy[i]

691   Request

692   Propose; urge

693   Explain neutral policy[j]

---

[h] This code did not exist for coding 1971-73 data. For coding 1971-73 data, code 675 was "Give friendly warning."

[i] This code did not exist for coding 1971-73 data.

[j] For coding 1971-73 data, code 693 was "Explain policy."

33

TABLE 3 (Cont'd.)

694   Meet with

695   Refuse comment

696   Make neutral general comment[k]

697   Positive comment on situation; statement implies a positive position with respect to a situation; implies that the existing situation or policy position is satisfactory[l]

698   Negative comment on situation; statement implies a negative position with respect to a situation; implies that the existing situation or policy position is unsatisfactory[l]

699   Suggest new future policy[l]

70.   EXPRESS VERBAL HOSTILITY

701   Reject; refuse; oppose

702   Accuse; charge; denounce

703   Protest; complain

704   Deny

705   Demand; insist

707   Threaten

708   Give hostile warning; explicit warning[m]

71.   REDUCE RELATIONSHIP

711   Cancel; postpone planned event

712   Reduce routine relationship, activity

713   Reduce or suspend aid or assistance

714   Halt negotiations, talks

715   Terminate or violate an agreement

Relationship Between Ruler and Ruled

72.   GOVERNMENTAL SANCTIONS, NON-VIOLENT

721   Sanctions against organization or group (non-governmental)

---

[k] For coding 1971-73 data, code 696 was "Make general comment; express hope, concern, fear."

[l] This code did not exist for coding 1971-73 data.

[m] This code did not exist for coding 1971-73 data. For coding 1971-73 data, code 706 was "Warn."

TABLE 3 (Cont'd.)

722   Ban demonstration

723   Outlaw political group

724   Order to halt strike, boycott, protest

725   Declare martial law or state of emergency

726   Political arrest

727   Curtail press freedom

728   Exile

73.   GOVERNMENTAL SANCTIONS, VIOLENT

731   Execute

732   Attack crowd; produce injuries or death

733   Produce injury or death to individual not in crowd

74.   GOVERNMENTAL RELAXATION OF RESTRICTIONS

741   Lift martial law; state of emergency

742   Relaxation of sanctions or other restrictions

743   Release persons or property

75.   OTHER

751   Change in laws or constitution

The event length classification code shown in Table 4 is used to determine
the length of time over which an event occurs. Most events occur and are
completed in one day--therefore they are discrete (coded 1). Some events,
such as negotiations, continue over time (coded 3). Others, such as an
increase (coded 5) or decrease (coded 6) of military activity, are distinct
changes in activity levels already underway.

TABLE 4
EVENT LENGTH CODE

CODE	MEANING
1	Brief, discrete activity lasting less than one calendar day
2	Distinct beginning of an activity that lasts more than a calendar day
3	Continuation of an activity already underway

TABLE 4 (Cont'd.)

CODE   MEANING

4   Distinct ending of an activity already underway
5   Distinct increase in an ongoing activity
6   Distinct decrease in an ongoing activity
7   Activity to begin in future[a]
0   Unknown; not specified

First (Direct) International Target

The first international target is the country, group, region, or international organization to whom the event is directed. If there is r direct target, the target code is "999" (non-directional). If there are more than three direct targets, the target code is "998" (multilateral group). For 1971-73 data, if the event was domestic, it was coded "0" in the furthest right-hand column of the category (column 21). For 1974 data, if the event was domestic, the country code was inserted here.

First (Direct) Subnational Target

The first subnational target is the person or group to whom the event is directed.

Second (Indirect) International Target

The second international target is any second country, group, region, or international organization about which the event occurs. For example, if Afghanistan is complaining to the Soviet Union about Albania's rearmament policy, Albania would be the second international target. There is not always a second international target. When there is none, "0" is placed in the furthest right-hand column (column 28) of the second international target field.

---

[a] This code did not exist for 1971-73 data.

36

Second (Indirect) Subnational Target

The second subnational target is any second person or group about whom the event occurs. Again, there is not always a second subnational target. When there is none, "0" is placed in the furthest right-hand column (column 32) of the second subnational target field.

SUBJECT CODES

Subject codes are general descriptive categories that may be applied to each event. The list of subject codes includes five major areas: economic, social, political, science and technology, and military. Under each of these major areas there is a list of categories that might be applied to international or domestic events. A maximum of three applicable subject codes may be applied to each event. If there are more than three applicable subject codes, only the two major subject codes are coded, followed by "999." ALWAYS CODE TO THE FURTHEST RIGHT-HAND COLUMNS (COLUMNS 39-41) UNDER "SUBJECT CODE." Table 5 lists the subject codes.

TABLE 5

GENERIC SUBJECT RETRIEVAL CODES

CODE   SUBJECT

ECONOMIC

International

100	Trade
110	Trade agreements
111	Amounts and directions; trends; composition
112	Quotas
113	Tariffs

37

TABLE 5 (Cont'd.)

119	Other
120	Finance
121	Balance of payments
122	Exchange rates; policies; mechanisms; and institutions for adjustment
129	Other finance
130	Investment
131	Business
132	Government (aid)
133	Economic aid
134	Technical aid (teams, technicians)
139	Other
140	Energy
141	Business
142	Government
143	Other
145	International labor relations
146	Transportation and communication
148	Development of resources
149	Other

Internal

150	Growth and development
151	GNP; national income; levels and composition
152	Investment
153	Production
154	Industrialization; growth of technology
155	Energy
156	Development of resources
160	Manpower
161	Craft and trade unions
169	Other
170	Problems
171	Inflation; price levels; wage rates

38

TABLE 5 (Cont'd.)

172   Unemployment and underemployment

173   Regional problems

179   Other

180   Government policies

181   Fiscal; budget

182   Monetary; banking, federal reserve

190   Other (none of the above)

SOCIAL

200   International

211   Migration

212   Personal travel; unofficial visits

213   Cultural relations

214   Ecology; pollution

215   Narcotics; crime

240   Other

250   Internal

251   Religion

252   Narcotics; crime

253   Education

254   Health

255   Personal travel

256   Social unrest

257   Ecology; pollution

258   Other; social welfare; quality of life

POLITICAL

300   International

311   Laws; treaties; negotiations

312   General relations of states

313   Diplomatic/consular affairs

314   International organizations, memberships and activities

39

TABLE 5 (Cont'd.)

315	Formal alliances, political/military/economic
316	General reduction of violence (war, terrorism); cease-fire
318	Border disputes
319	Territorial waters
320	Airspace
321	Military conflict
322	Territory; territorial affairs
323	International terrorism
340	Other

350   Internal

351	Civil rights; voting; democratic processes
352	Political parties; movements
353	Judicial processes, administration of justice
355	Internal security (police action, activity)
356	Insurgent or guerrilla activity
357	Government structure (change of)
358	Government personnel (appointments; change of)
359	Government policy

SCIENCE AND TECHNOLOGY

400   International

411	Medical transfer
412	Agriculture; fisheries
413	Natural resources
414	International communications
415	Military technology
416	Industrial technology
417	Nuclear development
418	Space research
419	General technological transfer
440	Other

449   Internal

TABLE 5 (Cont'd.)

450	Military related
451	Missile research
452	Nuclear weapons research
453	Chemical and biological weapons research
454	New and unconventional weapons research
479	Other
480	Non-military related
481	Space research
482	Nuclear reactors, nuclear materials
483	Medical research
484	Agriculture; fisheries
485	Natural resources
486	Communications
490	(Pure) Scientific research

MILITARY

500   Strategic Nuclear Forces

501	Force levels
502	Procurement of weapons; expenditures
505	Deployment; transit; base rights; logistics
510	Training and readiness
549	Other

550   General Purpose Forces

551	Force levels
552	Procurement of new weapons; expenditures
553	Mobilizations; deployments
555	Transit; locations; base rights; etc.
560	Training and readiness
570	International military aid (including training, equipment, troops)
571	Military sales transfers
599	Other

41

TABLE 5 (Cont'd.)

OTHER

900   Other; general

MORE THAN THREE OF THE ABOVE

999   More than three of the above subjects involved

ISSUE CODES

TABLE 6

ISSUE-AREAS[a]

1.   Territorial Area
2.   Human Resources Area
3.   Nonhuman Resources Area
4.   Status Area
9.   None of above or unclear

TABLE 7[b]

ISSUES REGARDING JAPAN

Japanese-U.S. Relations

1001   JAP should not continue to permit USA bases on her soil.

1003   Okinawa should revert to JAP.

1004   The USA should not have nuclear devices on its bases in Okinawa.

1005   The USA should not have poisonous gases on its bases in Okinawa.

1006   USA bases in JAP should not be allowed to receive ships which
        are carrying nuclear weapons.

---

[a]   Suggested by Rosenau (1966).

[b]   Issues are expressed in terms of non-status quo propositions. New issues
will be added to the current list as they arise.

257<

TABLE 7 (Cont'd.)

Japanese-U.S. Relations (cont'd.)

1007   The USA should withdraw completely from the Ryukyus.

2001   JAP and the USA should not retain a security treaty for mutual defense.

2002   The USA should withdraw from Vietnam/Indochina.

3001   JAP should not provide support for USA troops during the Vietnam war.

3009   The JAP should finance part of the USA military which defends JAP.

3014   The USA should place no limits on the export of technology to JAP.

3016   JAP investment in the USA should be reduced.

3020   The USA should grant JAP more trade concessions.

Japanese-Soviet Relations

1002   The USR should return the Northern Territories to JAP.

2005   USR and JAP should form a collective security system in Asia.

3004   There should be increased trade between JAP and the USR.

3005   The USR should permit JAP fishermen in the waters of the Northern Island.

3006   JAP should be involved in the development of the USR oil and gas.

3007   JAP should be involved in the development of USR timberlands.

3029   JAP should cooperate with USR in Siberian development

4007   The USR should conclude a peace treaty with JAP.

9003   JAP and the USR should expand the air routes between the two countries.

Japanese-Middle Eastern Relations

2003   JAP should take an active role in seeking a Mideast settlement.

3008   JAP should not invest (financially and technologically) in the Middle East.

3018   JAP should support the Arabs in the Middle East.

3025   JAP should extend economic/technical aid to Arab nations.

4009   JAP should break diplomatic relations with ISR.

TABLE 7 (Cont'd.)

Japanese-Chinese Relations

2006   CHN, USA, and JAP should form a collective security system in Asia.

2007   CHN and JAP should form a collective security system in Asia

3002   JAP should increase trade with CHN.

3026   JAP should extend economic/technical aid to CHN.

4003   JAP should recognize CHN and establish diplomatic relations.

4004   CHN should be represented in the U.N.

4005   CHT should be excluded from the U.N.

4006   JAP should cease diplomatic relations with CHT.

9007   JAP should conclude Civil Air Agreement with CHN.

9008   JAP should conclude private air agreement with CHT.

Japanese-Asian/Southeast Asian Relations

1008   JAP should support KON-KOS reunification.

2008   JAP should intervene to secure civil rights for KOS citizens and foreign nationals residing in KOS.

3003   JAP should not invest in INS oil resources.

3015   JAP should increase its investment in VTN.

3017   JAP investment in AUL should be reduced.

3019   JAP and KON should increase trade.

3021   JAP should increase investment in Southeast Asia.

3022   JAP should import more from Southeast Asia to adjust JAP balance of payments.

3023   JAP should import more from Asia to adjust JAP balance of payments.

3030   JAP should decrease economic involvement in KOS.

3031   JAP should not ratify JAP-KOS Continental Shelf Agreement.

4001   JAP should establish diplomatic relations with VTN.

4002   JAP should establish diplomatic relations with KON.

4008   JAP should recognize Prince Sihanouk's government-in-exile as rightful government in CAM, and break relations with Lon Nol regime.

9001   An international conference should be held to discuss the Vietnam war.

9002   CAM should be a neutral nation.

TABLE 7 (Cont'd.)

Japan-Economic Issues

3010   There should be a JAP textile export quota.

3011   JAP should reduce import quota.

3012   JAP should revalue upward its currency.

3013   JAP should reduce its capital investment overseas.

3024   JAP should increase trade and/or economic investment with EEC.

3027   JAP should lower fishing quotas in the Northwest Pacific.

3028   JAP should participate in the development of the North Sea oil resources.

3032   JAP should make bilateral agreements with oil-producing nations.

3033   JAP should increase economic involvement with Eastern European countries.

3034   JAP should increase economic involvement with Latin American countries.

9004   JAP should adhere to international trade agreements (e.g., Kennedy round).

Japan-Nuclear Issues

2004   JAP should ratify the Non-Proliferation Treaty.

9006   JAP should develop a nuclear capability.

9009   JAP should not permit nuclear-powered vessels in her ports.

Japan-Self Defense

9005   JAP should rebuild its military power beyond the "self-defense" state.

Other Issues

1009   Senkakyu Island should be returned to JAP.

THE ISSUE POSITION CODE

The current definition of "issue" is built around the idea of a condition which, in the view of an actor, should or should not exist. Some acts express a preference for or against the condition at issue. The issue position code records such a position as either supporting (code = 1) or opposing (code = 2) the non-status quo proposition. As a convention, positions on the non-status quo condition will be recorded. For example,

45

on the Okinawa issue, the position is recorded in terms of opposition to or support for a quota.

Each issue in Table 7 is stated in terms of a non-status quo proposition in order to facilitate issue-position coding. THE CODER GIVES AN ISSUE POSITION CODE OF "1" IF THE EVENT SUPPORTS THE PROPOSITION; A CODE OF "2" IF THE EVENT OPPOSES THE PROPOSITION; AND A CODE OF "0" IF THERE IS NO EVIDENCE OF OPPOSITION OR SUPPORT. IF THERE IS NO ISSUE, "00" IS CODED IN COLUMNS 49-50. If a position is coded 1 or 2, the event must explicitly express a position; that is, contain a statement of or express a belief, request, or demand that the condition should or should not exist.

SOURCE CODE

This is a one-digit code for the data source. This code for FBIS is 2.

IV. TEXTUAL ABSTRACT

For each coded event there is a complete one sentence description of the event that gives the unique aspects of the event that analytic coding obscures.[6] It is not a verbatim translation of the analytic code; rather, it specifically provides more information about the event reported in the coding source. A single descriptive sentence, however, may follow several coded events; but more than one descriptive sentence should never follow analytically coded (numeric) events.

A number of conventions have been developed by the World Event/Interaction Survey (WEIS) for constructing the description. First, all nations named in the article should be mentioned in the event description. Whenever a nation is mentioned, its 3-letter alphabetic code is used. This enables the computer programs to scan the text for events not obtainable by analytic retrievals. For this reason, it is necessary to keep the descriptive codes for a conference, agreement, or negotiations the same. For example, the word-set "European Security Conference" must be used for any event that involves this conference in any way because there is no analytic code that signifies the European Security Conference. If it is typed the same way every time it is mentioned in an event, the TEXSCAN program can pick out the events in which it is important.

The first words of a description should identify the actor (3-letter alpha codes only), the subactor, and the last name of the subactor if stated in the article.

Example:	United States	President	Nixon
becomes:	USA	PRS	Nixon

---

[6] This section is abstracted from Truesdell (1973).

Example: United Nations   General Assembly
becomes: UNO   GA

The event should not be stated as its DECS code name but according to the wording of the article. Example: <u>002 121 365</u> should not mean: USA SST Rogers criticizes USR. It should be stated: USA SST Rogers says USR system of government cares not at all for its citizens.

Targets use the same convention as actors. The 3-letter alpha code of the target nation is used; if the event is directed at a specific subtarget, the target's office and name are mentioned.

USA VP Agnew arrives for 2-day visit in USR and is greeted
by USR PRS Podgorny and FM Gromyko

The description can include any form of punctuation. Periods at the end of the sentence are not necessary and have not been used previously. If a proposal or agreement is the event, the specific points should be mentioned. Likewise, the specific points reflected by one nation in another nation's proposal should be included. The names and locations of battles, seized positions, surrenders, meetings, and demonstrations are also included. For example, the towns and their distances from major cities are usually given in IDO battle reports. Therefore this information should be included. Also, in the Vietnam bombings and engagements, <u>one</u> double-coded engagement is coded for the nation in which numerous engagements actually took place. In the description, the actual number and location of battles are mentioned. Thus, the description would read: VTS and VTN forces fight 250 battles centered at My Lai, Danang, Quangtri City, and Pleiku, VTS.

The important consideration in constructing descriptions is to make each a single complete sentence, no longer than three lines, and totally comprehensible to a reader 5 years hence. Thus, each description must contain enough information for the event to be understood.

48

Abbreviations are used wherever possible (e.g., RELNS for Relations). Also, numerals are used instead of words (e.g., 8 for eight). The sentence must not exceed 3 lines of 51 columns due to computer storage limitations.

TABLE 8

DESCRIPTIVE ACRONYMS

PRS	President
PRM	Premier
PM	Prime Minister
FM	Foreign Minister
SST	Secretary of State
DOS	Department of State
SOD	Secretary of Defense
DOD	Department of Defense
VP	Vice President
JMC	Joint Military Commission in South Vietnam (VTS, VTN, USA, VCG)
ICS	International Commission for Supervision of the Cease-Fire in Vietnam
ICC	International Control Commission
OPEC	Organization of Petroleum Exporting Countries
ICJ	International Court of Justice
CHRMN	Chairman
SG	Secretary General
AMB	Ambassador
ADV	Advisor
PRS ADV	Presidential Advisor
CP SEC	Communist Party officials
GEN	General
ASST	Assistant
DEP	Deputy
GOVT	Government
REP	Representative
ADM	Administration
SPKM	Spokesman

304<

TABLE 8 (Cont'd.)

GA	General Assembly
SC	Security Council
CMW	Commonwealth
LDP	Japan Liberal Democratic Party
JCP	Japan Communist Party
DEM-SOC	Japan Democratic Socialist Party
JSP	Japan Socialist Party
HSE of C	Japan House of Councillors
MBFR	Mutual Balanced Force Reduction
ESC	European Security Conference

305<

BIBLIOGRAPHY

AZAR, E.A. (1970) "Conflict and Peace Data Bank: A Codebook." University
of North Carolina Studies of Conflict and Peace.

AZAR, E.A., T. JUKAM, and J. McCORMICK (1969) "A Quantitative Comparison
of Source Coverage for Events Data: Preliminary Findings." Michigan
State University, Cooperation/Conflict Research Group.

BANKS, A.S. (1972) "The SUNY-Binghamton Cross-National Time-Series Data
Archive: Variable Definitions and Sources." Technical Report No. 2,
State University of New York, Binghamton.

BURROWES, R. and B. SPECTOR (1972) "The Strength and Direction of Relation-
ships Between Domestic and External Conflict and Cooperation: Syria,
1961-67." In Jonathan Wilkenfeld (ed.), Conflict Behavior and Linkage
Politics. New York: David McKay Company, Inc.

COPLIN, W., S.L. MILLS, and M.K. O'LEARY (1973) "The PRINCE Concepts and
the Study of Foreign Policy." In Patrick J. McGowan (ed.), The Inter-
national Yearbook of Foreign Policy Studies. Beverly Hills: Sage
Publications.

FEIERABEND, I. and R. FEIERABEND (1968) Political Events Project Codebook.
International Data Archive, University of Michigan.

FITZSIMMONS, B., G. HOGGARD, C. McCLELLAND, W. MARTIN, and R. YOUNG (1969)
"World Event/Interaction Survey Handbook and Codebook." World Event/
Interaction Survey, Technical Report 1, University of Southern
California, January.

HERMANN, C. (1970) "What is a Foreign Policy Event?" Princeton University.

HOLT, J.T. (1973) "The Defense Events Coding System." Arlington, VA:
CACI, Inc. (Mimeographed)

LENG, R.J. (1972) "Problems in Events Data Availability and Analysis."
Paper prepared for presentation at the Annual Meeting of the New
England Political Science Association, Kingston, Rhode Island.

McCLELLAND, C.A. (1966) Theory and The International System. New York:
Macmillan Co.

McGOWAN, P.A. (1970) "The Unit-of-Analysis Problem in the Comparative Study
of Foreign Policy." Syracuse University.

MOORE, J., M. MAXFIELD and B. HUGHES (1973) "Quantitative Indicators for
Defense Analysis: Issue-Level Indicators." Arlington, Va.: CACI, Inc.

51

ROSENAU, J.N. (1966) "Pre-theories and Theories of Foreign Policy." In
R.B.Farrell (ed.) Approaches to Comparative and International Politics.
Evanston: Northwestern University Press.

ROSENAU, J.N. (1964) "Internal War as an International Event." In James N.
Rosenau (ed.) International Aspects of Civil Strife. Princeton, NJ:
Princeton University Press.

ROSENAU, J.N. (1968) "The Concept of Intervention." Journal of International
Affairs, Vol. XXII, 2, pp. 165-176.

RUMMEL, R.J. (1963) "Dimensions of Conflict Behavior Within and Between
Nations." General Systems Yearbook 8: 1-50.

SMITH, R.F. (1969) "On the Structure of Foreign News: A Comparison of the
New York Times and the Indian White Papers." Journal of Peace Research
6: 23-36.

SULLIVAN, J.D. (1969) "International Consequences of Domestic Violence:
Cross-National Assessment." Paper presented at the Annual Meeting
of the American Political Science Association, New York.

TANTER, R. (1966) "Dimensions of Conflict Behavior Within and Between Nations,
1958-60." Journal of Conflict Resolution 10 (March): 41-64.

TAYLOR, C.L., and M.C. HUDSON (1970) World Handbook of Political and Social
Indicators II. New Haven: Yale University Press.

TILLY, C. (1973) "Collective Violence in European Perspective" in I.K.
Feierabend, et al., (eds.) Anger, Violence, and Politics. Englewood
Cliffs: Prentice Hall.

TRUESDELL, T. (1973) World Event/Interaction Survey WEIS History and Code-
book. Arlington, Va.: CACI, Inc.

WILKENFELD, J. (ed.) (1972) Conflict Behavior and Linkage Politics. New York:
David McKay Company, Inc.

The following list of Japanese issues, goals, and problems that affect
the nature and direction of its international and internal behavior has
been culled from the literature on Japan which was published between
1970 and the present. It represents the major issue areas demanding the
attention of Japanese experts and policy-makers.

A. Issues in U.S.-Japanese Relations:

1. Modification of political, military, and economic relations.

2. U.S. demands for voluntary limitations on textile exports to the United States.

3. Global cooperation between Japan and the United States.

4. Potential conflict with the United States over markets and raw materials.

5. Status of U.S. bases in Japan.

6. Status of U.S.-Japanese Security Treaty.

B. Issues in Soviet-Japanese Relations:

1. Peace treaty (linked to and confounded by territorial issue).

2. Territorial dispute over four northern islands (Shikotan, Habomai group, Etorofu and Kunashiri) (source of fish for Japan, and military airfields and harbor).

3. Siberian development (raw materials, resources).

4. Japan's security vis-a-vis the Soviets and Chinese.

5. Fishing negotiations.

C. Issues in Sino-Japanese Relations:

1. Japanese concessions over relations with South Korea and Taiwan (in terms of defense and investment).

2. Japan's security problems (means of defense from Chinese nuclear capability) -- maintain balance (neutrality?).

3. Chinese work force and raw materials.

4. Potential conflict over offshore oil.

5. Development of Manchuria.

6. Follow U.S. lead in detente with PRC (normalization of relations).

7. Maintenance of close ties with Taiwan.

D. Issues Involving Diplomatic Relations:

1. Strategic planning for increasingly multi-polar international system.

2. Participation in reconstruction of Indochina (political detente, investment).

3. Closer relations between Japan and Common Market countries.

4. Better relations with developing nations (Latin America, Southeast Asia).

5. Strengthen U.N. activities.

6. Promotion of regional cooperation.

E. Issues Involving Armament:

1. Future of own military capabilities.

2. Future of U.S.-Japanese Security Treaty.

3. Nuclear Armament.

4. Maintenance of nuclear-free mainland status.

F. Issues Involving Energy and Resource Dependence:

1. Implications of energy crisis.

2. Appease Arabs.

3. Resource dependency for food, raw materials, oil.

4. Cooperate with other areas in resource development to increase availability.

5. Export technology to developing areas to produce semi-processed materials abroad.

6. Reduce heavy industrial energy requirements at home.

7. Restructure home industry to use less energy.

8. Resource saving at home: (a) mass transit, (b) less imported food consumption.

9. Slow own rate of growth.

10. Foreign investment by Japan.

G. Issues Involving the Domestic Economy:

1. Domestic inflation.

2. Paucity of social capital and social services.

3. Environmental decay.

4. Revaluation.

5. Establish export tax.

6. Open Japanese markets to foreign investment.

7. Restructure Japanese economy (disperse factories, domestic investment, government inducements).

8. Domestic growth.

9. Develop mass transit.

H. Issues Involving the International Economy:

1. Liberalize trade and capital; encourage spending and investment abroad; lower tariffs; remove non-tariff barriers.

2. Responsibility in the interdependent international economic community.

3. Aid to developing nations (capital, technology, finished products).

4. Seek multilateral balance of trade.

5. Promote free trade policy.

6. Reduce excessive trade surplus.

C.A.C.I.

WASHINGTON, D.C. OFFICES

PULSE USER'S MANUAL

Version B1.0

January, 1975

312<

CONTENTS

SECTION IV.   APPENDICES   A.1

314<

TABLES AND FIGURES

315<

<u>Quantitative Indicators and Management</u>. Quantitative Indicators have increasingly become the informational shorthand of management - a means for coping with the increasing quantity and variety of information confronting executives in government and industry.   Useful indicators measure conditions which are relevant to management interests and, in doing so, aid in planning and decision making.   Their value lies in the conciseness of their numerical form, the timeliness with which they can be provided, the simplicity with which they record, illustrate, and "remember" history, and their potential for signalling change.

In most large enterprises, both governmental and private, managements avail themselves of economic indicators which reflect domestic and international conditions.   The improvement or deterioration of economic conditions over time is monitored through these indicators.   As conditions signal change, management is alerted to appropriate decision priorities.   The economic risks and opportunities of ongoing and prospective ventures may then be assessed in a timely fashion. In addition, through indicators, managements are afforded succinct and authoritative language for communication.   Quantitative economic indicators, then, represent a change in the <u>form</u> of information available to and being used by managements, a form which is helping to restore the balance between essential information flows and available management time.

Now a new indicator technology is available.   It encompasses international and domestic <u>political</u> affairs, and opens new informational vistas to those governmental and private managements whose interests are sensitive to political as well as economic considerations.

1

3164

<u>Nature of the Technology</u>. While similar to economic indicators
in concept, international affairs indicators differ in two
basic ways:

1. Their measurement is in terms of units of behavior
   between and within countries, such as threats, protests,
   agreements, and meetings, rather than in more conven-
   tional units of measure, such as money, units of output
   or people, and

2. The data upon which the indicators are currently based
   is collected privately, rather than being produced by
   government agencies.

International affairs indicators are derived from the same
narrative accounts of international events as are customarily
used to analyze international affairs. Chronologies of these
events are systematically coded into continuous streams of
quantitative data. The data, in turn, are employed in formu-
lating summary quantitative measures or indicators of selected
international political phenomena.

PULSE is a flexible, user-oriented software package for manage-
ment and dissemination of the data and indicators. It is now
possible to access this information from virtually any remote
location, to retrieve selected data, to produce up-to-date
indicator values, to record the information in either tabular
or plotted form, and even to recapture the original narrative
accounts as English language abstracts. A vital characteristic
of this technology is the ability of users to move freely
between the numerical and English language forms of interna-
tional affairs information. In this way the convenience and
manipulability of numerical data are made available while pre-
serving the bulkier, but more informative, narrative accounts.

2

317<

Specifically, the PULSE event-interaction data base[1] consists
of international event data coded from the daily New York Times,
with worldwide coverage starting in January, 1966, and con-
tinuing currently.

PULSE international affairs indicators, the product of more
than three years of team research, attempt to capture both
quantitative and qualitative aspects of interactions between
nations as represented in the data base. Quantitative con-
cepts include Involvement, Participation, and Concentration,
which are designed to measure both the magnitude and distri-
bution of international actions. These indicators are con-
structed directly from smoothed and actual event frequencies
for each nation and nation-pair, at progressively more aggre-
gate levels. In contrast to these measures of magnitude and
distribution, indicators of Relations and Policy Style portray
selected qualitative dimensions of international behavior by
algebraic comparisons of certain groups of event categories
with others. All PULSE indicators are computed as time series
which are displayed at the user's communication terminal as
tables or plots. PULSE permits the user to select the data,
indicator, and display options best suited to his particular
application. User options are explained in detail in Section III.

_____

[1] The term event interaction was coined by Professor Charles
McClelland, director of the World Event/Interaction Survey
(WEIS) Project at the University of Southern California. Event
interactions between countries are defined as actions and re-
sponses that are both official (i.e., initiated and received
by governmental representatives) and non-routine (i.e., of
sufficient importance that they attract attention and are re-
ported). Event interaction data consist of chronologies of
such actions and responses in which the constituents of an
event may include an actor, event, target, and arena. Since
1971, CACI, Inc. has continued the WEIS collection, and has
engaged in research in the coding of event data and the con-
struction and validation of event-based indicators.

SECTION II.   PULSE CONCEPTS

Event Data Coding and Data Management

The following concepts are presented as a means of orienting
the user to the international affairs technology undergirding
the PULSE system.

Coding refers to the process by which event data collections
are generated. Narrative accounts of non-routine behavior
between governments form the basis of each particular collec-
tion. Routine interactions, such as normal trade and diplo-
matic discourse, tourist exchanges, and mail flows which are
not reported in the daily press are excluded.

The coding process, based on a system developed at the Univer-
sity of Southern California, converts reporters' accounts of
behavior appearing in print into four basic numerical codes.
These codes identify the date, the country initiating an ac-
tion (called "actor"), the country toward which the action is
directed (called "target"), the category of action ("event"),
and the region of the world or "theatre" in which the action occurred
("arena"). Recently, an issue code has been added, further
identifying the domain in which the action occurred as being
"political", "economic", or "military" in character. At the
time each narrative account is coded, an English-language ab-
stract of the event is prepared and included in the collection
with the numerical entry.[2]

---

[2] Appendix A provides a list of countries encompassed by current
coding procedures. The various categories of interaction are
summarized in Appendix B. Arena codes appear in Appendix C.

4

The primary source of international affairs narratives to
which the coding system has been applied is the daily New York
Times. Figure 1 illustrates the process of coding a typical
New York Times news item to produce event data records. Coding
of the New York Times in this manner has yielded over 70,000
records of international actions since January, 1966.[3] Not
all countries and regions of the world are uniformly repre-
sented, however. For a variety of reasons including basic dif-
ferences in levels of activity, coding conventions, reporting
practices, and other factors, not all pairs of countries will
have sufficient data to be of interest. Figure 2 illustrates
overall distribution of coverage as of March, 1972.

Data Management refers to the computer programs, or software,
developed for error checking, storage, and retrieval of the
raw data produced through coding. The raw data collection is
checked, reformated in a manner which maximizes retrieval
speed and efficiency, and placed on two separate magnetic tapes:

> (1) a chronology of numerical data,
>   called the analytic file; and
>
> (2) a chronology of English language
>   abstracts, called the descriptive file.

PULSE enables the user to retrieve any specified portion
of one or both of these files with great ease. For example,
one might retrieve and display in tabular form the monthly
frequency of selected actions directed towards the U.S. by
China, opting to retrieve the corresponding English language
abstracts as well. This capability is discussed in detail as
Option 5 in Section III below.

─────────────────────

[3] It should be noted that the coding system and other components
of international affairs technology, including the PULSE system,
are source independent. That is, the technology is general and
may be applied to other narrative sources as the need arises.

5

Figure 1.   Examples of WEIS Coding

NEW YORK, SATURDAY, OCTOBER 9, 1971.

SOVIET IS OUSTING FOUR BRITISH AIDES IN REPRISAL MOVE

Cancels Douglas-Home Trip and Revokes the Visas of Three Businessmen

By HEDRICK SMITH
Special to The New York Times

MOSCOW, Oct. 8—The Soviet Union tonight ordered the ouster of four British diplomats and one businessman and revoked the entry visas of three other businessmen in retaliation for Britain's mass expulsion two weeks ago of 105 Soviet representatives on espionage.

The Soviet Foreign Ministry summoned the British Ambassador, Sir John Killick, to an urgent meeting to inform him that the Britons ordered ousted would have to leave the country within two weeks and to advise him of the following additional countermeasures.

¶Cancellation of several high-level visits, including the trip here early next year by Sir Alec Douglas-Home, the British Foreign Secretary, in view of the "severe aggravation" of Soviet-British relations "caused by the actions of the British Government."

¶Suspension of the operation of several joint Soviet-British commissions in economic and cultural fields.

¶The permanent barring in the Soviet Union of [...]

Actor/Target Country Codes

USSR = 365

United Kingdom = 200

Event Codes

201 = Order personnel out of country; deport

031 = Meet with

191 = Cancel or postpone planned event

192 = Reduce routine international activity

year	month	day	actor	event	target
71	10	08	365	201	200
71	10	08	365	031	200
71	10	08	200	031	365
71	10	08	365	191	200
71	10	08	365	192	200

5.A

Figure 2. WORLD SUMMARY-NEW YORK TIMES INTERACTION MATRIX

	USA	USR	CPR	UNK	FRN	GMW	NAT	WAR	Europe	Latin America	ISR	Arabs	Sub-Sah. Africa	NIG/BIA	IND/PAK	KOS/KON	Indochina	JAP	Asia	UNO
USA		708	107	130	115	124	280	102	119	274	203	339	85	51	212	161	1969	135	173	281
USR	872		252	114	89	156	91	261	63	35	121	198		12	86	10	101[l]	54		116
CPR	332	279		82	15	53	25	20[c]	18[d]				13[i]		117		103	52	64	30
UNK	137	124	47		43	66	22	25	66		26	66	83	20	10		21			71
FRN	150	106	11	22		66	39		10[f]		24	34	20				18[n]			40
GMW	132	108	23	50	75		39	268			30	23	20				18[n]			40
NAT	263	93	23	21	31	39		137[b]	35		15									72
WAR	147	216	16[c]	11	34	161	31[a]		21[g]											20[e]
Europe	163	92	13[d]	26			25	22[g]		71		15[h]	20[k]							24[e]
Latin America	354	35							13[k]											
ISR	175	64		26	32	30			15[h]			1247								138
Arabs	564	121		66	34	23			15[h]		1224	1219								222
Sub-Saharan Africa	62		9[i]	114									64							22
NIG/BIA	36	9		21										165						29[j]
IND/PAK	183	81	78	11											601				47	63
KOS/KON	182	10														181				21
Indochina	1872	51[l]	49	21	18[n]												3913		12[m]	32
JAP	197	50	60																14[m] 139	63
Asia	209												31[j]							66
UNO	114	27	19	47	19		50		24[e]		234	131	31[j]	21	47	28				68

Footnotes to cell entries refer to country accounting for the interactions represented in the cell matrix, e.g., "m" means that Thailand and Malaysia comprise the Asia grouping which initiates and receives interactions from Indochina.

[a] GRC/TUR   [d] w/ ALB   [g] w/ YUG   [j] w/ SAF   [m] TAI/MAL
[b] All w/ CZE [e] w/ CYP   [h] w/ YUG   [k] BEL/COP   [n] w/ VTN
[c] w/ RUM   [f] YUG   [i] w/ TAZ   [l] w/ VTN

5.B

322<

Data management also refers to the creation and timely updating of smaller, specialized files used in the computation of event data indicators. Most of the indicators discussed below are oriented to interactions between pairs of countries.[4] For reasons of efficiency, it is convenient to retrieve pair-wise data from the analytic file in advance, and to store these data in a separate file for processing as needed. This Dyadic Data File, consisting of selected country pairs, is used each time pairwise data are required to compute a particular indicator, as in user Options 2,3, and 4, Section III. Appendix D lists the country pairs which presently constitute the Dyadic Data File.

For the user interested in pairs of countries not contained in the Dyadic Data File, PULSE permits the user to construct his own pair-wise data file ("Custom Data File"), consisting of event data for one or more country-pairs of his own choosing. He may then compute event data indicators based on these data under Options 2,3, and 4. The construction and use of Custom Data Files is discussed under Options 6 and 7, Section III.

Event Data Indicators

This section defines the event data and indicators available to PULSE users. The following discussion progresses from indicators based on least aggregate to most aggregate data.

Disaggregate or raw event data are themselves the least aggregate indicators available within the PULSE system. These may be retrieved and displayed in tabular form, such as events by time, actor by target, time by arena, and so on, at the option of the user. (Option 5)

---

[4] "Country", as used here, may refer either to a single country or any aggregation of countries, e.g., USA and USSR constitute a country pair as does NATO and Warsaw Pact.

6

Grouped Event Data. In developing the aggregate indicators which follow, it was desirable from a conceptual viewpoint to reduce the array of more than 60 categories of events to a more manageable number. Considerable testing was done to insure that while reducing the overall number of different behaviors, certain crucial distinctions between types of behavior were preserved. Specifically, the event groups were constructed so that they would form a rough progression from hostile to friendly behavior as follows: (1) Military Incidents; (2) Coercion; (3) Pressure; (4) Communication/Consultation; (5) Support/Agreement; (6) Reconciliation; and (7) Military Disengagement. The assignment of specific event categories to each of the seven groups is documented in Appendix E. Experiments to determine the validity of group composition and the scalability of the event groups relative to each other were subsequently conducted,[5] with favorable results. These event groups constitute the second level of data aggregation.

From these seven event groups, a third level of aggregation can be derived, consisting of three behavorial dimensions: negative (unfriendly), neutral, and positive (friendly). The sum of the event frequencies in Groups 1,2, and 3 was conceptualized as negative behavior, Group 4 was considered neutral, and the sum of the frequencies in Groups 5,6, and 7 was defined as positive behavior. These latter dimensions form the basis of the Relations and Style indicators discussed below.

Involvement and Participation, at a fourth level of data aggregation, are computed by summing the positive, neutral, and negative event frequencies. They are intended to measure the magnitude of international interaction. Involvement is de-

---

[5] Theodore J. Rubin and Gary A. Hill, Experiments in the Scaling and Weighting of International Event Data. CACI, January, 1973.

7

\

fined as the total frequency of actions which flow in both directions between a pair of countries per unit time (i.e., actions from A to B plus actions from B to A). Participation, on the other hand, measures asymmetric behavior: the sum of the actions directed by one member of a country pair to the other.

PULSE allows the user to inspect event groups, the positive, neutral, and negative dimensions, and Participation or Involvement for any of the country pairs in the Dyadic Data File. These frequencies may be displayed as smoothed or actual time series over the entire span of the collection. (Option 4)

The capability for displaying both simple event frequencies and smoothed event frequencies was provided in response to an important problem in the utilization of event data: simple event frequencies are sometimes undesirable because calendar units of time (months, years) are arbitrary relative to the occurrence of events, and because the occurrence of events may be infrequent and sporadic relative to the units of calendar time employed. Smoothing is provided in Option 4 as a means of enabling the user to determine whether differences in the mix of actual event groups, in contrast with the mix of smoothed groups, is significant enough to warrant different conclusions about country pairs of interest.

Smoothing is accomplished by means of a decay function that diminishes each previous value in the actual time series by a factor of one-half for each new point encountered. This procedure has the effect of "carrying over" the impact of previous events into successive time points, where the carry-over effect is reduced by half for each successive time-point, as follows:

8

$$S_t = 1/2 \ (F_t + S_{t-1})$$

Where: S_t = smoothed event frequency at time t for any event group

S_{t-1} = smoothed event frequency at the previous time-point for any event group; and

F_t = unsmoothed, or actual event frequency at time t for any event group.

In contrast to the preceding measures of magnitude, Relations and Policy Style are indicators of the quality of international action. Interaction between a country pair may range from friendly to unfriendly over time, as it consists of a mix of positive, negative, and neutral actions. The Relations indicator is defined as the quality of the flow of actions between a country pair in both directions (i.e., actions from A to B and actions from B to A). Policy Style is defined as the quality of the flow of actions from one country to the other (i.e., actions from A to B).

Relations and Policy Style are measured by the particular mix of positive, negative, and neutral actions of a pair as reported by the data source. Values of Relations and Policy Style are obtained by the function:

$$R, \text{ or } S = \frac{p-n}{p+n+\dfrac{ne}{2}}$$

Where: R = Relations

S = Policy Style

p = frequency of positive actions reported, in both directions for R, or in one direction for S

n = frequency of negative actions reported, in both directions for R, or in one direction for S

ne = frequency of neutral actions reported, in both directions for R, or in one direction for S (neutral actions are accorded only one-half weight in measuring R and S)

9

The values of this function range from +1.0 to -1.0. A plus
value for R or S indicates that positive actions exceed nega-
tive actions, and, therefore, that R or S is friendly; A minus
value of R or S indicates the opposite. The magnitude of the
plus or minus values of R or S indicates the degree to which
Relations or Policy Style are positive or negative, respec-
tively (i.e., how friendly or how unfriendly). Relations values
are obtained with Option 2, and Policy Style is available
through Option 3, below.

Concentration, representing a fifth level of data aggregation,
is designed to measure the extent to which a particular country
concentrates its international behavior over time with respect
to the following selected target countries:

    (1) The "world", comprised of approximately 150 target
        countries retrieved from the New York Times collection
        for this purpose;

    (2) The "geopolitical region" (e.g., South America, South-
        east Asia, Eastern Europe, etc.); and

    (3) The "primary targets", that is, the ten countries toward
        which the actor country was most active over each par-
        ticular time period.

    (4) The ten primary target countries within selected regions.

Concentration is measured over six-month time intervals from
the beginning of the collection. Calculations are made from
smoothed as well as actual event frequencies, where smoothing
in this case is achieved by overlapping the data as described
in Option 1, below. Concentration for a particular actor may
be calculated for all events (Groups 1-7), or for negative
events only (Groups 1-3).

Concentration is defined in each case as the square of the sum
of the event frequencies, divided by the sum of the squared
event frequencies:

10

$$C_t = \frac{\left(\sum_{i=1}^{N} e\right)^2}{\sum_{i=1}^{N} e^2}$$

Where: C_t = concentration at time t for any actor
relative to any of three constituencies;

e = total number of events directed from Actor A
to Target B in constituency of size N;

N = number of target countries in a given
constituency.

This formulation has the effect of reducing the impact of relatively small event frequencies while amplifying the effect of relatively large frequencies. The resulting measures, which range from 1.0 to N, may then be interpreted as the basic number of countries on which a given actor is focusing its activities, relative to each of the four target groups.

11

This section explains PULSE questions and user responses. All responses to questions posed by PULSE are underlined. The symbol (CR) indicates a carriage return. The user should refer to Appendix F, "Interactions with the G.E. System," for instructions on how to access the PULSE system through G.E. timesharing.

The user initiates PULSE execution by typing:

RUN PULSE (CR)

Periodically, new versions of the PULSE system are implemented. These versions include new features and enhancements. On these occasions, PULSE will direct the user to a source of new features information, either on-line, or off-line, at this point in the program.

The program then types:

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?

Valid responses to this query are the numbers zero through seven to continue processing, and the number "99" which stops the program.

The international event data and indicators described in the preceding section have been organized into seven computing and display options, each of which is invoked by typing a number

12

from one to seven in response to the "ENTER OPTION" query. Assuming the user typed a carriage return in response to this query, PULSE would provide the following list of options:

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?(CR)

        P U L S E   O P T I O N S

1-- Tabular display of Concentration Indicators for selected major actor nations relative to more than 150 possible target nations.

2-- Tables or plots of Relations and Involvement Indicators for any of the country-pairs in the Dyadic Data File (DDF), or any pairs in a user's Custom Data File (CDF). Indicators may also be requested for selected issue-coded DDF country-pairs.

3-- Tables or plots of Policy Style and Participation Indicators for any of the country-pairs in the Dyadic or Custom Data File, plus issue-oriented Policy Style and Involvement Indicators for selected DDF country-pairs.

4-- Tables or plots of monthly smoothed or actual Event Data Group frequencies, Positive-Neutral-Negative groups, and Participation/Involvement Indicators for any DDF or CDF country-pair.

5-- Accepts requests for Analytic (numerical) and/or Descriptive (English-language abstract) retrievals.

6-- Accepts requests for Analytic retrievals required to build one or more Custom Data Files for the user. Retrievals consist of monthly event group frequencies controlled for country pairs of interest to the user.

7-- Displays and/or processes retrieval output for Options 5,6.

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?99 (CR)

It should be noted that for this question as for most other questions posed by PULSE, a user may indicate that he does not understand the question, or that he does not know the required responses, by typing a carriage return. In general, the program will respond with a brief tutorial message before repeating the question.

13

Option 1. For Concentration indicators, the normal sequence of PULSE questions is as follows:

    SPECIFY ACTOR COUNTRY (3-LETTER CODE)...?
    SPECIFY TARGET GROUP (1-4), OR TYPE ZERO FOR LIST...?

    DO YOU WANT TO SEE MEASURES BASED ON ALL SEVEN C.A.C.I.
    EVENT GROUPS, OR MEASURES BASED ON NEGATIVE·EVENT GROUPS
    ONLY (0=ALL EVENTS; 1=NEGATIVE EVENTS)...?

    MORE CONCENTRATION DISPLAYS (0=YES; 1=NO)...?

Currently, Concentration indicators are available only for selected actor countries with sufficient data to be of interest under this option. Countries are recognized by the program as a three-character code for the country name as shown in Table 1.

The user is next asked to specify the target groups for which concentration indicators are to be displayed: the world, primary targets, primary regions, or primary targets within selected regions.

The user is then asked whether computations should be based on all of the seven event groups, or whether only negative events (Groups 1,2, and 3) are to be used.

Table 2 consists of concentration indicators for Japan relative to primary targets in each of ten time periods. Each time period is defined as a 24-month period, beginning in January, 1966, and moving every six months. For example, the first time period encompasses January, 1966 through December, 1967, period two extends from July, 1966 through June, 1968, and so on. Each successive time period overlaps the previous time period by 18 months for smoothing purposes.

Table 2 displays the code names of the ten countries toward which Japanese activity was greatest in each time period, rank-ordered from left to right. Also presented are the event fre-

14

TABLE 1.

Major Actors for Which Concentration
Measures are Available

Actor	How Recognized by the Program
Chinese People's Republic	CPR
East Germany	GME
France	FRN
India	IND
Israel	ISR
Japan	JAP
Soviet Union	USR
United Arab Republic	UAR
United Kingdom	UNK
United States	USA
West Germany	GMW

TABLE 2.

Concentration Measures for Japan.

ENTER   OPTION NUMBER (1 - 7, 0 FOR LIST, 99 TO STOP...?1 (CR)

SPECIFY ACTOR COUNTRY (3-LETTER CODE)...?JAP (CR)

SPECIFY TARGET GROUP (1-4), OR TYPE ZERO FOR LIST...?0 (CR)

             TARGET GROUPS CONSIST OF THE FOLLOWING:
     1 -- THE 'WORLD' OF 155 TARGET COUNTRIES IN THE DATA BASE;
     2 -- TEN MOST IMPORTANT (PRIMARY) TARGET COUNTRIES AT TIME t;
     3 -- TEN PRIMARY TARGET REGIONS AT TIME t;
     4 -- TEN PRIMARY TARGET COUNTRIES WITHIN SELECTED REGIONS AT TIME t.

SPECIFY TARGET GROUP (1-4), OR TYPE ZERO FOR LIST...?2 (CR)

DO YOU WANT TO SEE MEASURES BASED ON ALL SEVEN
C. A. C. I. EVENT GROUPS, OR MEASURES BASED ON NEGA-
TIVE EVENT GROUPS ONLY (0=ALL EVENTS; 1=NEGATIVE EVENTS)...?0 (CR)

PRIMARY JAP   TARGET COUNTRIES

    1   USA USR CPR KOS ISR CAN INS PHI VTN IND
    2   USA CPR USR INS ISR VTN KOS CAN PHI IND
    3   USA USR CPR INS ISR VTN IND CHT YUG FRN
    4   USA USR CPR INS IND VTN CHT ISR YUG FRN
    5   USA USR CPR INS KOS AUL IND YUG UNK SIN
    6   USA USR CPR IND KOS AUL VTS KON GEN SIN
    7   USA USR CPR KOS IND AUL VTS PAK KON GEN
    8   USA USR KOS CPR AUL SIN VTS IND UNK INS
    9   USA USR CPR IND KOS CHT HOR GEN UNK CAN
   10   USA USR CPR ISR FRN PER INS TAI KOS CHT

PRIMARY JAP   TARGET COUNTRY FREQUENCIES, CONCENTRATION

    1   29. 12. 7. 4. 3. 3. 2. 2. 2. 2. 3.15   66.
    2   35. 11. 8. 5. 4. 3. 3. 3. 2. 2. 3.65   74.
    3   45. 13. 7. 5. 3. 2. 2. 2. 2. 2. 2.54   80.
    4   52. 12. 9. 3. 3. 2. 2. 2. 2. 2. 2.12   89.
    5   60. 16. 9. 3. 3. 2. 2. 2. 2. 1. 2.05 105.
    6   65. 21. 8. 3. 3. 2. 2. 2. 2. 1. 2.11 107.
    7   64. 13. 8. 5. 3. 2. 2. 2. 2. 2. 1.91 101.
    8   62. 14. 9. 4. 3. 2. 2. 2. 2. 1. 1.89   97.
    9   82. 10. 8. 2. 2. 2. 2. 2. 2. 2. 1.37 111.
   10   94. 16. 8. 4. 3. 3. 2. 2. 2. 2. 1.73 134.

          CONCENTRATION MEASURES FOR JAP , GROUPS 1-7, TER OPTION 2

MORE CONCENTRATION DISPLAYS (0=YES; 1=NO)...?1 (CR)

16

quencies (A to B only) for all events (Groups 1-7) directed by Japan at each respective target. The concentration indicator appears as column 12 of the second table in Table 2. Participation (the smoothed, A-to-B event frequency for the target group) is presented in column 13.

The user is given the opportunity to obtain additional displays after the target frequencies and concentration indicators have been typed.

Option 2. Relations and Involvement indicators may be computed for any of the country pairs in the Dyadic Data File (see Appendix D), or for any country pair in a Custom Data File constructed by means of Options 6 and 7, below.

The normal sequence of questions posed by PULSE under this option are as follows:

        DATA FILE NAME (⟨CR⟩ FOR DDF, OR CDF NAME)...?
        RELATIONS FOR HOW MANY DYADS (1-nnn)...?
        WHICH DYADS (1-nnn)...?
        TIME OPTION (1-5), OR TYPE ZERO FOR LIST...?
        START AT WHICH MONTH (6601-yymm)...?
        DO YOU DESIRE (1) TABLES; (2) TABLES & PLOTS; (0) ZETA PLOTS...?
        DO YOU DESIRE ADDITIONAL RELATIONS INDICATORS (0=YES; 1=NO)...?

"Data File Name" refers to the name of the country-pair data file to be used in computing the Relations and Involvement indicators. A carriage return signifies that the file containing the country pairs listed in Appendix D is to be used. If the user wishes to compute Relations and Involvement for country pairs in his own Custom Data File, the name of that file may be entered at this point. If the program does not recognize the file name entered by the user, a message to that effect is typed and the program repeats the "ENTER OPTION" query.

17

If the file name is valid, the program types:

RELATIONS FOR HOW MANY DYADS (1-nnn)...?

At this time, the user may request indicators for as many pairs as are contained in the file he has specified, where "nnn" is the total number of dyads present in the file.

The program then requests one or more numbers which identify the pairs for which computations are to be made:

WHICH DYADS (1-nnn)...?

Numerical codes for country pairs in the Dyadic Data File are presented in Appendix D. For Custom Data Files, the user should enter one or more numbers which correspond to the sequence in which particular pairs occur in his file. For either type of file, the numeric identification codes may be entered on a single line, if desired, where each entry is separated by a single blank from any other entry. If any one line contains fewer than the required number of entries, the program types a question mark to indicate that more entries are expected. The user should continue typing country pair identification codes on as many lines as are needed for this purpose.

Next, the user is asked to indicate the units of time over which computations are to be made. Responses to this question and to those which follow will apply to all of the pairs specified in the current run.

TIME OPTION (1-5), OR TYPE ZERO FOR LIST...?

Five time intervals are available:
    1-- 12-month calendar year;
    2-- Semi-annually, for each calendar year;
    3-- Quarterly, for each calendar year;
    4-- Any 12-months, with moving three-month intervals; and
    5-- Any 24-months, with moving six-month intervals.

18

The user enters a number from 1 to 5 to select the desired
interval. Maximum data smoothing is provided by time options
4 and 5, which tend to be more appropriate for country pairs
with relatively light or irregular patterns of interaction.
Where interactions are more frequent, quarterly, semi-annual,
and yearly time intervals may be specified.

PULSE allows the user to select the year and month at which
computations are to begin:

    START AT WHICH MONTH (6601-yymm)...?

where "yymm" is the latest starting month appropriate for a
particular time option. The correct response is a single four-
digit number, where the first two digits represent the year
and the last two digits represent the month. For example, a
starting date of January 1, 1973 would be specified as "7301".
If the date entered is out of bounds, the question will be re-
peated. If the date falls within bounds, but is too late in
time to permit construction of at least one data interval, the
data will be adjusted by the program and a diagnostic given
to this effect.

Calculations may be displayed in any one of three formats. It
is this output format which is requested next:

    DO YOU DESIRE (1) TABLES; (2) TABLES & PLOTS; (0) ZETA PLOTS...?

A response of "1" causes the indicators to be displayed in
tabular form at the communications terminal. Labeling begins
with the name of the country pair and identification of the
time points for which calculations are made. Included in this
display are Relations and Involvement indicators, as well as the
Positive, Neutral, and Negative components used in their cal-
culation. Also displayed is a tally of any interactions invol-
ving force ("MIL"itary incidents). Occasionally, a Relations

19

value of "5.00" appears in the printout. This value denotes a level of data which is insufficient for making a Relations calculation (i.e., where Involvement is less than five events). As mentioned previously, valid Relations values range from +1.0 to -1.0.

Entry of a "2" causes a table to be typed as with "1" and a plot of Relations to be constructed at the terminal, for each country pair. Entry of "0" or (CR) specifies that one or more plots are to be drawn on a timesharing plotter interfaced with the user's terminal.[6]

If a "0" is specified, two additional questions are presented. First, the user is given the opportunity of requesting either a plot for the entire computational period, or a partial plot which terminates at a point indicated by the user:

IF YOU DESIRE A BREAKPOINT, ENTER STOP YEAR (66-nn), OR ZERO FOR THE FULL PLOT...?

It is anticipated that while most users will want complete plots, certain users with specialized educational or forecasting objectives may find it useful to display less than the full time series for which data is available.

Secondly, where Relations indicators have been requested for more than one dyad, the user may elect to plot Relations and Involvement individually, on separate axes, or as a composite

---

[6] Acquisition of a timesharing plotter is completely at the discretion of the user, and is by no means essential for meaningful use of the PULSE System. However, the PULSE System does produce 8½ by 11-inch plots on a Zeta 230 Incremental Plotter. Users desiring to avail themselves of this capability should contact CACI for further information.

plot on the same set of axes:

DO YOU DESIRE ONE COMPOSITE PLOT, OR n SEPARATE PLOTS
(0=COMPOSITE: 1=SEPARATE)...?

A zero results in a composite plot, while "1" results in as
many separate plots as there are country pairs in a particu-
lar run.

During any display option, the user may terminate unwanted
print out with the break key on his terminal. In this case,
or in any event when all calculations have been displayed,
the program types:

DO YOU DESIRE ADDITIONAL RELATIONS INDICATORS (0=YES; 1=NO)...?

A response of "0" begins a new Relations cycle, with the
request for a "DATA FILE NAME", while entry of a "1" returns
the user to the "ENTER OPTION" phase.

An example of a conversational sequence used to request plots
of Relations values appears in Table 3. In Table 3, the user
indicates with a carriage return that country pairs in the
Dyadic Data File are to be used. Specifically, three country
pairs are requested (USA-Japan, USSR-Japan, and the Chinese
Peoples' Republic-Japan), identified to the program by the
numbers 42, 65, and 86, respectively (Appendix D). The choice
of time option 5 results in calculations based on 24-month
intervals moving every six months, beginning in January, 1966
("6601"). The user further specifies that output should take
the form of a composite plot, with all three dyads appearing
on the same set of axes. The period of activity to be plotted
is from January, 1966, through December, 1972.

Table 4 depicts the resulting plot. Relations and Involvement
values for each country-pair are computed, plotted and labeled
in the order specified by the user. In this example, the

21

TABLE 3.

Conversational Sequence -- Sample Relations Plot.
(User responses underlined)

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?2 (CR)

DATA FILE NAME (<CR> FOR DDF, OR CDF NAME)...? (CR)

RELATIONS FOR HOW MANY DYADS (1-195)...?3 (CR)

WHICH DYADS (1-195)...?42 65 86 (CR)

TIME OPTION (1-5), OR TYPE ZERO FOR LIST...?5 (CR)

START AT WHAT MONTH (6601-7201)...?6601 (CR)

DO YOU DESIRE (1) TABLES; (2) TABLES & PLOTS; (0) ZETA PLOTS (1,2,0)...?0 (CR)

IF YOU DESIRE A BREAKPOINT, ENTER STOP YEAR (66-72), OR
ZERO FOR THE FULL PLOT...?72 (CR)

DO YOU DESIRE ONE COMPOSITE PLOT, OR   3 SEPARATE
PLOTS (0=COMPOSITE; 1=SEPARATE)...?0 (CR)

/P//P//P//P//P//P//P//P/870   (Plotting taking place.)
DO YOU DESIRE ADDITIONAL RELATIONS INDICATORS (0=YES; 1=NO)...? 1 (CR)

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...? 99 (CR)

USED   3.82 UNITS

TABLE 4.

Sample Plot (Relations Option)

RELATIONS FOR
D42 US-JAPAN
D65 USSR-JAPAN
D86 CPR-JAPAN
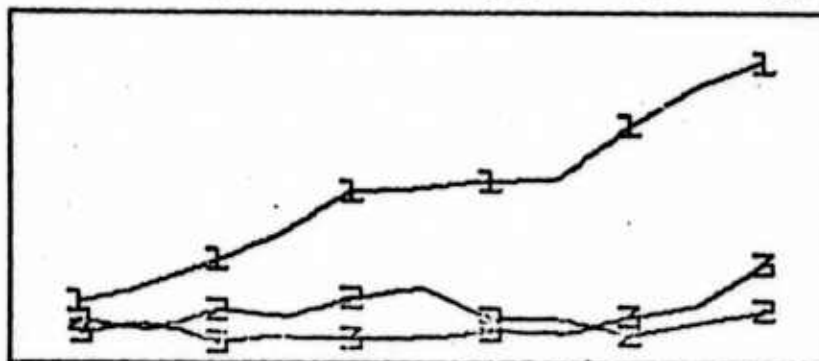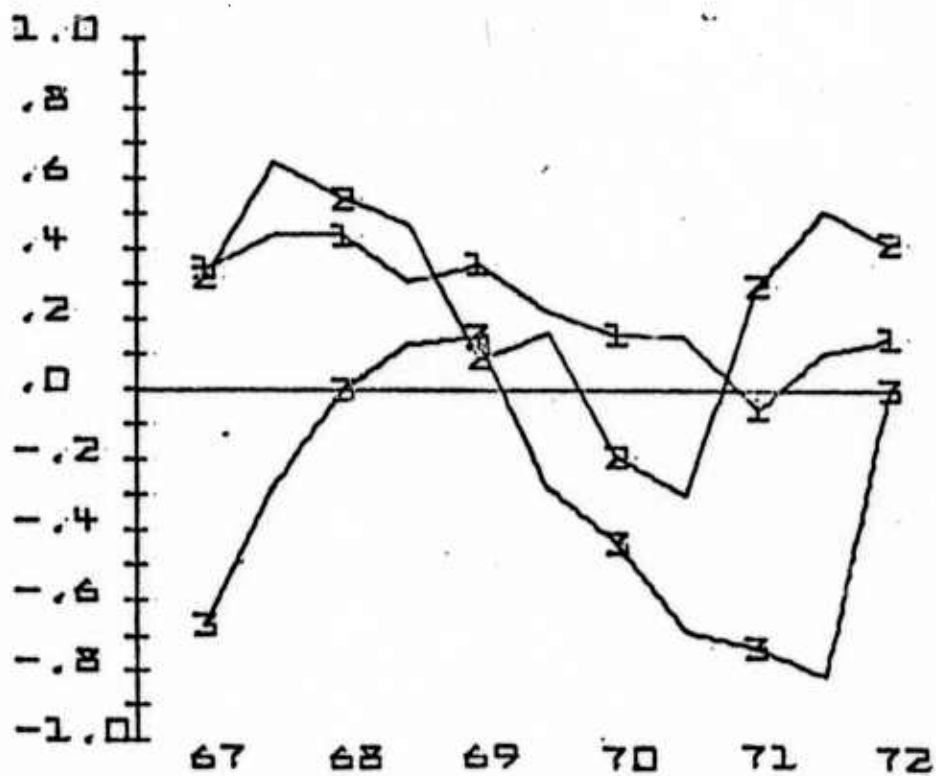
INVOLVEMENT (MAX. VALUE = 168 >

curves labeled "1" refer to the first dyad, US-Japan, the curves
labeled "2" refer to USSR-Japan, and the third set of curves
depict Relations and Involvement for China(CPR)-Japan. In con-
structing the Involvement curves in Table 4, each Involvement
series is scanned to determine the maximum data value, which in
turn is used as the scaling factor for the Involvement plot. This
maximum is reported on the plot so that the user can determine
the rough magnitude of event frequencies on which the Relations
values are based. Annotations for data year are centered at a
point corresponding to December 31st of the year indicated.

When separate plots are requested, the formats and conventions
are basically the same, except that the Involvement curve is, in
addition, broken down into Positive and Negative components for
each country pair.

Had the user in this example desired to inspect the actual values
used in plotting, the sequence could readily have been repeated,
using exactly the same entities and time variables for computa-
tion, but with tables and/or terminal plots, rather than a Zeta
plot, as output.

One use of the sample plot in Table 4 is to illustrate how an
actor nation of interest, Japan in this case, gravitates toward
each of three major powers in terms of overall relations, the
United States, USSR and the Chinese Peoples' Republic (CPR).
A substantial number of similar examples are easily constructed
by requesting Relations plots or tables for two or more country-
pairs having one member in common.

Using an analogous call-up procedure, but choosing instead
a number of issue-coded country-pairs (pairs 171-194 in Appendix D)
one can produce a plot which constitutes a refinement of one of
the Relations curves of interest in Table 4, namely, the curve
for U.S.-Japanese relations. Table 5 contains a plot of

24

TABLE 5.

Sample Plot: Relations Option
(Issue-Coded Pairs)

RELATIONS FOR
171 USA-JAPAN (POLITICAL)
172 USA-JAPAN (MILITARY)
173 USA-JAPAN (ECONOMIC)

INVOLVEMENT (MAX. VALUE = 85)

25
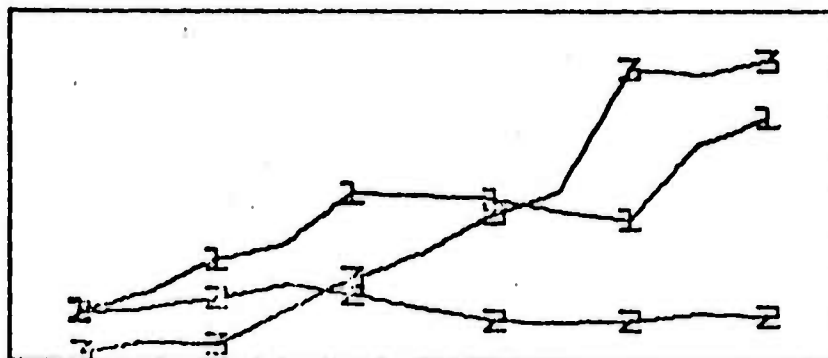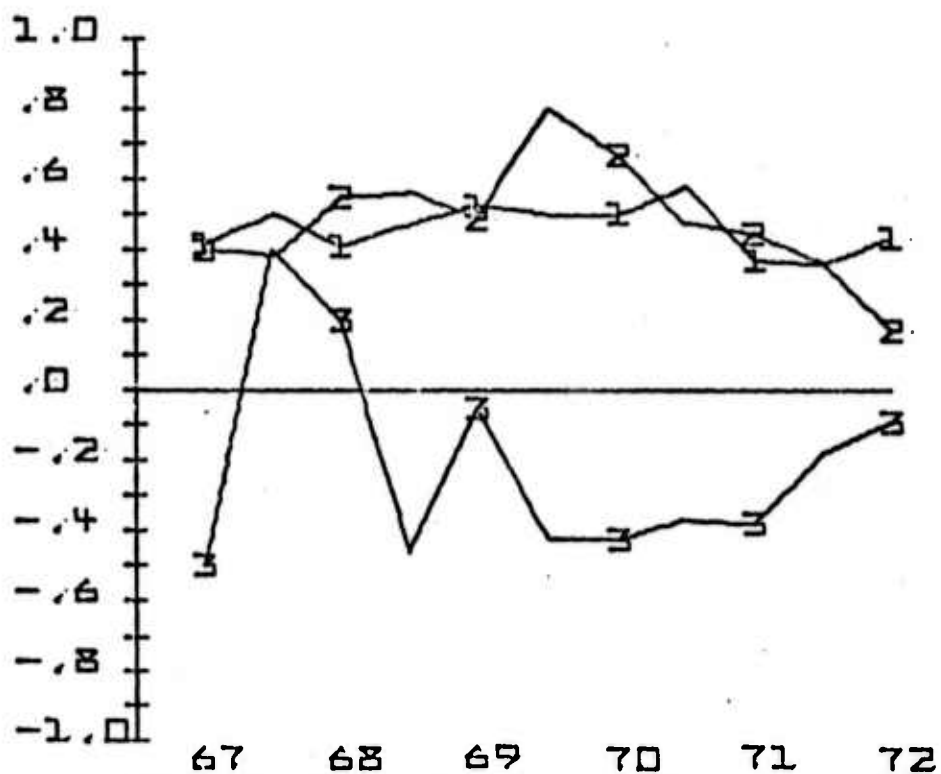
U.S.-Japanese political, military, and economic relations
(dyads 171, 172, 173), plotted in a composite manner. For
country-pairs for which issue-coded data is available, it
thereby becomes possible to judge which type of activity, poli-
tical, military, or economic, shows the most improvement or
decline, and which type is having the greatest impact in the
overall Relations curve of the type illustrated in Table 4.
In Table 5, economic relations between the United States and
Japan appear to be changing more rapidly than political or mili-
tary relations, and the last points plotted show Involvement
of each country with the other to be greatest in this dimension.

Option 3. Under this option, Policy Style and Participation
indicators are computed and displayed for any of the country
pairs in the Dyadic Data File (Appendix D), or for any country
pair in a user's Custom Data File. In contrast to Relations,
Policy Style is an asymmetric measure. It is designed to
characterize the quality of interactions directed by one member
of a country pair to another. For any one country pair of
interest to the user, indicators are displayed in both direc-
tions (A to B and B to A). The sequence of questions posed
by PULSE for this option is nearly identical to the sequence
presented for Option 2:

        DATA FILE NAME (⟨CR⟩ FOR DDF, OR CDF NAME)...?
        POLICY STYLE FOR HOW MANY DYADS (1-nnn)...?
        WHICH DYADS (1-nnn)...?
        TIME OPTION (1-5) or TYPE ZERO FOR LIST...?
        START AT WHICH MONTH (6601-yymm)...?
        DO YOU DESIRE (1) TABLES; (2) TABLES & PLOTS; (0)ZETA PLOTS...?

If Zeta plots are requested, two additional questions will be
asked:

        IF YOU DESIRE A BREAKPOINT, ENTER STOP YEAR (66-nn), OR
        ZERO FOR THE FULL PLOT...?
        SHOULD PLOT(S)CONSIST OF A-TO-B STYLE, B-TO-A STYLE, OR
        BOTH (TYPE 'AB', 'BA', OR 'BOTH')...?

26

If 'BOTH' is not typed in response to the latter query, and if more than one country pair has been specified, the option for composite plotting is presented:

DO YOU DESIRE ONE COMPOSITE PLOT, OR n SEPARATE
PLOTS (0=COMPOSITE; 1=SEPARATE)...?

When all display functions are completed, the program asks,

DO YOU DESIRE ADDITIONAL POLICY STYLE INDICATORS
(0=YES; 1=NO)...?

Appropriate responses to the preceding questions are discussed in detail under the previous heading. Table 6 contains an example of the conversational sequence required to produce Policy Style and Participation indicators in a tabular display format.

Option 4. This option provides the capability to display both smoothed and unsmoothed grouped event frequencies on a month-to-month basis. In contrast to options 1-3, where smoothing is achieved by the overlapping of data intervals, smoothing in this option is achieved by means of a decay function, as described previously. Whereas smoothing achieved with moving intervals results in relatively lengthy time periods (12 months or 24 months) as the unit of analysis, a decay function provides smoothing while preserving a month-to-month perspective on the data. This option should be helpful in pinpointing those months which are particularly active in terms of Positive, Neutral, Negative and Participation or Involvement totals. These frequencies can alternately be displayed as tables or plots.

The sequence of questions for this option is as follows:

DATA FILE NAME (<CR> FOR DDF, OR CDF NAME)...?
TIME SERIES FOR HOW MANY DYADS (1-nnn)...?
WHICH DYADS (1-nnn)...?
START AT WHICH MONTH (6601-yymm)...?
DO YOU WANT TO SEE SMOOTHED OR ACTUAL DATA (0=SMOOTHED;
1=ACTUAL)...?
DO YOU WISH TO SEE (1) INVOLVEMENT DATA, OR (2)
PARTICIPATION DATA (TYPE 1 or 2)...?

TABLE 6.

Sample Conversational Sequence For Tables
(Policy Style and Participation)

ENTER OPTION (1-7), O FOR LIST, 99 TO STOP...?3 (CR)

DATA FILE NAME (<CR> FOR DDF, OR CDF NAME)...? (CR)

POLICY STYLE FOR HOW MANY DYADS (1-195)...?3 (CR)

WHICH DYADS (1-195)...?42 65 86 (CR)

TIME OPTION (1-5), OR TYPE ZERO FOR LIST...? (CR) for list.

DATA CAN BE AGGREGATED FOR COMPUTING AS FOLLOWS:

    1 -- 12-MONTH CALENDAR YEAR;
    2 -- SEMI-ANNUALLY, FOR EACH CALENDAR YEAR;
    3 -- QUARTERLY, FOR EACH CALENDAR YEAR;
    4 -- 12 MONTHS WITH MOVING THREE-MONTH INTERVALS;
    5 -- 24 MONTHS WITH MOVING SIX-MONTH INTERVALS;

TIME OPTION (1-5), OR TYPE ZERO FOR LIST...?4 (CR)

START AT WHICH MONTH (6601-7301)...? (CR) for explanation.

A SINGLE DATE IS EXPECTED IN THE FORM 'YYMM'
FALLING WITHIN THE RANGE INDICATED. COMPUTATIONS
WILL BEGIN WITH DATA AT THAT POINT.

START AT WHICH MONTH (6601-7301)...?7202 (CR) User enters inappro-
                                                priate starting date.
FOR TECHNICAL REASONS, STARTING MONTH HAS BEEN CHANGED TO 7201

DO YOU DESIRE (1) TABLES; (2) TABLES & PLOTS; (0) ZETA PLOTS (1,2,0)...?1 (CR)

28

TABLE 6. (cont.)

DYAD 042 US(A) -JAPAN (B)   (Tabular Display Begins.)

| | A TO B | | | | | | B TO A | | | | |
| | | | | | | (Military, Negative, Neutral, Positive, Participation Totals; Style.) | | | | | |
12 MONTHS ENDING W/	MIL	NEG	NEUT	POS	PART	STYLE	MIL	NEG	NEUT	POS	PART	STYLE
12/31/72	0	3	13	17	33	0.53	0	12	12	23	47	0.27
.	0	8	21	15	44	0.21	0	11	20	24	55	0.29
.	0	10	22	10	42	0.	0	13	19	24	56	0.24
.	0	12	24	24	60	0.25	0	9	22	24	55	0.34
12/31/73	0	14	26	22	62	0.16	0	8	24	21	53	0.32
.	0	9	23	21	53	0.29	0	5	20	21	46	0.44
.	0	8	20	21	49	0.33	0	3	21	15	39	0.42

DYAD 065 USSR(A) -JAPAN (B)

| | A TO B | | | | | | B TO A | | | | |
12 MONTHS ENDING W/	MIL	NEG	NEUT	POS	PART	STYLE	MIL	NEG	NEUT	POS	PART	STYLE
12/31/72	0	2	1	7	10	0.53	0	3	4	6	13	0.27
.	0	2	1	1	4	5.00	0	3	4	2	9	-0.14
.	0	3	3	1	7	-0.36	0	2	4	2	8	0.
.	0	2	3	1	6	-0.22	0	2	2	2	6	0.
12/31/73	0	2	9	7	18	0.37	0	3	6	7	16	0.31
.	0	3	8	9	20	0.37	0	3	4	7	14	0.33
.	0	2	8	11	21	0.53	0	2	6	10	18	0.53

DYAD 086 CPR(A) -JAPAN (B)

| | A TO B | | | | | | B TO A | | | | |
12 MONTHS ENDING W/	MIL	NEG	NEUT	POS	PART	STYLE	MIL	NEG	NEUT	POS	PART	STYLE
12/31/72	0	9	4	13	26	0.17	0	2	6	8	16	0.46
.	0	1	6	13	20	0.71	0	2	7	9	18	0.48
.	0	0	6	14	20	0.82	0	3	7	9	19	0.39
.	0	1	3	10	14	0.72	0	4	4	5	13	0.09
12/31/73	0	1	4	4	9	0.43	0	3	5	4	12	0.11
.	0	2	2	5	9	0.37	0	3	4	5	12	0.20
.	0	2	2	5	9	0.37	0	1	4	6	11	0.56

DO YOU DESIRE ADDITIONAL POLICY STYLE INDICATORS (0=YES; 1=NO)...?1 (CR)

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?99 (CR)

SED   2.71 UNITS (Computer Resource Units expended.)

If Participation is specified:

> FOR PARTICIPATION, DO YOU WANT A-TO-B OR B-TO-A DATA
> (TYPE 'AB' OR 'BA')...?

In any case:

> DO YOU DESIRE (1) TABLES; (2)TERMINAL PLOTS;
> (0) ZETA PLOTS...?

If Zeta plots are specified:

> IF YOU DESIRE BREAKPOINTS, ENTER A STOP YEAR (66-nn), OR
> ZERO FOR THE FULL PLOT...?

If   plots and more than one country pair are specified:

> DO YOU DESIRE ONE COMPOSITE PLOT, OR n SEPARATE PLOTS
> (0=COMPOSITE; 1=SEPARATE)...?

If a composite   plot is to be made:

> FOR YOUR COMPOSITE PLOT, SELECT ONE OF THE FOLLOWING TO
> BE PLOTTED: (1) TOTAL EVENTS; (2) POSITIVE EVENTS;
> (3) NEGATIVE EVENTS; or (4) NEUTRAL EVENTS...?

If separate   plots are to be made:

> FOR EACH SEPARATE PLOT, YOU CAN SPECIFY ANY OR ALL OF
> THE FOLLOWING TIME SERIES:
>
> PLOT TOTAL EVENTS (0=YES; 1=NO)...?
>
> PLOT POSITIVE EVENTS (0=YES; 1=NO)...?
>
> PLOT NEGATIVE EVENTS (0=YES; 1=NO)...?
>
> PLOT NEUTRAL EVENTS (0=YES: 1=NO)...?

When all display functions are complete:

> MORE TIME SERIES DISPLAYS (0=YES: 1=NO)...?

In general, the appropriate responses to questions posed under
this option are analogous to the responses for Options 2 and 3,
above.

Tabular output consists of either actual or smoothed event fre-
quencies for either Participation or Involvement indicators,
for each country pair specified. If Involvement indicators are
specified, each month of data from the user's starting point
through the end of the collection is displayed, where the data

30

consist of smoothed or unsmoothed frequencies for the seven
event groups, Positive, Negative, and Neutral groups, and the
Involvement total. If Participation is specified, the user
is further asked whether A-to-B or B-to-A frequencies are to
be displayed. The seven event groups, Positive, Negative,
Neutral, and Participation totals are then displayed for the
appropriate event direction, either A-to-B or B-to-A.

For plotting, the user decides whether composite plots or sep-
arate plots are appropriate for his purposes. If composite
plots are specified, output will be restricted to a choice of
four frequency types to avoid confusion when more than one
country pair is being overplotted on the same set of axes:
(1) Total events, i.e., Participation or Involvement for that
pair; (2) Positive events for each pair specified; (3) Negative
events for each pair specified; or (4) Neutral events for each
pair. The choices are invoked by typing the numbers 1-4 in
response to the composite plotting question.

If separate plots are specified for each pair, then the user
may elect to overplot one or more Participation or Involvement
time series for that pair on the single set of axes drawn for
that pair: Total, Positive, Negative, and Neutral time series.
These time lines will appear on the same plot for each dyad,
scaled to the maximum and minimum values which occur across the
time series requested.

The following plotting conventions are used: first, the total
event time series will always appear above any other time series
when it is requested. Positive time series are annotated with
"+" symbols at every 12th data point (December of each year).
Negative time series are solid lines without any symbols, but
where negative and total event time series appear on the same
set of axes, little difficulty should be encountered distin-
guishing the two. Neutral event time series are annotated with

31

the symbol "=" at every 12th data point. Frequency of events
will always be plotted as the vertical, or Y-axis, while time
in months will always be plotted as the horizontal, X-axis.
Annotations for the x-axis include tic marks drawn for each
calendar quarter, and year annotations centered at a point
corresponding to December 31 of the year indicated. Finally,
whenever participation is requested, a label indicating whether
A-to-B or B-to-A data is present will be drawn.

Again taking up the US-Japan example used previously, one in-
terpretation of the plots drawn in previous options is that
the economic aspects of US-Japanese relationships are changing
rapidly and in a direction of potential interest to both parties.
As a further disaggregation of the trend lines drawn in previous
options, a time series plot of US-Japan data, coded for economic
issues was specified with the conversational sequence in Table
7 and plotted as shown in Table 8. In this plot, smoothed
event totals are plotted with negative event totals, to see
both the timing of what might be termed "new" economic initia-
tives, and the extent to which such initiatives were primarily
"helpful" or "harmful". The presence of a modest negative com-
ponent in late 1971 might be explored further by means of Option 5.

Option 5. This option accepts control instructions from the
user for both analytic (numerical) and descriptive (English
language abstract) retrievals of actual international affairs
events. One or more retrievals may be requested at any given
time. Retrievals of either type may encompass no more than
a few events occurring in a particular month, or they may en-
compass the entire chronology, depending on user inputs to
the program. For the New York Times collection, more than
70,000 events are accessible under this option.

32

TABLE 7.

Sample Conversational Sequence for Time Series Plotting.

```
ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?4 (CR)
DATA FILE NAME ( ⟨CR⟩ FOR DDF, OR CDF NAME)...? (CR)
TIME SERIES FOR  HOW MANY DYADS (1-195)...?1 (CR)
WHICH DYADS (1-195)...?173 (CR)
START AT WHICH MONTH (6601,7202)...?6601 (CR)
DO YOU WANT TO SEE SMOOTHED OR ACTUAL DATA (0=SMOOTHED; 1=ACTUAL)
...?0 (CR)
DO YOU WISH TO SEE (1) INVOLVEMENT DATA, OR (2) PARTICIPATION
DATA (TYPE 1 OR 2)...?1 (CR)
DO YOU DESIRE PLOTS OR TABLES (0=PLOTS; 1=TABLES)...?0 (CR)
FOR EACH SEPARATE PLOT, YOU CAN SPECIFY ANY OR ALL OF THE
FOLLOWING TIME SERIES:
PLOT TOTAL EVENTS (0=YES; 1=NO)...?0 (CR)
PLOT POSITIVE EVENTS (0=YES; 1=NO)...?1 (CR)
PLOT NEGATIVE EVENTS (0=YES; 1=NO)...?0 (CR)
PLOT NEUTRAL EVENTS (0=YES: 1=NO)...?1 (CR)
\P\\P\870  (PLOTTING TAKING PLACE)
MORE TIME SERIES DISPLAYS (0=YES; 1=NO)...?1 (CR)
ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?99 (CR)
```

33

TABLE 8.

Sample Time Series Plot (US-Japan Total
and Negative Events with Smoothing.)

SMOOTHED TIME SERIES FOR
ITS US-JAPAN (ECONOMIC)
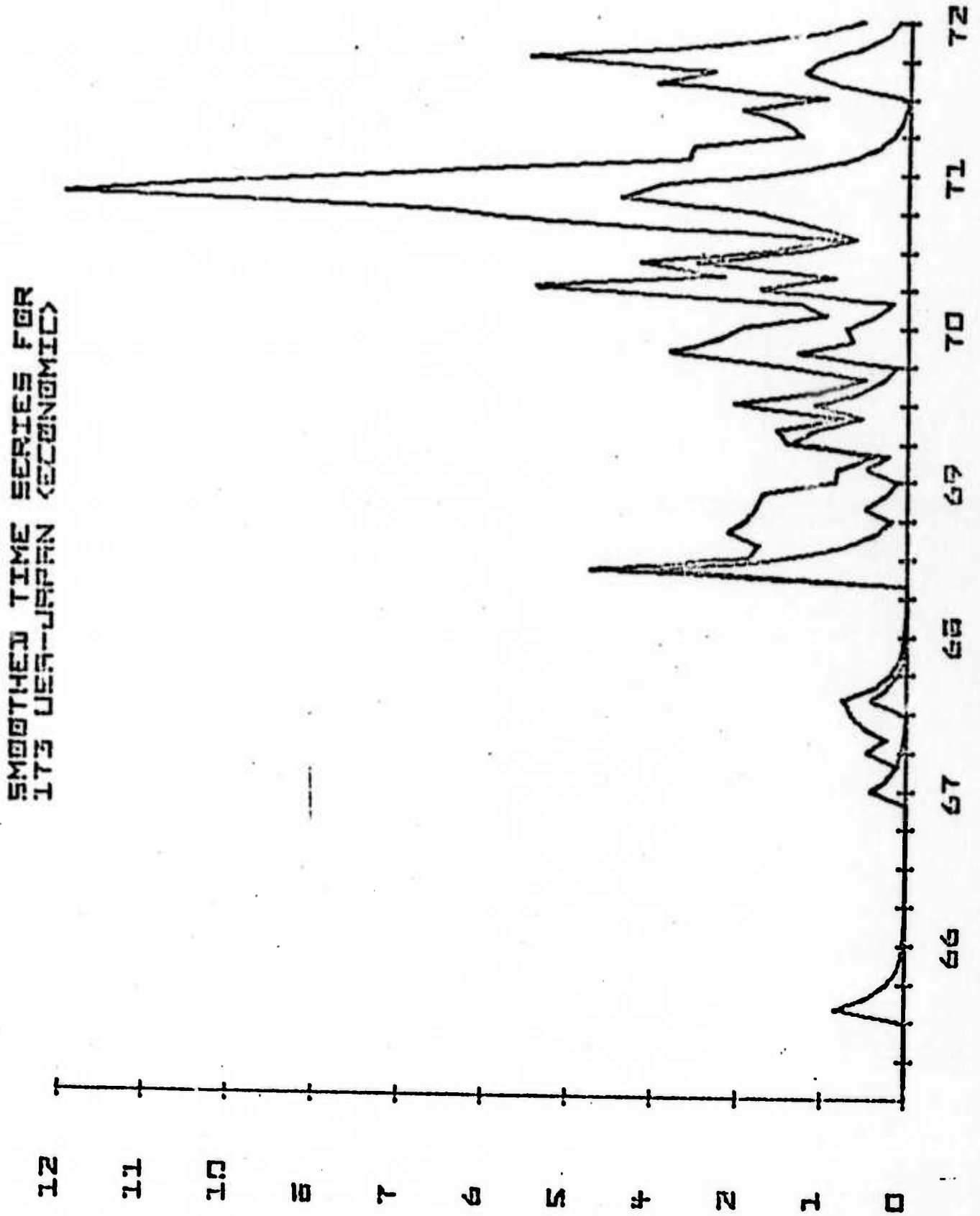
The sequence of questions for this option varies as a function
of user responses to previous questions in the sequence. All
run-time sequences are constructed from the following questions,
however:

SOURCE...?

RETRIEVAL TYPE (A/D)...?

SUPPRESS ANALYTIC OUTPUT (Y/N)...?

HOW MANY RETRIEVALS...?

DATE BOUNDARIES (YYMM,YYMM)...?

ROW- VARIABLE ...?

PARTITION (Y/N)...?

POSITIONS (begin,end)...?

S/D/A variable ...?

HOW MANY CASES...?

TYPE EACH CASE SEPARATED WITH A BLANK?
COL- VARIABLE ...?
CTL1 VARIABLE ...?

CTL2 VARIABLE ...?

CTL3 VARIABLE ...?

TITLE...?

The first question, "SOURCE...?", requests the name of the
source collection from which the retrieval is to be made.
PULSE has the capability to manage multiple event data collec-
tions simultaneously. As these collections become available
through the PULSE system, retrievals from each may be speci-
fied at this point. At present, a response of "N" is the only
valid response, denoting the New York Times collection.

In response to "RETRIEVAL TYPE (A/D)...?", the user should type
"A" for an analytic retrieval and "D" for a retrieval which is
both descriptive and analytic. Descriptive retrievals require
essentially all of the internal logic required to produce an
analytic retrieval, and therefore, as a matter of convenience

35

and economy, the user can obtain both analytic and descriptive
printouts from the same run if desired. If a descriptive re-
trieval is specified, the user is asked his preference:

SUPPRESS ANALYTIC OUTPUT (Y/N)...?

A response of "Y" for yes causes the program to display only
the textual abstracts associated with a particular run, while
a response of "N" for no results in the printing of textual
abstracts and the corresponding crosstabulation table.

Next the user is asked how many retrievals he desires to make.
The choice is usally a matter of user convencience, since the
unit cost per retrieval is essentially the same whether the
retrievals are requested singly or in multiples. For either
type of retrieval, the program needs to know the date boundaries
in which the user is interested:

DATE BOUNDARIES (YYMM,YYMM)...?

Two numerical entries are requested. For analytic retrievals,
beginning and ending dates to be searched are entered in the
form "yymm" (year-month), while for descriptive retrievals the
program requires "yymmdd" (year-month-day) format. For example,
a date boundary of January 15, 1972, through and including
September 15, 1974 would be entered as "720115,740915". The
dates may be separated with either a comma or a blank space.
If either date is incorrectly entered, a diagnostic is given and
the question is repeated.

At this stage the program is ready to accept instructions to be
used in forming the basic search criteria to be used in a par-
ticular retrieval. As discussed in Section II, the New York
Times event chronology con.ists of five basic variables: Time,
Actor, Event, Target, and Arena. Retrievals require the con-
struction of a two-dimensional table of event frequencies, where
any one of the five variables constitutes a row variable, while
any remaining variable may appear as a column variable. Beyond

36

this minimum two-variable requirement, it is possible to use one, two, or all three remaining variables as controls for the table. Controls may be specified in any order with equivalent results. The function of one or more control variables is to exclude from the table those events which do not satisfy the conditions for inclusion established by each row, column, and control variable specification.

The first specification required is the name of the variable to be used as a row variable:

    ROW-VARIABLE ...?

Acceptable responses include "TIME", "ACTOR", "EVENT", "TARGET", and "ARENA".

Each variable consists of a set of all categories (cases) by which the variable may occur in the data. Appendix A contains the numeric codes for the more than 200 Actor and Target cases. Arena codes appear in Appendix C. Specification of TIME as a variable invokes a procedure by which daily events are grouped into calendar months, a procedure which results in more than 100 cases. With respect to TIME in months as a variable, the user desiring a lengthier retrieval time period may instead specify "YEAR", "SEMI", or "QTRS" for yearly, semi-annual, or quarterly time periods. If the variable name entered by the user is misspelled or unrecognizable, a list of the valid variables is typed out and the question is repeated.

Presented next is the following:

    PARTITION (Y/N)...?

Partitioning is an option by which the user may organize the cases of the previously specified variable into more general subgroups within the variable. Partitioning always results in a smaller number of cases. In conjunction with the next two questions, the purpose of partitioning is to facilitate

37

the inclusion or exclusion of variable subgroups as search criteria. Valid responses are "Y" for yes if partitioning is desired, and "N" for no, if not.

In order to facilitate this regrouping of cases in an efficient manner, the program takes advantage of the fact that the WEIS codes (i.e., variable cases) themselves constitute a basis for hierarchical grouping of cases. For any three-digit WEIS code, the left-most digit represents the most general grouping, the middle digit may represent a more specific subgroup, while the right-most digit uniquely identifies a particular case. Since all WEIS codes are, of neccessity, available to the program for labeling purposes, it is convenient to use segments of case labels as a basis for grouping such cases as needed. As an extension of this concept, it is relatively simple to extend case labels to four characters or more where a greater choice of partitioning options is desired.

If partitioning is desired, the program requests information which controls the manner in which the case labels are partitioned:

POSITIONS (begin,end)...?

A case label is composed of from three to eight alphanumeric characters. If read from left to right, the first character would be position 1, the second character position 2, and so on. The program needs to know the starting and ending position of the portion of the case label to be used for regrouping. For example, suppose a user, who had just specified "TIME" as a variable was interested in grouping all events in the collection by the month in which they occurred (i.e., January, February, March, etc.) Case labels for "TIME" take the form "6601","6602", ..."yymm". His response would be "3,4", that is, "use the portion of the case label beginning in character position 3 and ending in character position 4 as the basis for regrouping cases within this variable."

38

Alternately, to group TIME into years, one would specify positions "1,2". To group ACTOR and TARGET into regions of the world one would specify "1,1" partitioning for those variables.

In the development of the PULSE system, the most useful partition was the grouping of 63 event cases into seven event groups. This required the addition of characters to the right of individual event codes, an exception to the general rule that leftmost characters correspond to the most general groups. A user desiring to inspect events grouped in this manner should specify "4,4" partitioning for the EVENT variable.

Next the program types:

    S/D/A variable ...?

"Variable" is the actual name of the variable currently being specified. Responses are "S", for select cases or subgroups within the current variable for use as inclusion criteria; "D", delete cases or subgroups from the variable, such that only cases remaining will be used as inclusion criteria; and "A", include all cases or subgroups in the search.

If the user wishes to "S"elect or "D"elete cases, the program will ask

    HOW MANY CASES...?

The cases to be selected or deleted may then be entered on one or more lines, where each entry is separated by a single blank from every other entry:

    TYPE EACH CASE SEPARATED WITH A BLANK?

If the user enters an invalid case name, the program will type a diagnostic and ask the user to retype it.

At this point the program repeats the specification procedure for the column variable. When a column variable has been satisfactorily specified, the program types:

39

TYPING 'RUN' INSTEAD OF A VARIABLE NAME ENDS CONTROLS
CTL1 VARIABLE ...?

The user may type "RUN" at this point, or he may specify up to
three additional variables as control variables.
Specification of control variables is exactly the same as for
row and column variables. When all variables have been speci-
fied, the program will ask the user for a title for the run.
The title and the user's G.E. user number will appear in the
printout as a means of identifying the run and the source of
the retrieval request.

If more than one retrieval has been specified, the program in-
forms the user that it is ready for the second set of retrieval
instructions and continues on to the "Date Boundaries" request.
Otherwise the interactive sequence is complete. At this point,
the entire set of instructions for retrieval is passed to the
G.E. "background" system. A job identification number ("job
ID") is printed at the user's terminal, and the user is re-
turned to the PULSE "ENTER OPTION". The user should make a note
of his job ID, inasmuch as the job ID number is the only means
by which he will be able to inquire about the status of the re-
trieval or obtain output. Typical background waiting times
range from ten minutes to an hour or more, depending on how
busy the G.E. background system is. Unless the user wishes
to exercise additional PULSE options, while waiting, it is ad-
visable to log off the G.E. system at this point rather than to
incur connect time charges.

Table 9 contains an example of a request for a descriptive
retrieval. In Table 9, the USA and Japan are selected as actors
and targets for retrieval. The scope of the retrieval is limit-
ed to the month of September, 1971, since for purposes of illus-
tration, the peak in the smoothed time series curve from Option
4, Table 8, is being investigated.

40

TABLE 9
Sample Descriptive/Analytic Retrieval Request
(Option 5)

SOURCE   ...?N (CR)   ---"N" specifies <u>New York Times</u>

RETRIEVAL TYPE (A/D)...?D (CR)   ---"D" means descriptive retr.

SUPPRESS   ANALYTIC OUTPUT (Y/N)...?N (CR)

HOW MANY RETRIEVALS...?1 (CR)

READY FOR RETRIEVAL   1

SPAN OF THIS COLLECTION IS 660101 THRU 741231   --- Data range.
   TE BOUNDARIES (YYMMDD.YYMMDD)...?710901 710930 (CR)

ON- VARIABLE   ...?ACTOR (CR)   --- Row variable is "ACTOR"

PARTITION (Y/N)...?N (CR)   --- Use existing case labels.

S/D/A ACTOR   ...?S (CR)   --- Select Actors from
                                                            Appendix A.
HOW MANY CASES...?2 (CR)   --- 2 Actors to be selected.

TYPE EACH CASE SEPARATED WITH A BLANK.
   ?002 740 (CR)   --- U.S., Japan codes.

41.A

358<

TABLE 9 (cont.)

COL.- VARIABLE ...?TARGET (CR)   --- Column variable is "TARGET"

PARTITION (Y/N)...?N (CR)   --- Use existing case labels.

S/D/A TARGET ...?S (CR)   --- Select Targets from
                                              Appendix A.

HOW MANY CASES...?2 (CR)   --- 2 Targets to be selected.

TYPE EACH CASE SEPARATED WITH A BLANK.
  ?002 /40 (CR)   --- U.S., Japan codes.

TYPING 'RUN' INSTEAD OF A VARIABLE NAME ENDS CONTROLS
CTL1 VARIABLE ...?RUN (CR)
                                  --- No control variables.
                                      Continue processing.
SIZE OF BASIC TABLE WILL BE 2 ROWS BY 2 COLUMNS
TITLE...?SAMPLE DESCRIPTIVE RETRIEVAL-- USA-JAPAN, 9/71. (CR) ---User types title

JOB ID = HLB3   --- Foreground segment complete. Background segment
                              initiated. Job ID for this run, HLB3,should be noted.
PLEASE MAKE A NOTE OF YOUR JOB ID.
USE PULSE OPTION 7 TO CHECK FOR OUTPUT
ASSOCIATED WITH THIS ID.

ENTER OPTION (1-7), 0 FOR LIST, 99 TO STOP...?99 (CR) ---No further PULSE
                                            requests. Exit.

USED 5.23 UNITS --- Computer Resources expended in foreground segment.
BST HLB3 (CR)   --- User issues "BSTATUS" command to check background job.
HLB3 AWAITING OFF-LINE FILE RETRIEVAL AT 11:40PST IN ACTIVITY 01 ---waiting for
00000 RETURNED   mag. tape.
00009 SUBMITTED

41.B

Table 10 presents the descriptive and analytic output associated with this run. With the detail provided in Table 10, the negative component of US-Japanese Involvement may be assessed in more detail.

Option 6. Option 6 provides the capability to construct a file containing one or more country-pairs of particular interest to the user, but not otherwise contained in CACI's Dyadic Data File. Option 6 is similar to Option 5 in that it generates requests for analytic retrievals, but because the specifications for retrievals used to construct pair wise data are known, Option 6 provides a highly automatic way of generating these retrievals. For each dyad of interest to the user, two retrieval requests are generated: (1) time by event groups, with country A as actor and country B as target; (2) time by event groups with B as actor and A as target. The requests are processed in background and return to foreground as standard analytic retrievals. In Option 7, the user can cause the data in these tables to be transferred to a random binary file which is compatible in all respects with PULSE requirements. The user may then enter the name of his new Custom Data File for computing under Options 2, 3, and 4.

He may enlarge the file at any time by repeating the process. The sequence of questions posed by Option 6 is straightforward:

    PRIORITY (1=EXPRESS; 2=NORMAL)
    RETRIEVALS FOR HOW MANY COUNTRY-PAIRS...?
    WHICH PAIRS (SEPARATE EACH ENTRY WITH A BLANK)...?

Priority refers to the priority with which the user's retrieval requests will be prepared for background. "1" results in immediate processing, while "2" permits the job to be run with a 30-minute delay. Savings of approximately 40 percent can be realized under normal priority.

42

360<

TABLE 10.
Sample Descriptive/Analytic Retrieval Output
(Option 7)

ILB3   01/28/75

SNUMB = MILB3, ACTIVITY # = 01, REPORT CODE = 12, RECORD COUNT = 00115

* * * P U L S E   D E S C R I P T I V E   R E T R I E V A L * * *

REQ'D BY--CACI   01/28/75   11.65
FROM 710901 THRU 710930, WITH ACTOR   TARGET   RUN

TITLE-- SAMPLE DESCRIPTIVE RETRIEVAL-- USA-JAPAN, 9/71.

710902
JAP REQUESTS USA ASSISTANCE IN WORKING OUT AN AGREEMENT ON
THE TEXTILE EXPORT ISSUE TO REPLACE THE PRESENT VOLUNTARY
PROGRAM

710906
JAP WILL SUPPORT A USA RESOLUTION DECLARING THE OUSTER OF
CHT FROM THE UN AS IMPORTANT QUESTION REQUIRING A TWO-THIRDS
MAJORITY VOTE FOR ADOPTION IN THE GENERAL ASSEMBLY

710909
JAP TELLS USA THAT FOR DOMESTIC POLITICAL REASONS, JAP MIGHT
FIND IT IMPOSSIBLE TO CO-SPONSOR USA RESOLUTIONS DESIGNED TO
PREVENT EXCLUSION OF CHT FROM THE UNO WHILE SEATING CHN

710909
USA CALLS ON JAP FOR A MAJOR UPWARD REVALUATION OF THE YEN,
NEEDED TO SOLVE USA AND WORLD ECONOMIC PROBLEMS

710909
JAP FM FUKUDA SUGGESTS TO USA THAT CHRONIC DEFICIT IN USA
BALANCE OF INTERNATIONAL PAYMENTS COULD BE OVERCOME BY
DOMESTIC MEASURES

710910
JAP FM FUKUDA TURNS DOWN USA PROPOSAL THAT JAP CO-SPONSOR
RESOLUTIONS AIMED AT KEEPING CHT IN THE UNO WHILE ADMITTING
CHN

710910
JAP PROPOSES TO USA TO LIFT QUOTA RESTRICTIONS ON 8 OR 9 USA
EXPORTS INCLUDING COMPUTER EQUIPMENT, LIGHT AIRCRAFT, FUEL
OIL, AND SOME AGRICULTURAL PRODUCTS

710910
USA TURNS DOWN JAP PROPOSAL TO LIFT QUOTA RESTRICTIONS ON 8 OR

43

TABLE 10 (cont.)

ILB3   01/28/75

9 EXPORTS INCLUDING COMPUTER EQUIPMENT, LIGHT AIRCRAFT, FUEL
OIL, AND SOME AGRICULTURAL PRODUCTS

710914
JAP-CAN JOINT COMMUNIQUE CALLS ON USA FOR "EARLY REMOVAL" OF
USA 10% IMPORT SURTAX

710920
USA PRESS SEC ZIEGLER DENIES JAP REPORTS THAT PRS NIXON WILL
FLY DIRECTLY FROM ANCHORAGE TO CHN

710924
USA ASKS JAP TO STATE BY THE END OF SEPTEMBER WHETHER JAP WILL
ACCEPT A GOVERNMENT-LEVEL AGREEMENT RESTRAINING JAP TEXTILE
EXPORTS TO USA MARKETS

710927
JAP EMPEROR HIROHITO MEETS WITH USA PRS NIXON

710927
USA PRS NIXON MEETS WITH JAP EMPEROR HIROHITO

710927
JAP EMPEROR HIROHITO EXPRESSES APPRECIATION TO USA PRS NIXON
FOR FLYING TO ANCHORAGE TO MEET HIM AND TO USA PEOPLE FOR
THEIR HELP TO JAP SINCE 1945

710930
USA THREATENS TO IMPOSE IMPORT QUOTAS ON JAP TEXTILES UNLESS
A PLAN FOR SETTLEMENT OF THE LONG-STANDING DISPUTE IS
ACCEPTED

710930
JAP REJECTS USA DEMAND THAT JAP REPLY TO USA PLAN TO IMPOSE
IMPORT QUOTAS ON JAP TEXTILES BY TOMORROW

710930
JAP MIN OF INTERNATIONAL TRADE AND INDUSTRY TANAKA ASKS USA
FOR INFORMATION ON WHETHER USA IS PLANNING TO EXEMPT JAP FROM
10% IMPORT SURTAX ON TEXTILES IF A GOVERNMENTAL TEXTILE PACT
IS CONCLUDED BETWEEN USA AND JAP

* * * P U L S E   A N A L Y T I C   R E T R I E V A L * * *

REQ'D BY--CACI   01/28/75   11.65
FROM 710901 THRU 710930, WITH ACTOR   TARGET   RUN
IN THIS RUN,   17 EVENTS WERE USED OUT OF   494 READ.

44

362<

TABLE 10 (cont.)

ILB3   01/28/75

TITLE-- SAMPLE DESCRIPTIVE RETRIEVAL-- USA-JAPAN, 9/71.

    TARGET   >
         002   740   TOTALS

ACTOR
  002   0.   6.   6.
  740   11.   0.   11.

  TOTALS 11.   6.   17.
  MEAN   5.5   3.0   8.5

RETRIEVAL   1 COMPLETED.

45

Next, the user is asked to specify the number of country pairs to be included in his Custom Data File. Up to 50 pairs (100 countries) may be requested at a time.

At this point, the program expects the user to enter the numerical codes for each member of each pair, chosen from Appendix A. Codes may be entered several to a line, but each code must be separated from other codes with a single blank. Commas are not acceptable as delimiters. The entries should follow the form, "A_1 B_1 A_2 B_2 A_3 B_3 ...A_n B_n", where the first member of each pair will be treated as "A" and the second as "B" in future references to this pair under Options 2, 3, and 4.

In addition to the country codes listed in Appendix A, the program will also accept the following codes for selected country groups: "WORLD", consisting of all countries; "OPEC", consisting of members of the Organization of Petroleum Exporting Countries; "ARABS", consisting of Middle Eastern Arab states; "ENA", consisting of North Atlantic and Western European countries; and "WGB", which groups West Germany and West Berlin as a single code. A country pair may be formed as a combination of any two numerical codes or special designations. For example, a pair consisting of Japan and all OPEC countries would be specified as "740 OPEC". Interactions between OPEC countries and North Atlantic-Western European countries would be referenced as "OPEC ENA", and so forth. If all codes cannot be entered on a single line, the user should type a carriage return at the end of the current line, wait for a question mark, and continue typing on a new line. When the required number of codes has been typed, the program informs the user of any invalid entries and affords him the opportunity to correct them. The program next proceeds to generate instructions for the required number of analytic retrievals. It then causes Option 5 to process these instructions automatically, with no further action required of the user.

In the process, two scratch files are created by the program in the user's catalog: the first file contains retrieval parameters

46

which will be passed automatically to Option 5. The second file
contains the results of the Option 5 run generated by this option.
The names of both files are printed at the terminal when the setup
procedure is complete. The latter of these two files will contain
the results of the Option 5 run as soon as it is completed. If
the user has specified "normal priority", at least 30 minutes
must elapse before Option 5 can be run. Under "express priority",
the Option 5 run begins as soon as G.E. MARK III resources can
be allocated for this purpose, usually within one to five minutes.
The latter file will be empty until this run is complete. When
Option 5 has run, the user may inspect the latter scratch file to
the extent desired. At minimum, the user should obtain the back-
ground Job ID occurring near the end of this file. This Job ID
should be saved for use as input to Option 7, which will complete
the construction of the user's Custom Data File. When the user
has made a record of his background Job ID, both scratch files
should be purged to avoid further storage charges.

Option 7. Option 7 is designed to manage output generated by
Option 5 and Option 6 retrieval requests. Its conversational
sequence is:

     RETRIEVAL HANDLER...TYPE IN YOUR JOB ID...?

The user responds with his four character job identification.
If he has forgotten his Job ID, a response of "ALL" will cause
the G.E. System to type out the status(es) of all pending and
completed background jobs for his user number. The appropriate
Job ID may then be entered at that point. If the job is complete,
the output is moved from the batch output library into the user's
foreground user number. The foreground file containing the output
will have the same identification as the background Job ID. If
the job does not exist or is incomplete, a diagnostic is printed
and the program terminates.

Once the output is in foreground, the program types

     OUTPUT OPTION ('LIST', 'CDF', 'PURGE', 'STOP', 'NEXT')...?

47

The response   "LIST" causes the output to be listed, with
Pagination, at the user's terminal. The first line of output
to be typed contains the number of records (i.e., lines) of
output to be printed. If the line count is substantial, the
user may elect to terminate the typeout with the break key
and use the G.E. Remote Media Services capability to transfer
his output to a high speed printer or card punch.

If the response is "CDF", the program types:
       HOW MANY DYADS IN FILE xxx...?
The user responds with the number of pairs (not separate
retrievals) in his output file. The program then requests the
name of the user's Custom Data File:

       CUSTOM DATA FILE NAME...?

If the file exists, it is enlarged to accomodate the additional
country pairs. If not, a random binary file with the name speci-
fied is created in the user's catalog. The data is compressed
and formatted in a manner which PULSE Options 2,3, and 4 will
recognize, and the program returns to the "Output Option" stage.
If difficulties are encountered in reading the input file, a
diagnostic is printed and the program repeats the "Output Option"
query.

A response of "PURGE" removes the output file from foreground
and eliminates the background components of the retrieval as well.
It is recommended that the user "PURGE" his output after "LIST"ing
it, or after completing the construction of a Custom Data File
with the "CDF" output option.

A response of "STOP" indicates that the user has no further re-
quests of Option 7. The program returns to the PULSE "ENTER OPTION"
level. If the user has more than one background job to inspect,
he may type "NEXT" to restart Option 7. "NEXT" causes the program
to ask for a new background Job ID.

48

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.

Independent Countries

CODE	ENTITY	ABBR.
700	Afghanistan	AFG
339	Albania	ALB
615	Algeria	ALG
232	Andorra	AND
555	Angola	ANG
160	Argentina	ARG
900	Australia	AUL
305	Austria	AUS
695	Bahrain	BAH
765	Bangladesh	BGD
053	Barbados	BAR
211	Belgium	BEL
266	Berlin/East	EBE
267	Berlin/West	WBE
760	Bhutan	BHU
145	Bolivia	BOL
571	Botswana	BOT
140	Brazil	BRA
355	Bulgaria	BUL
775	Burma	BUR
516	Burundi	BUI
811	Cambodia	CAM
471	Cameroun	CAO
020	Canada	CAN
482	Central African Republic	CEN

CODE	ENTITY	ABBR.
780	Ceylon (now Sri Lanka)	SRI
483	Chad	CHA
155	Chile	CHL
710	China, People's Republic of	CHN
713	China, Republic of	CHT
100	Columbia	COL
484	Congo (Brassaville)	COP
490	Congo (Kinshasa) (now Zaire)	ZAI*
094	Costa Rica	COS
040	Cuba	CUB
352	Cyprus	CYP
315	Czechoslovakia	CZE
434	Dahomey	DAH
390	Denmark	DEN
042	Dominican Rep.	DOM
130	Ecuador	ECU
651	Egypt	ECY*
092	El Salvador	ELS
440	Equitorial Guinea (includes Fernando Po)	GUE
530	Ethiopia	ETH
375	Finland	FIN

* Until 1975, the alpha codes were CEY for Sri Lanka (previously Ceylon), CON for Zaire (previously Congo (Kinshasa)), and UAR for Egypt.

A.1

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
220	France	FRN	812	Laos	LAO
980	Fiji	FIJ	660	Lebanon	LEB
481	Gabon	GAB	570	Lesotho	LES
420	Gambia	GAM	450	Liberia	LIB
265	Germany/Dem. Rep.	GME	620	Libya	LBY
255	Germany/Fed. Rep.	GMW	223	Liechtenstein	LIC
452	Ghana	GHA	212	Luxemburg	LUX
350	Greece	GRC	580	Malagasy	MAG
044	Greneda	GRE	553	Malawi	MAW
090	Guatemala	GUA	820	Malaysia	MAL
438	Guinea	GUI	782	Maldive	MAD
445	Guinea-Bissau	GBI *	432	Mali	MLI
110	Guyana	GUY	338	Malta	MLT
041	Haiti	HAI	590	Mauritius	MAR
091	Honduras	HON	435	Mauritania	MAU
310	Hungary	HUN	070	Mexico	MEX
395	Iceland	ICE	221	Monaco	MOC
750	India	IND	712	Mongolia	MON
850	Indonesia	INS	600	Morocco	MOR
630	Iran	IRN	557	Mozambique	MOZ
645	Iraq	IRQ	698	Muscat and Oman	MOM
205	Ireland	IRE	921	Nauru	NAU
666	Israel	ISR	790	Nepal	NEP
325	Italy	ITA	210	Netherlands	NTH
437	Ivory Coast	IVO	920	New Zealand	NEW
051	Jamaica	JAM	093	Nicaragua	NIC
740	Japan	JAP	436	Niger	NIR
663	Jordan	JOR	475	Nigeria	NIG
501	Kenya	KEN	385	Norway	NOR
731	Korea/North	KON	770	Pakistan	PAK
732	Korea/South	KOS	095	Panama	PAN
690	Kuwait	KUW			

* Until 1974, when Portuguese Guinea became independent, PGU was the alpha code for Guinea-Bissau.

CODE	ENTITY	ABBR.	CODE	ENTITY	ABBR.
913	Papua New Guinea	PNG	200	United Kingdom	UNK
150	Paraguay	PAR	002	USA	USA
135	Peru	PER	439	Upper Volta	UPP
840	Philippines	PHI	165	Uruguay	URU
290	Poland	POL	328	Vatican	VAT
235	Portugal	POR	101	Venezuela	VEN
696	Qatar	QAT	816	Vietnam/North	VTN
552	Rhodesia	RHO	817	Vietnam/South	VTS
360	Rumania	RUM	990	Western Samoa	WSM
517	Rwanda	RWA	678	Yemen	YEM
331	San Marino	SAN	345	Yugoslavia	YUG
670	Saudi Arabia	SAU	551	Zambia	ZAM
433	Senegal	SEN			
451	Sierra Leone	SIE			
830	Singapore	CIN		**Colonies or Protectorates**	
520	Somalia	SOM			
560	South Africa	SAF	035	Bahamas (Br.)	BAS
681	South Yemen	SYE	030	Bermuda (Br.)	BER
230	Spain	SPN	085	British Honduras	BHO
625	Sudan	SUD	115	French Guiana	FGU
572	Swaziland	SWA	720	Hong Kong (Br.)	HOK
380	Sweden	SWD	721	Macao (Port.)	MAC
225	Switzerland	SWZ	556	Southwest Africa	SAW
652	Syria	SYR	430	Spanish Sahara	SPS
510	Tanzania	TAZ	996	All other Colonies/	
800	Thailand	TAI		Protectorates	
461	Togo	TOG			
052	Trinidad-Tobago	TRI			
616	Tunisia	TUN			
640	Turkey	TUR			
500	Uganda	UGA			
365	USSR	USR			
675	United Arab Emirates	UAE			

A.3

CODE	ENTITY	ABBR.

International Organizations or Multilateral Groups of Nations

CODE	ENTITY	ABBR.
198	Alliance for Progress	AFP
199	Organization of American States	OAS
206	Irish Republican Army	IRA
394	Warsaw Pact	WAR
396	North Atlantic Treaty Organization (NATO)	NAT
397	European Economic Community (EEC)	EEC
398	European Free Trade Association	EFT
399	United Nations (only)	UNO
599	Organization for African Unity	OAU
649	Kurds	KUR
697	Palestine Liberation Organization	PLO
699	Arab League	ARL
818	Vietcong	VCG
890	Provisional, recognized alternative governments (e.g., Prince Sihanouk's government-in-exile) or deposed rulers, when new government not yet recognized (e.g., Archbishop Makarios).	
985	World Bank (IBRD, IDA)	WBK
986	International Monetary Fund (IMF)	IMF
991	International terrorist groups	TER
992	Southeast Asia Treaty Organization (SEATO)	SEA
993	International Red Cross	IRC
997	All other international organizations	INT
998	Any other multilateral group	MLG
999	Not stated, unidentified target	NSC

1. **YIELD**

011 Surrender, yield to order, submit to arrest

012 Yield position; retreat; evacuate

013 Admit wrongdoing; retract statement

2. **COMMENT**

021 Explicit decline to comment

023 Comment on situation-neutral, hope, express concern

025 Explain policy or future position

3. **CONSULT**

031 Meet with; at neutral site; or send note; stay in same place

032 Visit; go to; leave country

033 Receive visit; host

4. **APPROVE**

041 Praise, hail, applaud, condolences, ceremonial greetings, thanks

042 Endorse other policy or position, give verbal support

5. **PROMISE**

051 Promise own policy support

052 Promise material support

053 Promise other future support action

054 Assure; reassure

6. **GRANT**

061 Express regret; apologize

062 Give state invitation

063 Grant Asylum

064 Grant privilege, diplomatic recognition de facto relations, etc.

065 Suspend negative sanctions; truce

066 Release and/or return persons or property

7. **REWARD**

071 Extend economic aid (gift and/or loan)

072 Extend military assistance; joint military exercises

073 Give other assistance

8. **AGREE**

081 Make substantive agreement

082 Agree to future action or procedure; agree to meet, to negotiate, accept state invitation

9. **REQUEST**

091 Ask for information

092 Ask for policy assistance; seek

093 Ask for material assistance

094 Request action; call for; ask for asylum

095 Entreat; plead for; appeal to; help

10. PROPOSE

101 Offer proposal

102 Urge or suggest policy or action

11. REJECT

111 Turn down proposal; reject protest, demand, threat, etc.

112 Refuse; oppose; refuse to allow; exclude; fail to reach agreement

12. ACCUSE

121 Charge; criticize; blame; disapprove

13. PROTEST

131 Make complaint (not formal)

132 Make formal complaint or protest

14. DENY

141 Deny an accusation, attributed policy, action, role, or position

15. DEMAND

150 Issue order or command, insist; demand compliance, etc.

16. WARN

160 Give warning

17. THREATEN

171 Threat without specific negative sanctions

172 Threat with specific non-military negative sanctions

173 Threat with force specified

174 Ultimatum; threat with negative sanctions and time limit specified

18. DEMONSTRATE

181 Non-military demonstration; walk out on; boycott

182 Armed force mobilization, exercise, and/or display, blockade

19. REDUCE RELATIONSHIP (As Neg. Sanction)

191 Cancel or postpone planned event

192 Reduce routine international activity; recall officials, etc.

193 Reduce or suspend aid or assistance

194 Halt negotiations

195 Break diplomatic relations

20. EXPEL

201 Order personnel out of country; deport

202 Expel organization or group

21. SEIZE

211 Seize position or possessions

212 Detain or arrest person(s)

22. FORCE

221 Non-military destructive act

222 Military injury-destruction, bomb

223 Military engagement

APPENDIX C. ARENA CODES

010 Arab-Israel Interaction/General Conflict

013 1967 Mideast War (All Mideast events during 1967, focusing on June war)

020 Vietnam Conflict (general, policy statements)

025 Paris Peace Talks (anything said at the talks, or concerning the talks)

027 Vietnam military engagements (physical hostilities starting in October 1969)

030 Rhodesian Independence

040 Berlin Conflict

050 Sino-Soviet Conflict

060 Indonesia-Malaysia Disputes

070 India-China Conflicts

080 USA-China Conflicts

090 India-Pakistan Disputes

100 Cyprus Independence·

110 North Korea - South Korea Interactions

120 France - NATO Disputes

130 West German - East Europe Disputes

140 Yemeni Conflicts (South Yemen vs. Yemen Republic)

150 Dominican Republic - USA Conflict

160 Chinese Red Guard Activities

170 Czechoslovakia - Soviet Union Disputes

180 Biafra - Nigeria Conflict

190 Strategic Arms Limitation Talks (SALT)

200 Non-Government Sanctioned Violence (events with non-official actors and/or targets)

210 Cambodian Conflict

220 International Terrorism (as a subject of communication)

230 Northern Ireland Conflict (no internal Northern Ireland actions)

240 Kurd - Iraq Conflict

300 Monetary, Balance of Payments

C.1

APPENDIX C.   (cont.)

310   Multinational Corporations, Private Investments
320   Government Aid
330   Trade, tariffs
340   Resources
350   Other Economics

374<

APPENDIX D.   DYADIC DATA FILE COUNTRY PAIRS

US-World	001	US-UK	033
USSR-World	002	US-Europe, North Atlantic	034
Rumania-World	003	US-Canada	035
Czechoslovakia-World	004	US-West Germany/W. Berlin	036
Yugoslavia-World	005	US-Turkey	037
CPR-World	006	US-Greece	038
North Vietnam-World	007	US-Laos	039
North Korea-World	008	US-South Vietnam	040
Cuba-World	009	US-Other South East Asia	041
France-World	010	US-Japan	042
Laos-World	011	US-Pakistan	043
South Vietnam-World	012	US-India	044
Japan-World	013	US-Iran	045
Pakistan-World	014	US-Israel	046
India-World	015	US-Arabs	047
Aul.,New Zeal.-World	016	US-UAR	048
Iran-World	017	US-North Africa	049
Israel-World	018	US-White Colonia Africa	050
Arabs-World	019	US-Other Sub Saharan Afr.	051
UAR-World	020	USSR-Rumania	052
UK-World	021	USSR-Czechoslovakia	053
US-USSR	022	USSR-Other East Europe	054
US-Rumania	023	USSR-Yugloslavia	055
US-Czechoslovakia	024	USSR-CPR	056
US-Other East Europe	025	USSR-North Vietnam	057
US-Yugoslavia	026	USSR-North Korea	058
US-CPR	027	USSR-Cuba	059
US-North Vietnam	028	USSR-France	060
US-Cuba	030	USSR-UK	061
US-South America	031	USSR-Europe, N.Atlantic	062
US-France	032	USSR-South Vietnam	064

D.1

USSR-Japan	065	UK-W.Germany	100
USSR-Pakistan	066	Greece-Turkey	101
USSR-India	067	Laos-N.Vietnam	102
USSR-Iran	068	Laos-S. Vietnam	103
USSR-Israel	069	S.Vietnam-Cambodia	104
USSR-Arabs	070	Pakistan-India	105
USSR-UAR	071	Israel-Arabs	106
USSR-N.Africa	072	Arabs-Other S.S. Africa	107
USSR-Other S.S. Africa	073	UAR-Israel	108
USSR-Turkey	074	N.Africa-Israel	109
USSR-W. Germany	075	Wh.Col.Africa-Other SS Afr.	110
USSR-Canada	076	Tot E Europe-Eur.N.Atlantic	111
CPR-Rumania	077	Tot E Europe-W. Germany	112
CPR-Other E.Europe	078	Albania-World	113
CPR-N. Vietnam	079	Warsaw-NATO	114
CPR-Taiwan	080	S.S. Africa-World	115
CPR-UK	081	US-Tot E. Europe	116
CPR-Other SS Africa .	082	US-Tot SE Asia	117
CPR-North Korea	083	USSR-Tot E. Europe	118
CPR-Laos	084	USSR-Tot SE Asia	119
CPR-S.Vietnam	085	N.Vietnam-Tot SE Asia	120
CPR-Japan	086	US-Argentina	121
CPR-Pakistan	087	US-Brazil	122
CPR-India	088	US-Peru	123
Rumania-Other E. Eur.	089	US-Mexico	124
Czech-Other E. Eur.	090	US-Sweden	125
N.Vietnam-S.Vietnam	091	US-E.Germ/E.Berlin	126
N.Vietnam-Other SE Asia	092	US-Italy	127
N.Korea-S.Korea	093	US-Spain	128
Cuba-S. America	094	US-Algeria	129
Cuba-Mexico, etc	095	US-Jordan	130
France-UK	096	US-Indonesia	131
France-Israel	097	US-Taiwan	132
France-W. Germany	098	US-Philippines	133
UK-White Col Africa	099	US-Thailand	134

US-Cambodia	135	US-World*	164
US-S.Korea	136	N.Vietnam-World*	165
US-Australia	137	S.Vietnam-World*	166
USSR-Finland	138	US-N.Vietnam*	167
USSR-E.Germ/E.Ber.	139	N.Vietnam-S.Vietnam*	168
USSR-Italy	140	N.Vietnam-Oth SE Asia*	169
USSR-Albania	141	N.Vietnam-Tot SE Asia*	170
W.Ger/W.Ber-Czech	142	US-Japan Political	171
W.Ger/W.Ber-Poland	143	US-Japan Military	172
W.Germany/W.Berlin- E.Germany/E.Berlin	144	US-Japan Economic	173
UK-Rhodesia	145	USSR-CPR Political	174
UK-Israel	146	USSR-CPR Military	175
UAR-Syria	147	USSR-CPR Economic	176
UAR-Jordan	148	Ind-Pak Political	177
Lebanon-Israel	149	Ind-Pak Military	178
Syria-Israel	150	Ind-Pak Economic	179
Jordan-Israel	151	USSR-Czech Political	180
CPR-Albania	152	USSR-Czech Military	181
CPR-Indonesia	153	USSR-Czech Economic	182
Philippines-Malaysia	154	CPR-Japan Political	183
Malaysia-Indonesia	155	CPR-Japan Military	184
World-World	156	CPR-Japan Economic	185
Tot E Eur-Tot E Eur	157	USSR-Japan Political	186
S.America-S.America	158	USSR-Japan Military	187
S.E. Asia-S.E. Asia	159	USSR-Japan Economic	188
Arabs-Arabs	160	US -CPR Political	189
N.Africa-N.Africa	161	US -CPR Military	190
Oth SS Afr.-Oth SS Afr	162	US -CPR Economic	191
Warsaw-Warsaw	163	US -USSR Political	192
		US -USSR Military	193
		US -USSR Economic	194
		US -OPEC	195

---

* Includes North Vietnamese events in Groups 1 and 7
coded since September, 1969.

D.3

APPENDIX E. RELATIONSHIP BETWEEN WEIS EVENT CATEGORIES
AND AGGREGATED GROUPS

Aggregated Groups	WEIS Code	WEIS Event Categories
1. Military Incidents	223	military engagement
2. Coercion	150	issue order, insist on compliance
	160	give warning
	171	threat without specific negative sanctions
	172	threat with specific non-military negative sanctions
	173	threat with force specified
	174	ultimatum, time limit specified
	182	military mobilization, exercise, or display
	195	break diplomatic relations
	201	order personnel out of country
	202	expel organization or group
	212	detain or arrest persons
3. Pressure	111	turn down proposal, reject protest, etc.
	112	refuse, oppose, refuse to allow
	121	charge, criticize, blame
	122	denounce, denigrate, abuse
	131	informal complaint
	132	formal complaint or protest
	141	deny an accusation
	142	deny an attributed policy, action, or position
	191	cancel or postpone planned event
	192	reduce routine international activity
	193	reduce or halt aid
	194	halt negotiations
4. Communication/ Consultation	025	explain policy or future position
	031	meet at neutral site, send note
	032	visit, go to
	033	receive visit, host
	062	give state invitation
	091	ask for information
	094	request action, call for
	101	offer proposal
	102	urge or suggest action or policy

APPENDIX E. (cont.)

5. Support/Agreement	041	praise, hail
	042	endorse other policy or position
	051	promise own policy support
	052	promise material support
	053	promise other future support
	054	assure, reassure
	064	grant privilege, diplomatic recognition, etc.
	071	extend economic aid
	072	extend military aid
	073	extend other assistance
	081	make substantive agreement
	082	agree to future action or procedure
6. Reconciliation	013	admit wrongdoing, retract statement
	061	express regret, apologize
	065	suspend negative sanctions, truce
	066	release or return persons or property
7. Military Disengagement	011	surrender, yield to order
	012	yield position, retreat, evacuate
8. Excluded WEIS Categories	021	explicit decline to comment
	022	comment on situation-pessimistic
	023	comment on situation-neutral
	024	comment on situation-optimistic
	063	grant asylum
	092	ask for policy assistance
	093	ask for material assistance
	095	entreat, plead for, appeal to, help
	181	non-military demonstration, walk-out on
	211	seize position or possessions
	221	non-injury destructive act
	222	non-military injury-destruction

E.2

APPENDIX F.   INTERACTION WITH THE G.E. SYSTEM

In order to use the PULSE System, the user must have access to
a communications terminal suitable for use in a timesharing en-
vironment, such as a Teletype, Datanet, Terminet, CRT, or equiv-
alent.   The user should then request his local General Electric
Information Services representative to assign him a user number
in the catalog reserved for CACI's PULSE System.   The user should
expressly request that his number be validated for background use
and remote Media Services.   In addition, the user may wish to re-
quest validation for "project ID", as an aid to accounting where
use of the number by more than one individual within his organiza-
tion is anticipated.   The G.E. minimum charge associated with this
type of number is typically on the order of one dollar ($1.00) per
month.   There is no CACI minimum use requirement.   The user may
begin using the PULSE system directly.   All costs to the user are
a function of use, and will be billed directly by G.E. or its
authorized distributor.

The following information may be useful to frequent users of
PULSE Option 5.   Option 5 differs substantially from other
PULSE options inasmuch as it consists of two programs.   The
first program executes in an interactive mode in Foreground
and requests the information it needs directly from the user.
This program is entered when the user specifies Option 5 in
response to the "ENTER OPTION" query.   When the user request
phase is complete, a job is spawned to the Background System,
containing internal data developed in Foreground.   This job
is assigned a four character identification (JOB ID) which is
printed at the terminal.

The user need not remain connected to the G.E. system beyond
this point.   The Background job examines the information passed
from Foreground and requests mounting of appropriate magnetic

.F.1

tapes.   It reads the tapes, constructs the output file, and
terminates.   While the job actually takes very little time to
run, it may have to wait for indefinite intervals before the
Background System is ready for it.

To determine the status of the Background portion of the re-
trieval process, the user enters:

    BSTATUS JOBID OR BST JOBID

where JOBID is the job identification number for a particular
background job.   It can be expected that a run may have any
of the following statuses:

        WAITING
        TRANSMITTED
        AWAITING OFF-LINE FILE RETRIEVAL
        AWAITING ALLOCATION
        AWAITING CORE
        EXECUTING
        TERMINATING
        DONE

When a job is "DONE" the output may be examined as any other
Background job by using the "BEDIT" command (Refer to the G.E.
"Foreground-Background Interface Manual").   PULSE retrievals
have an activity code (AC) of "01" and a report code (RC) of
"12".   This report may be inspected directly, if desired, in
lieu of calling up PULSE Option 7.

The user who is not familiar with the "BEDIT" commands, or the
user who desires high speed listings, cards, or the creation
of a CDF file, should rely instead on PULSE Option 7 as des-
cribed above.

The following varimax rotated factor matrices refer to Table 1 in Chapter 5 (Issue Area and Dyadic Dimensions of Japanese International Behavior). Each matrix represents a different subsample of international events controlling for directed dyadic interaction and/or issue area content. Seven unweighted behavioral variables for 135 one-week observations were entered in each factor analysis, except if the sum of a variable over all observations equaled zero. Squared multiple correlations were placed in the diagonals. Factor loadings in the following tables were multiplied by 100, and loadings of 50 and above were underlined.

Most of matrices presented here indicate that only a few behavioral variables in each factor analysis have fairly high communalities. In other words, the percentage of total variance accounted for by the combination of all common factors is low. This is further amplified by H^2, which indicates the degree to which the variables can be empirically patterned. In almost all cases, H^2 varies between 30 and 40 percent. Although these results suggest that the variables for each dyad and/or issue are not highly patterned, those variables whose variance is accounted for by the factor solutions provide an indication of the most prominent behavior in each context.

Japan to World - All (Cell 1A)

	I	II	III	h^2
Yield	-12	36	-10	.16
Give	21	44	-05	.25
Support	74	10	-03	.57
Communicate	85	15	-07	.77
Protest	46	-05	-09	.22
Threaten	04	22	12	.07
Coei e	-12	-03	51	.29
% Total Variance	22.8	6.0	4.6	33.3

Japan to World - Pol/Mil Security (Cell 2A)

	I	II	h^2
Yield	-10	41	.19
Give	03	21	.05
Support	46	-02	.21
Communicate	89	02	.79
Protest	43	27	.27
Threaten	22	69	.53
% Total Variance	21.0	12.9	34.0

Japan to World - Diplomatic Relations (Cell 3A)

	I	II	III	h^2
Yield	-11	23	-04	.07
Give	20	68	05	.52
Support	80	10	-18	.68
Communicate	76	31	05	.68
Protest	43	-16	30	.30
Threaten	06	11	-00	.02
Coerce	-03	00	55	.30
% Total Variance	20.9	9.8	6.2	36.7

Japan to World - Resource Dependence (Cell 4A)

	I	II	h^2
Give	18	78	.66
Support	52	10	.29
Communicate	71	35	.63
Protest	32	-01	.11
Threaten	01	21	.05
% Total Variance	18.5	16.3	34.8

Japan to World – Trade (Cell 5A)

	I	II	h^2
Give	14	02	.02
Support	78	14	.63
Communicate	50	51	.51
Protest	02	66	.44
Threaten	09	10	.02
% Total Variance	17.8	14.6	32.4

World to Japan – All (Cell 1B)

	I	II	h^2
Yield	28	18	.11
Give	51	-01	.26
Support	69	21	.52
Communicate	74	23	.60
Protest	00	68	.46
Threaten	06	39	.16
Coerce	31	-09	.11
% Total Variance	20.9	10.8	31.7

World to Japan – Pol/Mil Security (Cell 2B)

	I	II	III	h^2
Yield	03	00	49	.24
Give	42	35	04	.32
Support	90	-17	19	.88
Communicate	48	-12	-06	.25
Protest	06	-25	-02	.07
Threaten	11	-27	-06	.09
Coerce	09	52	-17	.31
% Total Variance	17.9	8.4	4.6	30.9

World to Japan – Diplomatic Relations (Cell 3B)

	I	II	III	h^2
Yield	38	-01	-08	.14
Give	46	24	47	.50
Support	81	05	04	.66
Communicate	72	26	21	.64
Protest	12	56	-13	.35
Threaten	00	20	00	.04
Coerce	-02	-10	38	.16
% Total Variance	22.2	7.1	6.4	35.6

World to Japan - Resource Dependence (Cell 4B)

	I	II	h^2
Give	45	08	.21
Support	71	45	.73
Communicate	43	25	.26
Protest	04	08	.01
Threaten	13	52	.29
% Total Variance	18.7	11.2	30.0

World to Japan - Trade (Cell 5B)

	I	II	h^2
Yield	-10	58	.36
Give	31	04	.10
Support	72	-05	.52
Communicate	37	85	.88
Protest	39	06	.16
Threaten	47	01	.22
% Total Variance	19.1	18.3	37.3

Japan to U.S. - All (Cell 1C)

	I	II	III	h^2
Yield	-01	24	-04	.06
Give	14	-23	-00	.08
Support	48	-11	36	.38
Communicate	53	-13	13	.32
Protest	63	22	-10	.46
Threaten	19	61	10	.44
Coerce	04	02	56	.33
% Total Variance	14.0	8.3	7.1	29.6

Japan to U.S. - Pol/Mil Security (Cell 2C)

	I	II	h^2
Yield	-10	36	.14
Give	-02	-10	.01
Support	67	01	.46
Communicate	45	03	.20
Protest	45	37	.35
Threaten	22	54	.34
% Total Variance	15.7	9.5	25.0

Japan to U.S. - Diplomatic Relations (Cell 3C)

	I	II	h^2
Give	09	27	.09
Support	70	-18	.54
Communicate	39	19	.19
Protest	52	03	.28
Threaten	11	11	.02
Coerce	-06	13	.02
% Total Variance	26.0	3.1	19.0

Japan to U.S. - Trade (Cell 5C)

	I	II	h^2
Give	06	65	.43
Support	42	14	.20
Communicate	74	25	.62
Protest	62	43	.59
Threaten	36	-07	.14
% Total Variance	25.1	14.3	39.6

U.S. to Japan - All (Cell 1D)

	I	II	III	h^2
Yield	06	55	15	.34
Give	67	-03	21	.51
Support	63	-10	26	.49
Communicate	68	35	-05	.59
Protest	14	05	47	.84
Threaten	-02	-04	-18	.03
Coerce	-05	-02	-01	.004
% Total Variance	19.5	6.5	5.6	31.5

U.S. to Japan - Pol/Mil Security (Cell 2D)

	I	II	III	h^2
Yield	-00	-03	41	.18
Give	38	20	-09	.19
Support	28	14	00	.10
Communicate	86	-17	12	.79
Protest	00	-00	39	.16
Threaten	12	72	-02	.55
Coerce	-03	-01	-03	.03
% Total Variance	14.0	9.0	5.2	28.2

U.S. to Japan - Diplomatic Relations (Cell 3D)

	I	II	h^2
Yield	<u>74</u>	14	.58
Give	<u>34</u>	26	.18
Support	41	<u>64</u>	.59
Communicate	<u>68</u>	-04	.46
Protest	-03	24	.06
Threaten	-05	-05	.01
% Total Variance	22.0	9.6	31.3

U.S. to Japan - Trade (Cell 5D)

	I	II	h^2
Give	<u>85</u>	-03	.72
Support	<u>53</u>	17	.31
Communicate	<u>43</u>	<u>74</u>	.75
Protest	<u>56</u>	-08	.33
Threaten	-07	24	.06
% Total Variance	30.4	13.1	43.4

Japan to USSR - All (Cell 1E)

	I	II	III	h^2
Yield	00	06	47	.22
Give	25	<u>73</u>	36	.75
Support	40	<u>28</u>	02	.25
Communicate	<u>91</u>	15	18	.88
Protest	33	-16	<u>52</u>	.43
Threaten	01	22	-00	.05
Coerce	-03	-10	02	.01
% Total Variance	16.9	10.7	9.6	37.0

Japan to USSR - Pol/Mil Security (Cell 2E)

	I	II	III	h^2
Give	12	-03	33	.12
Support	40	-13	11	.20
Communicate	<u>74</u>	27	02	.62
Protest	02	<u>76</u>	06	.58
Threaten	-02	12	<u>68</u>	.48
% Total Variance	14.6	13.8	11.8	40.0

Japan to USSR - Diplomatic Relations (Cell 3E)

	I	II	III	h^2
Yield	-01	-00	-17	.03
Give	60	31	-35	.58
Support	58	-08	18	.38
Communicate	71	38	20	.71
Protest	07	53	11	.30
Threaten	04	10	21	.06
% Total Variance	20.4	9.3	4.7	34.3

Japan to USSR - Resource Dependence (Cell 4E)

	I	II	h^2
Give	36	09	.14
Support	38	51	.41
Communicate	72	06	.54
Protest	29	02	.09
Threaten	-01	65	.44
% Total Variance	17.8	14.4	32.4

USSR to Japan - All (Cell 1F)

	I	II	III	h^2
Yield	-05	-06	59	.37
Give	53	29	23	.44
Support	55	23	21	.42
Communicate	69	11	-08	.50
Protest	32	-15	-04	.13
Threaten	02	04	06	.01
Coerce	06	66	00	.45
% Total Variance	17.0	9.1	6.8	33.1

USSR to Japan - Pol/Mil Security (Cell 2E)

	I	II	III	h^2
Yield	25	02	-02	.07
Give	39	53	-03	.43
Support	53	12	15	.33
Communicate	14	00	11	.03
Protest	43	-06	-02	.19
Threaten	-02	-03	65	.44
Coerce	-08	48	-01	.24
% Total Variance	10.4	7.7	6.8	24.7

USSR to Japan - Diplomatic Relations (Cell 3F)

	I	II	III	h^2
Yield	21	-26	63	.51
Give	63	01	07	.42
Support	56	09	08	.34
Communicate	69	61	-05	.88
Protest	04	22	-03	.06
Threaten	00	12	-02	.02
Coerce	37	-38	-32	.29
% Total Variance	20.2	9.6	6.0	36.0

USSR to Japan - Resource Dependence (Cell 4F)

	I	II	h^2
Give	78	13	.64
Support	67	20	.49
Communicate	21	52	.32
Protest	12	23	.07
Threaten	-00	-19	.04
% Total Variance	22.7	8.3	31.2

Japan to PRC - All (Cell 1G)

	I	II	h^2
Give	31	48	.33
Support	66	23	.49
Communicate	84	09	.73
Protest	29	-04	.09
Threaten	-04	38	.15
Coerce	06	04	.01
% Total Variance	22.4	7.4	30.0

Japan to PRC - Diplomatic Relations (Cell 3G)

	I	II	h^2
Give	39	51	.41
Support	63	02	.41
Communicate	83	-08	.70
Protest	27	-33	.08
Threaten	-00	11	.01
% Total Variance	26.6	5.6	32.2

Japan to PRC - Trade (Cell 5G)

	I	II	h^2
Give	01	20	.04
Support	62	19	.44
Communicate	55	15	.54
Protest	27	-10	.09
% Total Variance	19.7	3.0	22.8

PRC to Japan - All (Cell 1H)

	I	II	h^2
Give	56	-13	.33
Support	80	02	.66
Communicate	82	30	.77
Protest	24	81	.73
Threaten	-04	19	.04
% Total Variance	34.1	16.4	50.6

PRC to Japan - Diplomatic Relations (Cell 3H)

	I	II	h^2
Give	54	05	.29
Support	88	07	.80
Communicate	72	32	.63
Protest	13	91	.87
Threaten	04	24	.06
% Total Variance	32.5	20.4	53.0

PRC to Japan - Trade (Cell 5H)

	I	II	h^2
Give	00	47	.23
Support	10	71	.53
Communicate	70	23	.56
Protest	63	-06	.41
% Total Variance	23.2	20.2	43.3

Japan to Asia - All (Cell 1I)

	I	II	III	h^2
Yield	01	01	64	.41
Give	30	-19	09	.14
Support	70	07	-14	.52
Communicate	92	01	14	.87
Protest	35	41	-10	.32
Threaten	12	93	07	.90
Coerce	-08	24	00	.07
% Total Variance	22.6	16.7	6.9	46.1

Japan to Asia - Diplomatic Relations (Cell 3I)

	I	II	III	h^2
Yield	00	20	50	.30
Give	32	-10	31	.22
Support	51	08	-09	.28
Communicate	98	16	01	1.01
Protest	18	39	-20	.23
Threaten	00	61	09	.39
Coerce	03	06	-15	.03
% Total Variance	19.7	8.9	6.4	35.1

Japan to Asia - Resource Dependence (Cell 4I)

	I	II	h^2
Give	13	-02	.02
Support	56	38	.47
Communicate	69	06	.49
Protest	-00	23	.06
% Total Variance	20.9	5.2	26.0

Japan to Asia - Trade (Cell 5I)

	I	II	III	h^2
Give	44	-13	-17	.25
Support	83	24	11	.78
Communicate	56	-00	-05	.33
Protest	-03	-01	43	.19
Threaten	01	53	-02	.28
% Total Variance	24.7	7.3	4.6	36.6

Asia to Japan - All (Cell 1J)

	I	II	III	h^2
Yield	18	<u>84</u>	07	.76
Give	27	-02	02	.08
Support	<u>76</u>	22	09	.64
Communicate	<u>98</u>	10	08	.90
Protest	12	07	<u>68</u>	.50
Threaten	01	-09	<u>60</u>	.38
Coerce	-00	43	-06	.19
% Total Variance	22.7	14.1	12.5	49.3

Asia to Japan - Diplomatic Relations (Cell 3J)

	I	II	III	h^2
Yield	45	-03	-08	.21
Give	19	24	48	.34
Support	<u>76</u>	24	10	.65
Communicate	<u>76</u>	25	36	.79
Protest	17	44	-01	.23
Threaten	-00	45	-00	.20
Coerce	-03	-10	26	.08
% Total Variance	20.7	8.5	6.5	35.7

Asia to Japan - Resource Dependence (Cell 4J)

	I	II	III	h^2
Give	-00	39	06	.17
Support	<u>84</u>	03	-05	.71
Communicate	<u>80</u>	04	20	.70
Protest	-08	-36	24	.20
Threaten	-03	-00	-20	.05
% Total Variance	27.4	5.9	3.1	36.6

Asia to Japan - Trade (Cell 5J)

	I	II	h^2
Give	29	-39	.24
Support	<u>65</u>	-09	.43
Communicate	<u>87</u>	-04	.76
Protest	10	37	.15
Threaten	-07	18	.04
% Total Variance	25.6	6.8	32.4

DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION SPECIFICATION

1. THE REQUIREMENTS OF THE DOD INDUSTRIAL SECURITY MANUAL APPLY TO PERFORMANCE OF THIS CONTRACT.
FACILITY SECURITY CLEARANCE REQUIRED FOR CONTRACT PERFORMANCE OR FOR ACCESS TO CLASSIFIED INFORMATION IS TOP SECRET

2. THIS SPECIFICATION IS FOR	CONTRACT NUMBER OR OTHER IDENTIFICATION NUMBER (Prime contracts must be shown in all subcontracts.)	DATE TO BE COMPLETED (Estimated)	4. THIS SPECIFICATION IS (See note below)		DATED
a. PRIME CONTRACT	a. PRIME MDA 903 75 C 0013	30 Sep 75	X	a. ORIGINAL	26 Aug 74
b. SUBCONTRACT (Use Item 8 to identify further subcontracting)	b. FIRST TIER SUBCONTRACT			b. REVISED (Supersedes all previous specifications)	
	INVITATION FOR BID, REQUEST FOR PROPOSAL, OR REQUEST FOR QUOTE			c. FINAL	

5. IF THIS IS A FOLLOW-ON CONTRACT, ENTER PRECEDING CONTRACT NUMBER AND DATE COMPLETED   DOES NOT APPLY

CONTRACT NUMBER	DATE COMPLETED

6a. NAME AND ADDRESS OF PRIME CONTRACTOR (Include ZIP Code)	b. NAME AND ADDRESS OF COGNIZANT SECURITY OFFICE (Include ZIP Code)
CACI, Inc. 1815 Fort Myer Drive Arlington VA 22209	DCASR Philadelphia PA 19101

7a. NAME AND ADDRESS OF FIRST TIER SUBCONTRACTOR (If applicable) (Include ZIP Code)	b. NAME AND ADDRESS OF COGNIZANT SECURITY OFFICE (Include ZIP Code)

(Use Item 8 to identify further subcontracting)

8. SUBCONTRACTING BEYOND FIRST TIER (as appropriate)

9a. GENERAL IDENTIFICATION OF THE PROCUREMENT FOR WHICH THIS SPECIFICATION APPLIES

Short Term Indicator Forecasting, ARPA Order 2863

CONTRACT PHASE SPECIFIED IN REQUIREMENTS WHICH ARE ADDITIONAL TO THOSE PRESCRIBED IN DD FORM 441 AND THE ISM   YES X NO

10. CONTRACT PERFORMANCE WILL REQUIRE	YES	NO	REMARKS
GRAPHIC ARTS SERVICES	X		
ACCESS TO CONTROLLED AREAS OR CLASSIFIED INFORMATION ONLY		X	
MANUFACTURE OF CLASSIFIED HARDWARE		X	
GENERATION, RECEIPT, OR CUSTODY OF CLASSIFIED DOCUMENTS OR OTHER MATERIAL	X		
ACCESS TO RESTRICTED DATA		X	
ACCESS TO CRYPTOGRAPHIC INFORMATION		X	
ACCESS TO COMMUNICATION ANALYSIS INFORMATION		X	
DEFENSE DOCUMENTATION CENTER OR DEFENSE INFORMATION ANALYSIS CENTER SERVICES REQUESTED (If yes, see paragraph 7, and attached provisions security manual)	X		

11. REFER ALL QUESTIONS PERTAINING TO CONTRACT SECURITY CLASSIFICATION SPECIFICATION TO THE OFFICIAL NAMED BELOW (NORMALLY, thru ACO) (Item 14) (PRIME ONLY). (First tier and other subcontractor must identify and refer to ACO) (thru prime contractor for subcontracts)

a. PROCURING ACTIVITY (Name, title, and organization)	b. AGENCY, TELEPHONE NUMBER AND OFFICE SYMBOL INSTRUCTION
Col. Austin W. Kibler 6915919	Human Resources Research Office Defense Advanced Research Projects Agency 1400 Wilson Blvd, Arlington VA 22209

ALL PUBLIC RELEASES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO RELEASE ☐ DIRECT ☒ THROUGH (specify)

DARPA/TIO

TO FIELD DIRECTORATE FOR SECURITY REVIEW, OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE (Public Affairs) FOR REVIEW IN ACCORDANCE WITH PARAGRAPH 5h OF THE INDUSTRIAL SECURITY MANUAL.

(For a command description, see footnote paragraph 5h, Industrial Security Manual.)

13. SECURITY CLASSIFICATION SPECIFICATIONS FOR THIS CONTRACT ARE SET FORTH BELOW (Check which are applicable).

☐ DD FORM 254 attached (hereby made a part of specification).

☒ DOCUMENT(S) LISTED BELOW (hereby made part of the specification).

☐ AS STATED BELOW

1. ARPA Memorandum on Technical Information Procedures

2. ARPA Memorandum Release of Classified Intelligence to Contractors

CONTRACT SECURITY CLASSIFICATION SPECIFICATIONS FOR SUBCONTRACTS ISSUING FROM THIS CONTRACT WILL BE APPROVED BY THE OFFICIAL NAMED IN ITEM 14 BELOW.
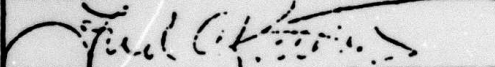
REQUIRED DISTRIBUTION:

☒ PRIME CONTRACTOR (Item 6a)
☒ COGNIZANT SECURITY OFFICE (Item 6b)
☐ ADMINISTRATIVE CONTRACTING OFFICE (Item 14b)
☐ MATERIAL INSPECTOR
☐ SUBCONTRACTOR (Item 7a)
☐ COGNIZANT SECURITY OFFICE (Item 7b)

ADDITIONAL DISTRIBUTION:

14. THIS CONTRACT SECURITY CLASSIFICATION SPECIFICATION AND ATTACHMENTS REFERENCED HEREIN, APPROVED BY THE USER AGENCY CONTRACTING OFFICER OR HIS REPRESENTATIVE NAMED BELOW

SIGNATURE

TYPED NAME AND TITLE OF APPROVING OFFICIAL
Fred A. Koether, Director, TIO

a. APPROVING OFFICIAL'S ACTIVITY AND ADDRESS (Include ZIP Code)
Defense Advanced Research Projects Agency
1400 Wilson Blvd, Arlington VA 22209

b. NAME AND ADDRESS OF ADMINISTRATIVE CONTRACTING OFFICE (Include ZIP Code)