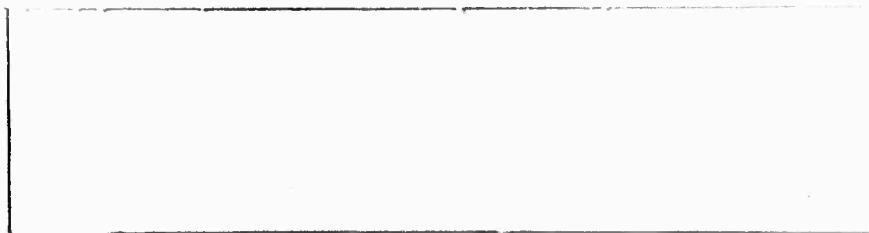AD731672

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INTERNATIONAL SYSTEM AND FOREIGN POLICY APPROACHES:

IMPLICATIONS FOR CONFLICT MODELLING AND MANAGEMENT

BY

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13. ABSTRACT

This study compares an international system approach and a foreign policy approach to the study of alliance behavior in conflict situations. The Berlin Conflict of 1961 provides a case in which the study explores an event-interaction model, an organizational process model, and a combination of both.

As hypothesized, the organizational processes model is more valid than the other models in the pre- and post-crisis phases of the Berlin Conflict of 1961. The combined model is more relevant during the crisis phase. The results have implications for conflict modelling.

With respect to conflict management, there is an important implication. Since the organizational processes model may be more valid than an event interaction model, then conflict managers in situations like Berlin 1961 should be sensitized to the role of organizational factors in determining outcomes. The study, however, does not test hypotheses concerning organizational decision-making.

The study does suggest that a computer based model of decision-making would be a useful tool for conflict management, preliminary version of which is the Computer Aided Conflict Information System. Using expert judgments to describe conflicts, CACIS compares prior situations with a present conflict and evaluates the consequences of policy alternatives previously employed. In addition, the system allows for the creation of simulated conflict scenarios. The system, thus, could expand the political options available to decision-makers.

KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
International System Analysis						
Foreign Policy Analysis						
Event-Interaction Model						
Organizational Processes Model						
Conflict						
Crisis						
Rationality						
Path Analysis						

...THE INTERNATIONAL SYSTEM IS AN EXPANDING
VERSION OF THE NOTION OF TWO-ACTORS-IN INTER-
ACTION....INTERACTION ANALYSIS FOCUSES ON THE
OUTPUTS OF NATIONAL SYSTEMS. THE NATIONAL
SYSTEMS, THEMSELVES, ARE BLACK BOXED.[1]

IF A NATION PERFORMS AN ACTION OF A CERTAIN
TYPE TODAY, ITS ORGANIZATIONAL COMPONENTS
MUST YESTERDAY HAVE BEEN PERFORMING (OR HAVE
HAD ESTABLISHED ROUTINES FOR PERFORMING) AN
ACTION ONLY MARGINALLY DIFFERENT FROM THAT
ACTION.[2]

INTRODUCTION

The quotations from Charles McClelland and Graham Allison represent

two distinct approaches to the study of international relations: (1) inter-

national system analysis; and (2) foreign policy analysis. Essentially, in-

ternational system analysts seek to explain interactions between nations by

phenomena such as their prior interactions and the structure of the system.

Foreign policy analysts, on the other hand, seek to explain foreign policy

behavior as the output of sub-national organizations following standard opera-

ting procedures or engaged in a problem-solving search. Given the international

system and foreign policy approaches as contrasting points of departure, the

goals of the present study are:

1. to evaluate models based on an international system approach, a foreign

policy approach and a combination of both approaches as they are used to

study alliance behavior in conflict situations; and

2. to infer from the evaluation of these models some implications for conflict

modelling and management.

International system approaches may imply interaction models, whereas

foreign policy approaches may suggest decision-making models. Re-

garding system approaches, for example, J.D. Singer states that by focusing

on the international system, we can study the patterns of interaction which the system reveals.[3]

Game theoretic approaches to the study of conflicts of interest blend both interaction and decision-making concepts through their emphasis on strategic interaction and rational choice behavior.[4] Game theory deals with strategic situations in which the consequences of action are uncertain; several different outcomes may result from a given action. Players in a game confront others who are assumed to be rational and whose choices also affect the outcome of the game. A game theoretic approach to conflict thus emphasizes strategic interaction and bargaining under conditions of risk.

Rational choice behavior in game theory is an ambivalant concept. In zero-sum games, rationality is defined as the minimax (equilibrium) strategy of the game which is the best the players can do both *individually* and *jointly*.[5] The maximin strategy in non-zero-sum games, however, leads to either an equilibrium outcome that is unsatisfactory for both players or to a satisfactory outcome that is not an equilibrium solution. The definition of rationality in non-zero-sum games differs from its meaning in zero-sum games. Anatol Rapoport draws attention to the fact that rationality is actually two separate concepts--individual rationality and collective rationality, each of which dictates different strategies.[6]

An alternative set of conflict models widely employed in world politics concern arms race processes. The most familiar is the Richardson process model, named after Lewis Richardson.[7] Richardson's model stresses interaction processes between nations, but ignores rational choice behavior. The outcome of Richardson's model ". . . is what would occur if instinct and

tradition were allowed to act uncontrolled."[8] The model ignores choice pro-
cesses internal to a state and stresses the automatic response of one nation
to the arms expenditures of another. The model is deterministic and described
in terms of "social physics."[9] There are a variety of arms race models which
have attempted to improve on Richardson's formulation. Martin McGuire's
model, for example, incorporates rational choice behavior.[10]

Less formal than the game theoretic and Richardson process models
are the mediated stimulus response (S-R) and event-interaction models of
Robert North and Charles McClelland respectively.[11] North's model focuses
on perception as an explanatory concept intervening between a stimulus and a
response. McClelland, on the other hand, emphasizes prior international
event-interaction sequences and systemic configurations as explanations
for present international interactions.[12]

The game theory model assumes rational choice behavior; the mediated
stimulus response, the event-interaction and Richardson process models allow
for irrational (misperception) or nonrational (recurring event sequence) be-
havior.[13] Nevertheless, all four classes of models have in common the inter-
action theme. That is, each model explains present interaction on the basis
of prior interaction with a minimum of focus on the internal attributes of
the actor.[14] Of these four interaction models, the present study draws most
from the event-interaction model. A hypothesis derived from this model is
that the current behavior of the Warsaw Treaty Organization (WTO) in an East-
West conflict is a consequence of a prior pattern of North Atlantic Treaty
Organization (NATO) actions, and vice-versa.

Recall the earlier suggestion that international system approaches suggest interaction models while foreign policy approaches may imply decision-making models. An early decision-making scheme is the one pioneered by Richard Snyder and his associates.[15] Although their original decision-making scheme allowed for international system determinants of foreign policy behavior, the scheme mostly relies on the organizational roles, communication and information and personality variables, especially motivation, which constitute the internal setting of decisions.[16] As with game theory, the decision-making scheme assumes rationality, but rationality is a more limited concept than the comprehensive version assumed in game theory. In game theory goals are ranked, all alternatives are specified, consequences are calculated and rational choice consists of selecting the value-maximizing alternative. In the decision-making scheme, however, men are bounded by: (1) the lack of an explicit preference ordering; (2) incomplete information on alternatives; and (3) inadequate computational skills to calculate the consequences of each option. All three limitations violate the requirements of comprehensive rationality.[17]

The Snyder scheme focuses on the attributes of individuals as well as on their foreign policy organizations. The decision-making model explicated by Graham Allison primarily stresses organizational processes.[18] Allison's model explains government behavior as the output of large organizations functioning according to standard operating procedures and search processes. Like Snyder's scheme, Allison's model assumes limited rationality rather than the comprehensive rationality of game theory models. Allison's organizational

processes explanation asserts the following principle: stop searching with the first alternative that is good enough--the "satisficing" rule.[19] The present study draws more on the Allison work than on Snyder's efforts. Consider Allison's inference from an organizational processes model: "The best explanation of an organization's behavior at [time] t is t-1; the best prediction of what will happen at t+1 is t."[20] Following Allison's model, a hypothesis is that the current behavior of WTO in an East-West conflict is a consequence of its own prior pattern of actions, and similarly for NATO.

The international system and foreign policy approaches may both yield adequate explanations of international behavior. Similarly, event-interaction and organizational processes models may apply to the same situation. Thus, the study evaluates: (1) an event interaction model; (2) an organizational processes model; and (3) a combined interaction/organizational model. Consider the following illustrations of these three models. The event interaction model assumes that WTO behavior was a reaction to the prior pattern of NATO events. That is, Warsaw countries decided to construct the Berlin Wall as a result of prior NATO provocations, e.g., the encouragement of a mass refugee flow from East Germany to West Germany via Berlin. Similarly, NATO behavior was a reaction to prior WTO events. NATO countries increased their defense budgets and sought alliance agreement on economic sanctions in reaction to Soviet threats to sign a separate peace treaty with the East Germans and to turn over control of Berlin access routes.

An organizational processes model, on the other hand, might place stress on such variables as standard operating procedures and the problem-solving search processes of organizations as explanations for alliance actions.

Consider this explanation of an official U.S. reply to the Soviet _aide_ _memoire_ and subsequent U.S. actions during the Berlin Conflict of 1961. For weeks President John F. Kennedy waited to reply to a Soviet threat to Western access routes to Berlin which was implied by a Soviet _aide_ _memoire_. The Department of State drafted a reply; Kennedy rejected it as stale and uninspired. He asked Theodore Sorenson to draft a new reply. Then Kennedy discovered the new reply could not be released without going through complicated allied and interdepartmental clearances. He gave up the new attempt and issued the earlier State Department reply.[21] The organizational processes model anticipates standard operating procedures and helps explain some of the foreign policy output. Perhaps _partly_ as a result of his dissatisfaction with the perfunctory U.S. reply, Kennedy searched for more direct ways of answering the Soviet _aide_ _memoire_ e.g., by increasing the military budget.[22]

The interaction/organization model combines the reaction and organizational process explanations into a single model. Prior studies suggest that a combination is more adequate than either the international system or foreign policy approach taken separately. Consider the studies by Nazli Choucri and Robert North. Although Choucri and North seek to explain international conflict behavior over longer periods of time, their work is nevertheless relevant here. Between 1870 and 1914, they find that a nation's role in international conflict was less a consequence of changes in that nation's own capabilities (i.e., the foreign policy approach) than of the changing distances between itself and rival nations, particularly its closest rival (i.e., the international system approach). They conclude, however, that

neither the foreign policy nor the system approach alone is adequate to explain the international conflict process.[23] Thus, the present study combines the international system and foreign policy type approaches in creating an interaction/organization model. A specific hypothesis based on the interaction/organization model is that WTO behavior in an East-West conflict is a consequence of both its own prior actions and prior NATO actions, and similarly for NATO.

The following three working hypotheses, thus, are: (1) an alliance's behavior in conflict situations results from the prior pattern of actions of its opponent (event-interaction); (2) an alliance's behavior in conflict situations results from its own prior patterns of actions (organizational processes); (3) an alliance's behavior in conflict situations results from both the opponent's prior pattern of behavior and its own prior pattern of actions (interaction/organization).

An Event-Interaction Model

McClelland has laid the theoretical framework for the event-interaction model in a series of essays. In the 1961 special issue of World Politics, his essay on "The Acute International Crisis" explicates an event-interaction model.[24] He suggests that events in conflicts might form a chain of interaction sequences; and the discovery of these sequences would permit comparisons across cases. McClelland's model describes the state of the international system in terms of its pattern (process), structure, and performance. Data needs are of two types: relationships to tap structure, and interactions

as indicators of system process.[25] In a later article, McClelland evaluated

several propositions with interaction data concerning access to Berlin, 1948-

1963.[26] For example, he evaluated one of the ideas put forward in the 1961

article: the greater the number of intense conflicts between two actors,

the more likely each will develop routines for minimizing violence. These

routines develop as bureaucrats learn standard operating procedures to process

repetitive conflicts.[27] Although the 1968 design does not provide an explicit

test of the learning idea, there is some evidence supporting it in the Berlin

case. Finally, an assumption of McClelland's event-interaction model is that

there are certain international processes, such as arms races, which occur

regularly with specific international situations such as intense conflicts.

The task of the international system analyst is to discover the processes

which accompany various situations and to forecast future processes.[28]

McClelland's event-interaction model is the least formal and the

least explicitly theoretical of the interaction models discussed above. It

makes the simple assumption that an interaction pattern will continue under

the conditions of a specific international situation and structure. Recall

Allison's inference from his organizational processes model: "The best

explanation of an organization's behavior at [time] t is t-1; the best

prediction of what will happen at t+1 is t." McClelland's model makes a

similar statement but it explains continuity of patterns by referring to the

international situation and structure. McClelland's model, however, does

not explain the continuation of a pattern by referring to axiomatic as-

sumptions regarding rationality or learning, assumptions which would provide

time and place suggests that the individual has been modified in the course
of his development in such a way so that he often exhibits persistent be-
havior apart from the momentary effect of his immediate environment. This
behavior results from the socialization process: an individual's learning
from others in his environment the social patterns and values of his
culture."[31] Hence, socialization models seem appropriate to explain why
an event-interaction pattern will hold in the future. One can classify
learning and game models as similar explanations of rational behavior.
Simon asserts that, "implicit in any theory of learning is a motivational
assumption--i.e., that learning consists in the acquisition of a pattern of
behavior appropriate to 'goal achievement,' .... In parallel fashion, game
theory .... [is] concerned with discovering the course of action in a
particular situation that will 'optimize' the attainment of some objective
or 'payoff'."[32]

Since learning and game models both explain rational choice behavior,
it may be possible to subsume event-interaction patterns under a more general
model based on rationality.[33] Thus, an event-interaction sequence only
appears to be non-rational. It may not be the least theoretical of the inter-
action models discussed above. An event-interaction analyst, however, need
not pay attention to the implicit assumptions concerning learning and/or
rationality. For example, McClelland and his associates identified recurring
patterns in the flows of events with little reference to assumptions about
learning or rationality which might have explained such patterns.[34] Given their
purpose of forecasting from these patterns, it may be adequate just to know

the existence of patterns rather than why the pattern existed.

If one does not know why the pattern exists, he may have difficulty anticipating changes in patterns. Learning models may explain why international event patterns exist or change. Just as in behavioral psychology, one is interested in prior reinforcement and present behavior to forecast future behavior, in world politics one may need to know the prior reinforcement and present behavior. Behavioral psychologists initiate their investigations and/or therapy by establishing prior reinforcement schedules. Thereafter, they monitor and reward present behavior in relation to the prior schedules. McClelland and his associates would be on more solid theoretical ground if they first attempted to discover the prior reinforcement schedules of nations and then discovered their performance records.[35]

The present study attempts to infer prior reinforcement from present interaction patterns. For example, if WTO tends to respond to NATO in the most intense phase of the Berlin conflict this might reflect the experience of prior situations when WTO leaders were rewarded for responding to NATO actions during the intense phases of prior conflicts. Indeed, an assumption in this regard is that alliance leaders are more likely to recall learned behavior from the most intense phase of a prior conflict than from less intense phases. Moreover, as conflictive intensity increases, the greater may be the perception of interdependence among the actors. Oran Young, moreover, suggests that actual interdependence increases during the most intense phase of conflict because each actor is able to exercise less and less control over the interaction. As a result, each actor increasingly considers both the actual

and potential actions of the other party.[36]

Nazli Choucri and Robert North also stress the interdependence of interactions during periods of high conflict intensity. In their contribution to this volume, Choucri and North discuss three models of international conflict behavior that deal with national expansion, competition and crisis. The national expansion model assumes that a nation generates its own dynamic of conflict behavior irrespective of its rivals. The competitive model assumes that a nation's level of conflict may be a consequence of the difference in power capability between itself and its nearest rival. The crisis model assumes that a nation's involvement in conflict is a response to the behavior of the opponent. The crisis model anticipates reaction processes, as does the Richardson model. In arguing for a mixed model, Choucri and North assert that the earlier stages of a conflict are dominated by dynamics internal to the nation, as explained by the national expansion model. During later stages, processes of competition become more evident than the internal self-generating forces. Even later come the interdependent interactions characteristic of crises. Some of their most important discoveries are the "breakpoints," where external dynamics begin to dominate internal dynamics as determinants of conflictive interactions.

Following Choucri and North, the present study hypothesizes that internal attributes are more important in pre- and post-crisis periods. The present study divides the Berlin conflict into three phases (pre-crisis, crisis, and post-crisis) in order to consider whether interdependent behavior between WTO and NATO increases during the crisis phase in contrast to other periods. During the crisis phase an event-interaction model should explain alliance behavior more adequately than an organizational processes model. In short,

limited rational actors learn patterns of interdependence from prior conflicts. They generalize these patterns, and particularly at the most intense phase of an ongoing conflict tend to repeat the learned behavior.

An Organizational Processes Model

Recall Charles McClelland's description of the international system. He ignores the internal attributes of the actors and stresses prior interactions as an explanation for current behavior. Graham Allison's foreign policy approach, on the other hand, ignores prior interaction and emphasizes standard operating procedures and the search behavior of complex organizations within each actor.[37] An event-interaction model can employ the concept of learning to explain recurrent patterns **between** actors; the organizational processes model can use learning to explain organizational routines and search processes **within** actors.

One important set of organizational routines are standard operating procedures (SOPs). The existence of standard operating procedures implies that the actor is adaptively rational. Although the actors are business firms, Richard Cyert and James March suggest that standard operating procedures are the result of a long run adaptive process through which a business firm learns.[38] Standard operating procedures are internal characteristics of the actor. If the actor has a need to behave adaptively in the changing environment of a conflict, however, he has to take into account the dynamic nature of that environment. Standard operating procedures are not tailored to specific environments. Rather, they are generalized routines which have been applied previously to similar problems.[39]

When a conflict occurs, standard operating procedures may not be
an adequate basis for decision-making. In routine situations, the explana-
tion of the output of an actor may depend heavily on standard operating
procedures. During a conflict, rational adaptation suggests that the actor
search for more innovative solutions than those provided by standard operating
procedures. As Julian Feldman and Herschel Kanter assert, "The major
variable affecting the initiation of search is dissatisfaction--the organi-
zation will search for additional alternatives when the consequences of the
present alternatives do not satisfy its goals."[40] The concept of search
fits nicely with the idea of "satisficing"--an actor searches until he finds
an alternative which is satisfactory.[41]

During a conflict, the organizational standard operating procedures
tend to give way to search processes which are more likely to respond par-
ticularly to the external environment. Even these search processes, however,
occur primarily in the neighborhood of prior or existing alternatives be-
cause of the prominence of these options and the ease of calculating their
consequences. In this respect, search simply builds incrementally on stan-
dard operating procedures relying on prior cases to provide alternatives that
may satisfy organizational goals.

Organizational processes models are to event-interaction models
as decision-making models of the firm are to some economic explanations of
firm behavior. That is, some economic explanations stress the environment
external to the firm as the basis of rational choice. Regarding event-inter-
action models, the market determined firm is equivalent to the international

system-determined nation. The external environment in a market economy
consists of all other competitive firms, e.g., all firms are striving to
maximize net revenue, given certain prices and a technologically determined pro-
duction function. Similarly, consider nations as firms, where nations seek to
maximize their national interest. If the market determined each firm's
behavior irrespective of internal organizational processes, their internal
attributes would be irrelevant to an explanation of a firm's decisions.
If the international system determined the nation's behavior irrespective
of internal organizational processes, domestic attributes would be irrelevent
to an explanation of a nation's foreign policy decisions. Cyert and March
provide an alternative to the market-based ideas just as Allison provides an
alternative to international system ideas. Cyert and March supplement market
analysis with an examination of the internal operation of the individual firm.
Indeed, their analysis indicates that a firm's resource allocation decisions
are very dependent upon prior patterns of allocation.[42] In a related inquiry,
Aaron Wildavsky finds that the most important determinant of the size and
content of a given year's budget is the previous year's budget--a type of
organizational incrementalism.[43]

Organizational processes models are to event-interaction models as
decision-making models of budgeting are to community power studies. For
example, John Crecine's study of municipal budgeting employs a decision-
making model that stresses organizational factors. His findings provide
empirical support to the organizational processes model of Cyert and March.
Crecine finds that the lack of adequate data on agency performance leaves

the decision-makers with little choice. They must use prior budgets as
a reference for current budget decisions. Crecine also discusses external
citizen demand in the budgeting process. This kind of external demand
has a counterpart in the event-interaction model of the present inquiry.
Crecine acknowledges that external citizen demand may determine the
pattern of expenditure within certain accounts. But he finds that there
is no direct connection between political pressure and departmental
budget levels. Crecine does suggest, however, that external pressures may
have a cumulative, long run effect on governmental problem solving.[44] In
contrast, community power studies assume a process of mutual interaction
comparable to the event-interaction model presented here. Community power
studies do not allow for organizational explanations of the process by which
local governments allocate values. The community power studies assume that a
business dominated elite, or multiple elites specializing in particular is-
sues, determine governmental resource allocation.[45] In other words, the
elitist and pluralist community power models both assume that resource alloca-
tion in the polity is a consequence of external factors, an assumption comparable
to the logic of the event-interaction model.[46]

There are several implications from organizational studies which are
relevant to the present inquiry. One such inference is that most actions taken
by alliances may consist of the repetition or continuance of what was done in
the past. In the absence of some reason to change behavior, alliances may
simply continue doing what they have been doing.[47] An organizational processes
model assumes that most present behavior is a result of prior behavior and
organizational routines. Explanation of an action begins at the base line of
prior behavior and routines, noting incremental deviations.[48] The incremental

deviations may result from the external environment. Thus, the organizational based studies also suggest a combined interaction/organization model.

Recall the specific hypothesis emerging from a foreign policy decision-making approach: an alliance's behavior during a conflict results from its own prior pattern of actions. Given the discussion of conflict phases above, consider the following expansion and modification of this hypothesis: an alliance's behavior in pre-crisis results from its intra-organizational standard operating procedures and search processes. Specifically, WTO should respond more to its own prior behavior than to NATO during the pre- and post-crisis phases of the Berlin conflict, and similarly for NATO. Finally, the interaction/organization model simply combines the event-interaction and organizational processes models.

Design and Analysis Decisions

A fundamental assumption of the design is that indicators can tap unmeasured concepts. That is, the data are the intensities of conflictive interactions between the WTO and NATO alliances. No data are presented here on such theoretically interesting concepts as learning, rationality, standard operating procedures or search processes. Nonetheless, the design assumes that event-interaction patterns can be used as indicators of these theoretically significant concepts.[49]

If an alliance's current actions are a response more to its own prior behavior, the inference is that organizational processes are more important than interaction patterns. Conversely, if an alliance's current actions are

a response more to the other alliance's prior behavior, then the inference
is that interaction patterns are more important than organizational processes.
In both cases, measured indicators (actions) tap unmeasured concepts
(models). By no stretch of the imagination, then, does this design test
models or their implications. Rather, the design simply evaluates the
models which seem to be implied by certain patterns in the data. This
design is inductive in orientation, but it does more than search for regu-
larities in the data. The study uses patterns as a point of departure for
making inferences about models. In short, the design seeks to develop
an interface between strategies that stress logical closure via tight
models and those which search for empirical regularities.[50]

Specifically, the design allows for the testing of the following
hypotheses:

1. Prior WTO conflictive action intensities determine
   current WTO deed intensities.[51]

2. Prior NATO conflictive action intensities determine
   current NATO deed intensities.

3. Prior WTO conflictive action intensities determine
   current NATO deed intensities.

4. Prior NATO conflictive action intensities determine
   current WTO deed intensities.

5. Prior WTO and NATO conflictive action intensities
   determine current WTO deed intensities.

6. Prior WTO and NATO conflictive action intensities
   determine current NATO deed intensities.

The first four hypotheses correspond to the paths in Figure 1.
Hypotheses five and six combine paths one and four as well as paths two

and three respectively. Paths one and two are called vertical paths while three and four are the diagonal paths in this study. If the diagonals are greater than the verticals, this might indicate that an event-interaction model is more valid than an organizational processes model. If the verticals are greater than the diagonals, this might indicate that an organizational processes model is more valid than an event-interaction model. If both the diagonals and verticals are equally strong, this might indicate that the interaction/organization model is the valid one relative to its components. If neither the diagonals nor the verticals are strong, this might indicate one of two things: (1) neither of the models specified here are valid; (2) there is insufficient fluctuation (variance) in the alliances' intensities to calculate path (regression) coefficients. In the latter case, the average rate of intensity per unit of time would predict to current intensity even though the path coefficient might not.
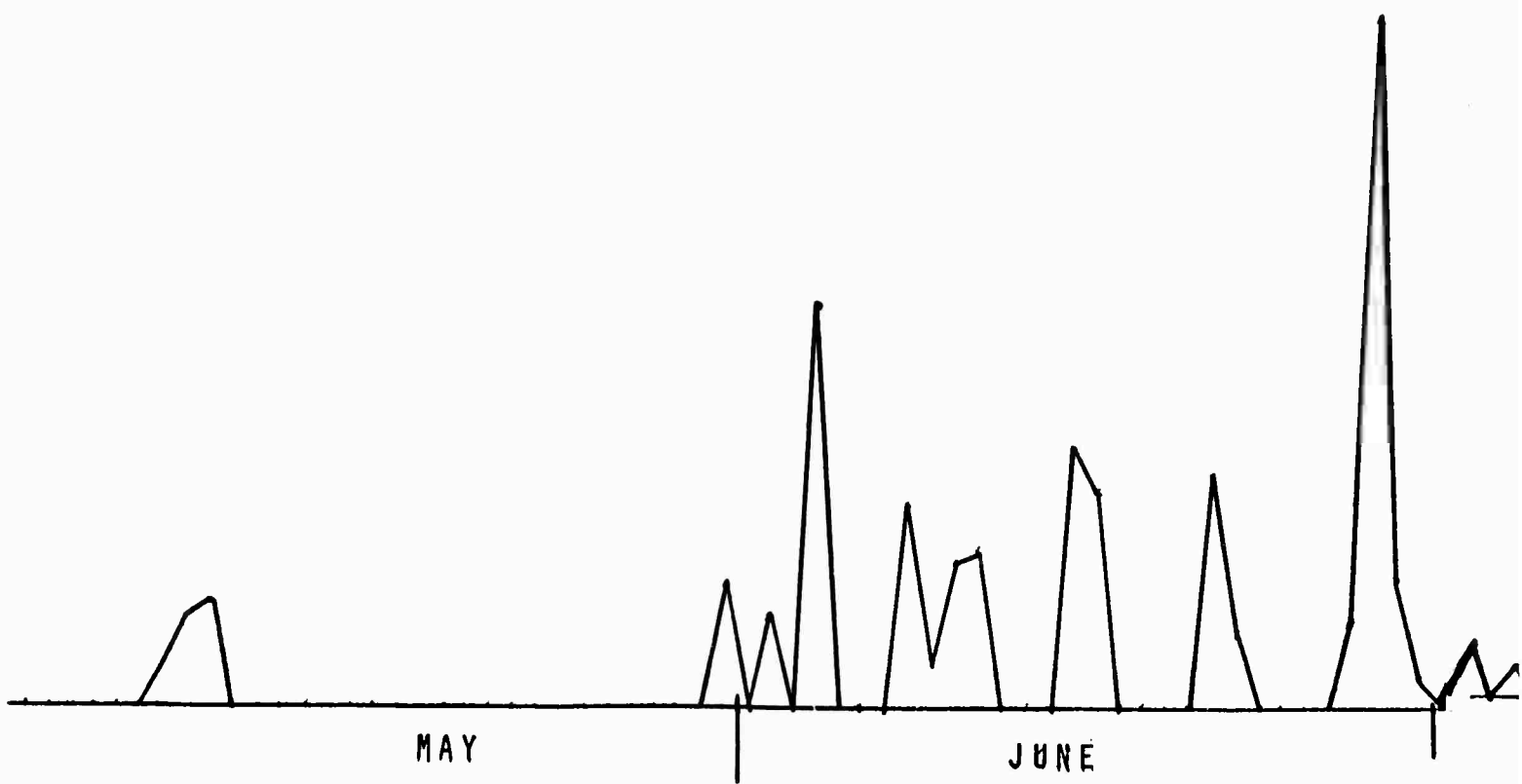
FIGURE 1
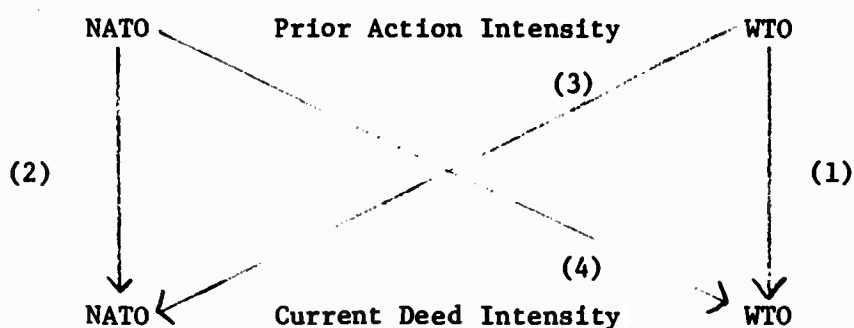
The six hypotheses diagrammed in Figure 1 represent the systematic

variance in the study. Other variance is extraneous here. The design, there-

fore, seeks to specify and control this extraneous variance (rival hypotheses

which might explain the dependent variables). One plausible rival hypothesis

is that the actions of the Chinese People's Republic might determine the

interactions between WTO and NATO. There is some evidence of a close con-

nection between the long term conflictive actions of the C.P.R., U.S.S.R. and

the U.S.[52] An assumption of this study, however, is that the relationship

between the WTO and NATO countries in a given conflict is not a result of

their respective interactions with China. In addition to the C.P.R. rival hypo-

thesis, there is the plausible idea that "time" itself may be a determinant

of the interactions between WTO and NATO. An important aspect of a conflict

may be the rate at which events unfold. Each alliance's intensities may in-

crease or decrease together as a result of their simultaneous track through

time. Hence the design controls for linear trend effects in the data.[53]

A third design decision concerns the measurement of conflict in-

tensity and the identification of the distinct phases of the Berlin conflict.

Walter Corson made available his conflict intensity scale and coded data from

the Berlin conflict of 1961.[54] The Corson scale provided the basis for selec-

ting the time period for each conflict phase. Corson divides the Berlin

conflict into five phases on the basis of changes in the types and intensities

of both conflictive and cooperative behavior. Corson's second criterion

for disaggregating the total interaction process is events which act as

obvious thresholds.

The present study draws on Corson's criteria to specify the phases of the Berlin Conflict. Cooperative interaction patterns, however, are not included.[55] Figure 2 shows total conflictive intensity scores for NATO and WTO by day from 1 May 1961 to 31 December 1961.

Several clear patterns emerge from these data. Conflictive intensity remains low until 25 July, when President Kennedy announced major U.S. military preparations. However, the intensity dropped sharply the next day and peaks again on 13 August--the day the East sealed the border between East and West Berlin. The action marks the beginning of the crisis phase of conflict for two reasons: (1) conflictive interaction is more intense during this 36-day period than during any other; and (2) although this phase has several clear peaks, the intensity remained very high for extended periods of time (several days). In other words, as intensity increased, the elapsed time between high-intensity action decreased. The rapid decline of conflictive intensity and its relatively lower values mark the end of the crisis phase. The three phases of the 1961 Berlin conflict are summarized in Figure 3.[56]

The three models of conflict (event-interaction, organizational processes and a combination of both) and their corresponding hypotheses are evaluated by regressing each alliance's current conflictive deed intensity (dependant variable) on both its own prior conflictive action intensity and the other alliance's prior action intensity for each phase of the Berlin conflict. These operations yielded the path coefficients reported in this analysis.[57]
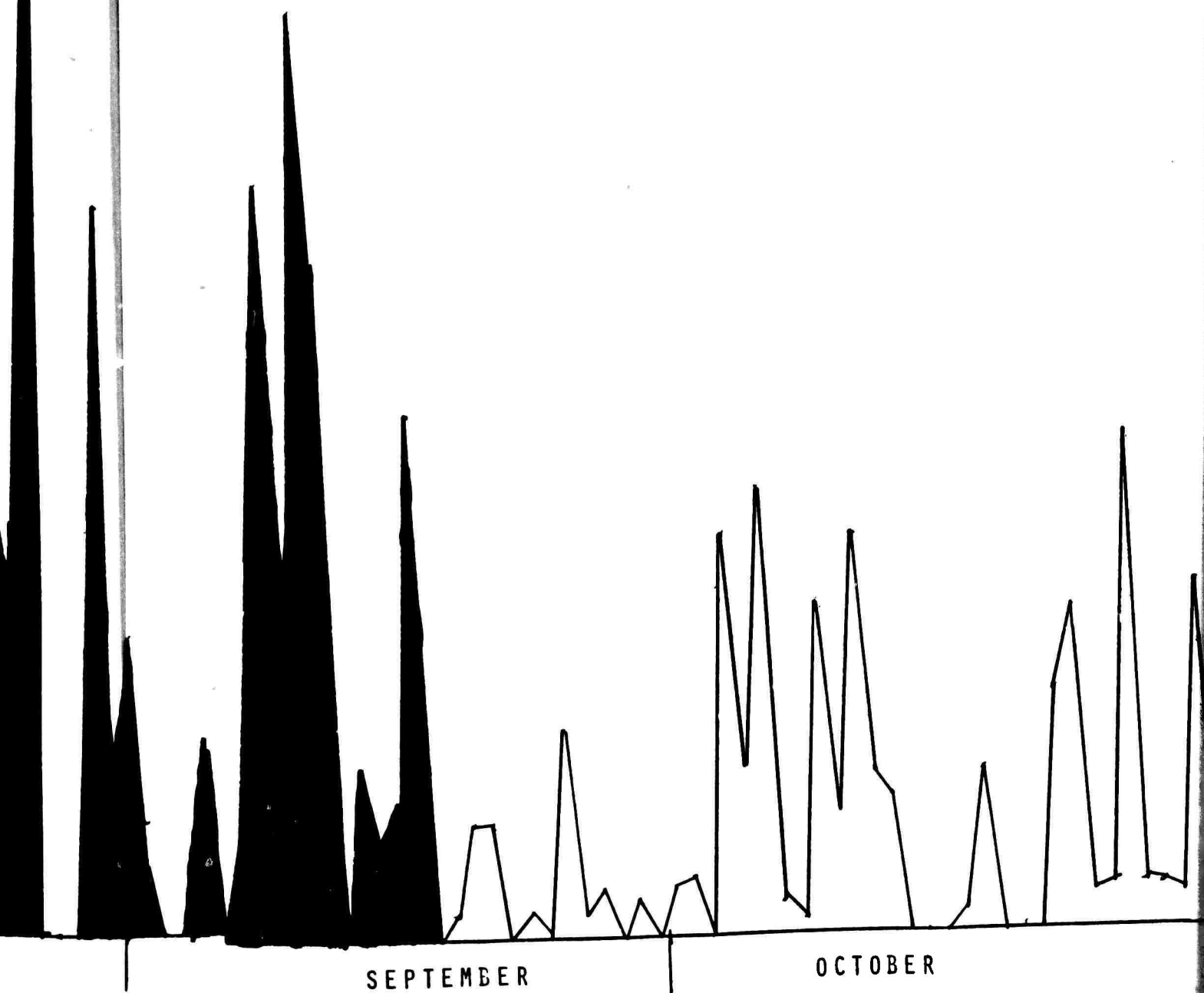
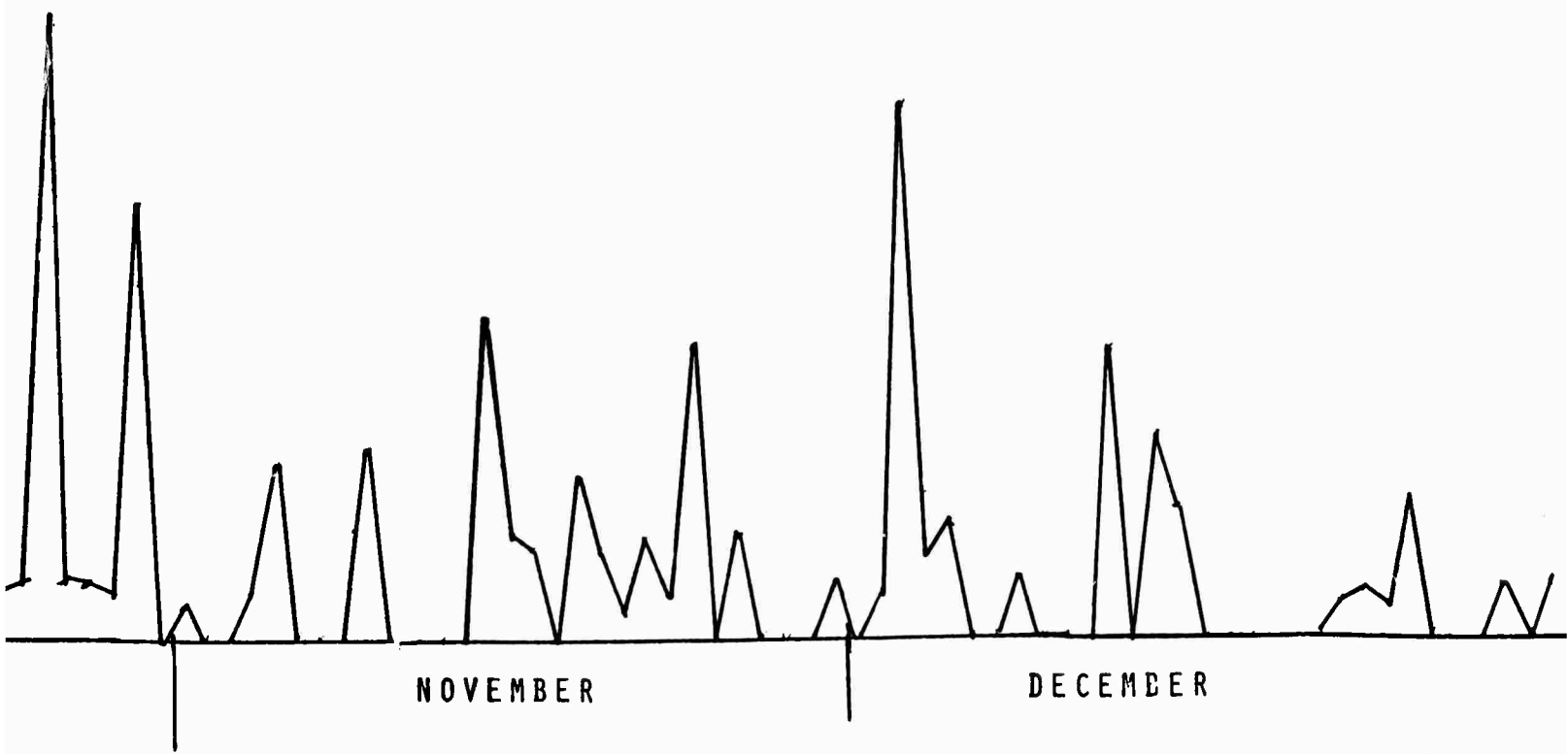MAY   JUNE

FIGURE II:

.21A

JULY

AUGUST
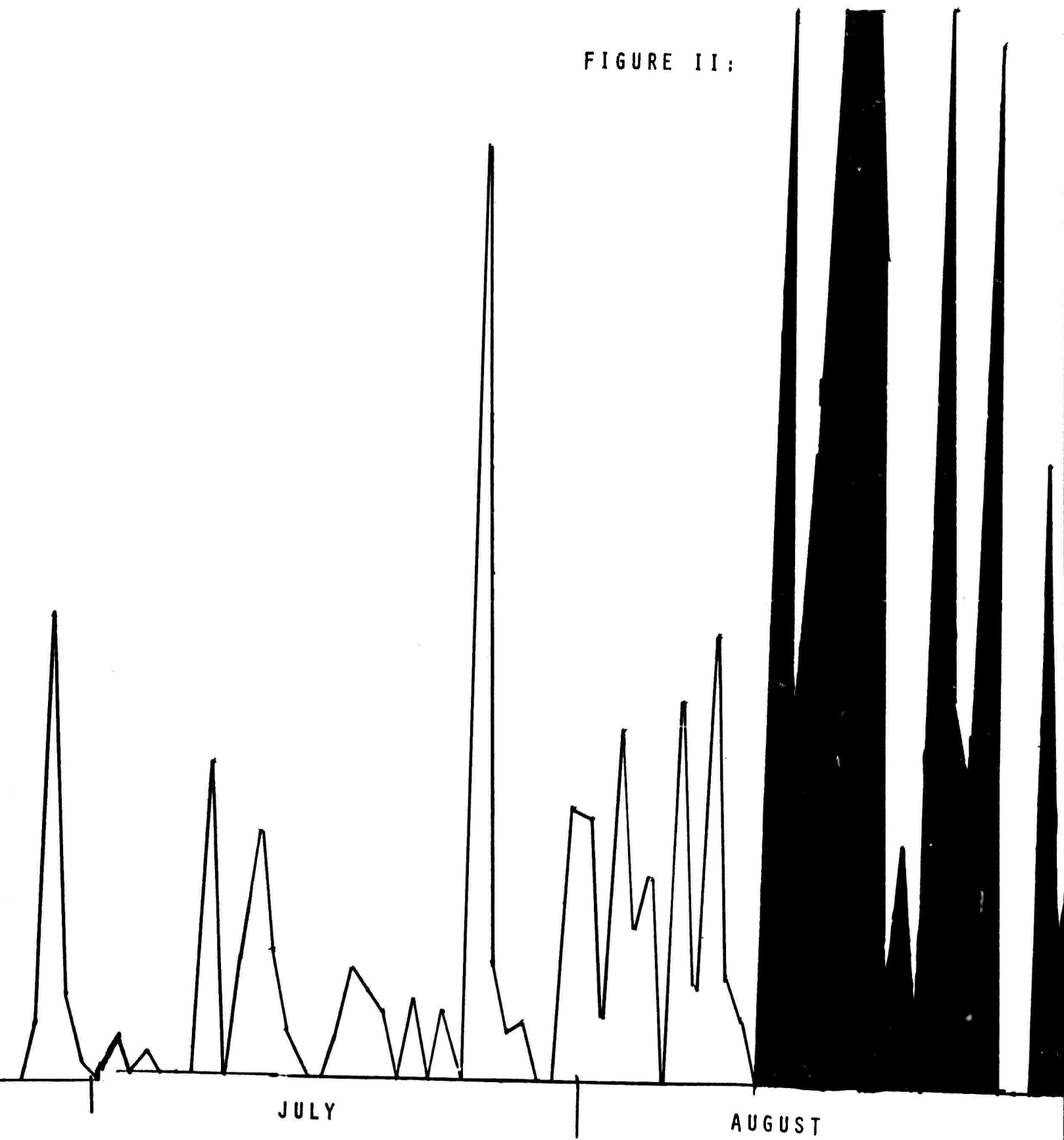
TOTAL DAILY CONFLICTIVE INTENSITY SCORES FOR NATO AND
1 MAY 1961 TO 31 DECEMBER 1961

SEPTEMBER   OCTOBER

NOVEMBER   DECEMBER

FIGURE 3

Phases of the 1961 Berlin Conflict

PHASE	PERIOD	NO. OF DAYS
All Phases	1 May 1961 - 31 December 1961	244
Pre-crisis (includes intensification)	1 May - 12 August	104
Crisis (includes peak and reduction)	13 August - 17 September	36
Post-crisis	18 September - 31 December	104

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A crucial substantive and design problem confronted in this paper
is the meaning of time. As a variable and unit of analysis, time is usually
measured in terms of increments of solar time -- minutes, hours, days, weeks,
months, years, and so on. Yet it is very likely that time holds a different
meaning for decision-makers caught up in a crisis. Time thus could be
thought of as "diplomatic time" and measured in a variety of ways including
aggregating solar time to periods of specific duration on the basis of
explicit theoretical criteria, or abandoning solar time units altogether.
Little thought has been given to the crucial role of time as a unit of
analysis, and to the criteria for its measurement. A variety of studies
of crisis [58] converge in their identification of two criteria integral to
the nature of crises: (1) action intensity; and (2) elapsed time between
actions. These two criteria supply the rationale for the measurement of
time in the present study.

Corson finds that the elapsed time between actions varies inversely
with total conflictive intensity in his study of Berlin 1961.[59] This finding
suggests that a single time period should be an aggregation of days rather
than a single day to reflect both the importance of time as a factor con-
fronting the decision-makers and the changing character of conflict as it
progresses from phase to phase--i.e., as the intensity of action varies.
Thus, current deed intensity is not predicted by prior action intensity
for each day of the conflict. Instead, three criteria outlined by Corson
are employed to determine the units of time. These are as follows:
(1) if total conflictive intensity for NATO and WTO on a given day

was less than 30 on the Corson scale, the intensity of conflictive ac-
tions on that day and the preceding six days predicted the intensity of
non-verbal conflictive deeds for the next three days; (2) if total inten-
sity on a given day was between 30 and 150, action intensity on that day
and the preceding four days predicted deed intensity for the next three
days; and (3) if total intensity on a given day was greater than 150,
action intensity on that day and the preceding two days predicted deed
intensity for the next two days.[60]

Given the aggregation of days and time lags, a further decision
was to aggregate data to the alliance level of analysis. An initial de-
cision was to study only Soviet-American behavior in the Berlin conflict.
It became apparent, however, that East and West Germany would have to be
included. Then what does one do with relevant actions by other countries
during the conflict? These actions should also be taken into account.
Hence, the alliance became the unit of aggregation. The alliance unit of
aggregation may be more valid for a case such as Berlin in contrast to a
case such as the Cuban Missile Crisis of 1962. There, alliance participation
was secondary to the Soviet-American confrontation.[61]

Regarding the data, there are 337 events for the Berlin conflict
from May 1, 1961 through December 31, 1961 -- 244 days. Primary data sour-
ces included the New York Times front page, Deadline Data on World Affairs,
as well as The World Almanac and Book of Facts, 1961, 1962. The present
study does not use events per se in analysis. Rather, the daily inten-
sities aggregated across events for each alliance comprise the data for

analysis. The coding and aggregation design decisions prepared the data

for analysis. The method used is path analysis, which consists of regres-

sion analysis of theoretically specified relationships using standardized

data.[62] Path analysis is appropriate for determining the relative con-

tribution of competing paths in explaining a dependent variable. The

assumptions of the method compare nicely with the measurement system and

theoretical specification of the study. For example, path analysis assumes

interval scale data and that some of the paths are specified. The Corson

scale probably meets the interval level assumption, and the present

study specifies most of the paths explicitly.

Analysis and Results

Here is a very brief historical overview of key events in the

Berlin Conflict from May 1, 1961 through December 31, 1961, followed by

the path analysis whose purpose is to evaluate the three proposed models.

During May of 1961 (pre-crisis) WTO countries began to intensify their

demands that the West terminate its presence in Berlin. There was con-

cern with the problem of the flow of refugees fleeing East Germany--almost

200,000 in 1960. The refugee problem was a major motivating factor in

precipitating the conflict. Recall the inference from the Choucri-North

study that during the pre-crisis phase, it is likely that the focus would

be on internal attributes of the actor rather than on the opponent's ac-

tions. Intra-alliance factors such as the refugee problem and potential

unrest in East Germany appear to be more important than NATO actions as

determinants of WTO conflict intensification. There followed a slow but
steady intensification of conflict, which although self-generated was
modified by Western actions occasionally. The WTO "ultimatum" of June,
the threat to sign a separate peace treaty with East Germany and end
the legal basis for the Western presence in Berlin, illustrates a key
event in the intensification.

In the crisis phase there seemed to be a greater amount of competi-
tive action and reaction than in the pre-crisis period. For example,
the WTO actions of August 13, 1961 to erect the Wall may have resulted
from WTO dissatisfaction with Western response to the demand for a
separate peace treaty with East Germany. The Western response consisted
partly of a reiteration of three essentials: (1) continued allied
presence in Berlin; (2) unrestricted access routes to and from Berlin; and
(3) freedom for West Berliners to choose their own form of government.
The Western response consisted of concrete acts which strengthened NATO
military forces and reinforced NATO troops in Berlin. (One could select
an event from the post-crisis phase to illustrate the de-emphasis on in-
teraction and the consequent reassertion of domestic factors; but it is
not necessary to illustrate the point.) One problem with the selection
of historical incidents as illustrations is that it is generally easy to
find an event which demonstrates the idea! Systematic comparative inquiry
seeks to avoid such biased sampling "to prove" one's ideas. A comparison
of action intensities across time, based on a universe of events, is more
valid than the selective sampling of events in a verbal descriptive

account, although both are necessary.

Another way of analyzing the Berlin conflict is to look at the level of conflictive intensities over time. For example, from May 1 through July 24, total conflictive intensity was low for both alliances.[63] Disaggregating conflictive action into its components for a moment, consider the period between July 25 through August 12. WTO threats were much higher in intensity than WTO disapproval, demands or deeds. In contrast, NATO conflictive deeds were much higher in intensity than its words: disapproval, demands or threats.[64]

During the crisis phase, August 13 through September 17, conflictive intensities were at their highest levels.[65] Disaggregating the conflictive actions between August 13 and 26, shows that WTO conflictive actions were comprised of low demand, high threat and low to moderately intense deeds. In contrast, NATO's conflictive actions in this period had moderately intense deeds (including troop movements), high demand and low threat intensity (including frequent protests of the border closing but few threats of action which would counter the closing). Between August 27 and September 17 the nature of WTO and NATO conflictive intensity levels are similar: threats and deeds were relatively high; disapproval and demands were relatively low.[66] In the post-crisis phase, September 18 through December 31, military maneuvers of WTO resulted in slightly higher conflictive intensities for WTO than NATO.[67] In summary, total conflictive intensity for WTO and NATO averaged lowest in the pre-crisis phase (daily average = 14 points on the Corson scale); moderate in the post-crisis phase (29 points on the Corson scale) and highest in the crisis phase (96 points on the Corson scale).

Given this brief historical overview and the description of in-
tensities of corflictive behavior, Figure 4 contains the results of the
quantitative analysis. Recall the general proposition that the organi-
zational processes model should explain alliance behavior in the pre- and
post-crisis phases while the event-interaction model should explain such
behavior during the crisis phase.[68]

The values in Figure 4 are path coefficients, which could range from
-1.0 to +1.0. They indicate the relative magnitude of each path in de-
termining current alliance deed intensity. High vertical path coefficients
relative to the diagonals are consistent with an organizational processes
model. Large diagonal coefficients relative to the verticals are compati-
ble with an event-interaction model.

As anticipated by the organizational model in the pre-crisis phase,
the vertical paths for both WTO and NATO are stronger than the diagonals,
consistent with the organizational processes interpretation. For WTO, the
path coefficient is .48 while the diagonal is only -.29. The coefficients
suggest that WTO current deed intensity responds more to its own prior
actions (.48) than to the prior actions of NATO (-.29). The path coefficients
suggest that on the average, for every increase of one intensity unit in
prior WTO action, there is a corresponding increase of about a half unit
in current WTO deed intensity. On the other hand, for an average increase
of one intensity unit in prior NATO action, there is less than a third
unit decrease in current WTO deed intensity.[69]

In the crisis phase, the event-interaction model does not produce
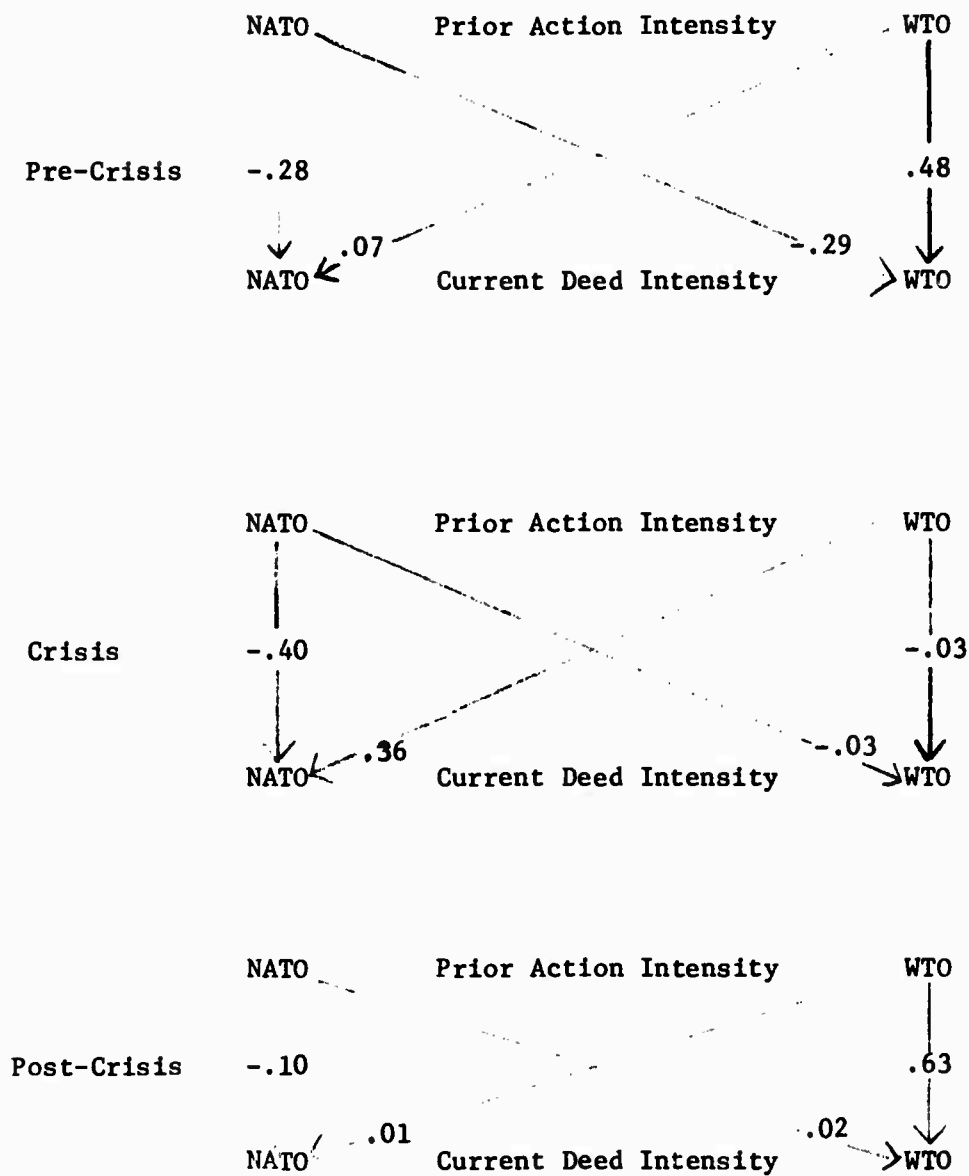the anticipated results. Instead of large diagonal paths relative to the

verticals, both are near zero for WTO. These small coefficients suggest
that WTO deed intensity responds neither to its own prior action intensity
nor to the prior action intensity of NATO.[70] On the other hand, the com-
bined interaction/organization model may be relevant for explaining NATO
deed intensity in the crisis phase. Indeed, the coefficients explaining
NATO deed intensity are moderately large, namely, .36 and -.40. On the
average, for each unit intensity increase in prior WTO action, there is
about a third unit increase in NATO's current deed intensity. For each
unit increase in NATO's prior action, however, there is more than a third
of a unit average decrease in NATO current deed intensity.

In the post-crisis phase for WTO, the vertical path (.63) is much
stronger than the diagonal (.02), consistent with an organizational processes
model.[71] For NATO, both the vertical and diagonal paths are near zero. The
low coefficient for the NATO vertical path, however, is accounted for by the
small variance in NATO intensity. This output is compatible with the or-
ganizational model, which anticipates such consistent behavior in the post-
crisis phase. In summary, the organizational processes model does better
than the event-interaction model in explaining WTO and NATO behavior in
the Berlin conflict of 1961. As anticipated by the organizational model, the
prior conflictive action intensity of both alliances seems to determine
their current deed intensity in the pre- and post-crisis phases. The event-
interaction model by itself failed to explain alliance behavior in the
crisis phase. A combined interaction/organizational model, on the other hand,
does explain NATO deed intensity in the crisis phase.

FIGURE 4

Results for the 1961 Berlin Conflict

Pre-Crisis NATO Prior Action Intensity WTO

Pre-Crisis -.28 .48

NATO .07 Current Deed Intensity -.29 WTO

Crisis NATO Prior Action Intensity WTO

Crisis -.40 -.03

NATO .36 Current Deed Intensity -.03 WTO

Post-Crisis NATO Prior Action Intensity WTO

Post-Crisis -.10 .63

NATO .01 Current Deed Intensity .02 WTO

Implications for Conflict Modelling and Management

The initial general ideas guiding this inquiry are that: (1) the
organizational processes model should explain alliance behavior in the pre-
and post-crisis phases; and (2) the event-interaction model should explain
alliance behavior in the crisis phase. Results indicate that the organiza-
tional ideas exceed the event-interaction notions as valid explanations of
alliance behavior in the case of the Berlin conflict of 1961. Prior to
concluding that organizational ideas are more valid than the event-inter-
action notions, the question of the representativeness of the Berlin con-
flict must be considered. As McClelland indicates, the Berlin conflicts
of 1948, 1958 and 1961 may have been increasingly routinized as a conse-
quence of a bureaucratic processing that had become almost self-generating.
That is, conflict over Berlin occurred so frequently that organizational
processes assumed greater importance over time. Standard operating pro-
cedures grew up around the conflicts as a result of this repetitive pat-
tern. In a case such as the Cuban Missile Crisis of 1962 the event-inter-
action model might be valid within the crisis phase. Thus, it is important to
create a universe of cases for the comparative inquiry of conflicts before
drawing firm inferences from any one case. (The new conflict data should
include information on the interactions and on organizational processes if
possible.)

If the purpose of this inquiry were to generalize about conflicts,
there would be the serious problem of generalizing from one case. The goal
of the study, however, is to make a tentative evaluation of three models

based on limited evidence provided by the Berlin conflict of 1961. In
addition to obtaining data on more cases, it is necessary to explicate fur-
ther the present models and to develop additional models to explain con-
flictive interactions. The present models allow one to make sense of
patterns in the data, but there is a need to develop process models that
describe and explain the evolution of conflict situations.

Process modelling is a research strategy designed to disaggregate
a complex set of interrelated events and behaviors into stages representing
discrete actions or distinct choice points. Process models serve several
useful purposes. First, they direct our attention to processes such as
learning, forgetting, or precedent search which underlie highly complex
patterns of behavior. Thus, process models reduce complex situations to
their basic elements, permitting an economy of description and explanation.
Finally, process modelling could explain the breakpoints in a conflict--
those points where the internal dynamics give way to external factors.

Given that the Berlin case may not be representative and in the
absence of process models, here are some tentative implications for the
current effort at model-building. First, there is the idea that the author
should consider joining the "disillusioned interaction analysts" and add
to the growing number of organizational analysts. Perhaps the Thomas
Schellings and Charles McClellands overemphasize the role of interaction
processes. Perhaps the organizational ideas of Graham Allison and Morton
Halperin are more valid than the interaction notions. Halperin, for ex-
ample, claims that, "In periods viewed by senior players as crises ..., or-
ganizations will calculate how alternative policies and patterns of action

will affect future definitions of roles and missions.... [Organizations] will press for policies which they believe will maintain or extend their roles and missions, even if at some cost to the immediate objectives of the President...."[72] Regarding the present study, Halperin's explanation suggests that alliances should respond more to intra-alliance than to inter-alliance considerations. This accords with the tentative findings for the Berlin conflict of 1961.

Perhaps the most dramatic aspect of these initial results is the continuity shown in alliance behavior across time -- action intensity generally changes in an incremental fashion in the early and late stages of the conflict. Again, the present study is in accord with Halperin who suggests that "...most of the actions taken by bureaucrats... involve doing again or continuing to do what was done in the past. In the absence of some reason to change their behavior, organizations keep doing what they have been doing."[73] The idea of "bureaucratic incrementalism" explaining the performance of foreign service personnel around the world is certainly intuitively appealing. Evidence from the budgeting studies, moreover, suggests that municipal politicians may have something in common with their statesmen counterparts in the foreign service. There is a problem, however, with the incrementalist thesis. How can the incrementalist thesis account for an innovative sequence of interactions such as WTO's ultimatum to NATO, NATO's response increasing its conventional military capabilities, the Berlin Wall and finally negotiations? Although these events are measured, the present quantitative analysis fails to account for such innovative se-

quences. Similarly, the budgeting studies which stress quantitative budget totals may overlook the quality of the programs. Quantitative analysis needs to be supplemented by a study of the qualitative aspects. The latter may be more apt to yield event-interaction sequences.[74]

In summary, this study implies that in modelling conflict an analyst should: (1) specify a universe of cases for comparative inquiry across conflicts; (2) further explicate the event-interaction and organizational processes models, emphasizing their formal axioms and data requirements; (3) develop process models that describe and explain the evolution of conflict in general--emphasizing breakpoints where internal dynamics give way to external factors; and (4) integrate qualitative evaluation of events with quantitative analysis, to ensure that the "quality" of programs is taken into account.

A project underway by the author and his colleagues seeks to implement these modelling implications with the construction of a Computer Aided Conflict Information System (CACIS). Great power conflicts since World War II are being coded in terms of environmental factors, policy options, national interests and involvement, goals, intentions, resources employed (military, economic, diplomatic) and outcomes. CACIS will also include a capability for specifying event-interaction and organizational models within the general framework of a process model of conflict. An important aspect of the process model will be its formal status. Rather than using the relatively loose verbal models of the present study, CACIS will emphasize tight, deductively oriented formal models.

One principal attribute of CACIS is that it is being built around four separate but interrelated modules:

(1) the memory module which stores information about prior conflicts.

(2) the experience module which stores evaluations of strategies used in prior conflicts, and the number of successes, failures or indeterminate outcomes.

(3) the involvement module which estimates the type and magnitude of interests (or values) of conflict participants.

(4) the operational environment module which includes external events and domestic political factors. This module could serve as the basis for the evaluation of the relative potencies of internal processes vs. external events on the policy-making process as well as provide parameters for an all-machine simulation of conflict decision-making.

A second major characteristic of   CACIS is its reliance on the process of precedent search.[75] That is, a party to a conflict, in seeking a solution commensurate with its goals, will search for prior conflicts similar to the current conflict as policy guides. Precedent search behavior assumes the existence of rules or "precedent logics"[76] -- i.e., criteria guiding precedent search--as well as the identification of dimensions of similarity and differences along which conflicts may be located.

CACIS supplements the Computer Aided System for Handling Information on Local Conflicts (CASCON), developed by Lincoln Bloomfield and Robert Beattie.[77] CASCON focuses on local conflicts between small powers or between a small power and one major power, while CACIS will include mainly those conflicts involving more than one major power. Some overlap, however, is expected in the sample of cases selected. CACIS will offer more options to the analyst through the programming of multiple models rather than the single model of local conflict of Bloomfield and Amelia Leiss in CASCON.[78] Finally,

unlike CASCON, CACIS is expected to have a machine simulation capability enabling the user to look at "what might have been" by calling prior relevant cases, applying alternative policy options, and examining the simulated outcomes in relation to a current conflict.

Implications of the present study for conflict management are less certain. Glenn Paige faced a similar problem in deciding whether to draw implications for conflict management from a single case--Korea, 1950. He wondered "... whether it is not premature and irresponsible for the student of decision-making analysis to venture suggestions of an applied nature on the basis of a single case...." Paige concluded that international crises are such important phenomena that it is well worth the risk to venture suggestions.[79] Following Paige's lead, the present study will also make inferences regarding conflict management, with similar caveats about over-generalizing.

The idea of conflict management assumes that conflicts are similar enough to plan for in advance. Some national security policy planners argue that the element of surprise places great constraints upon planning. For example, G.A. Morgan asserts: "The number of theoretically possible crises in the years ahead is virtually infinite. Even to try to plan systematically for all that are moderately likely would be a questionable expenditure of resources."[80] Klaus Knorr and Oskar Morgenstern agree with this, concluding that planning is difficult because intense conflicts are "...essentially unpredictable..."[81]

The notion that conflict planning is virtually impossible because of unpredictability overlooks the fact that contingency planning takes place

in several areas where phenomena are not easily predicted. For example, earthquakes are rarely predictable in advance. Nonetheless areas where they frequently occur have developed standard operating procedures for processing the injured, alleviating congestion and communicating in the absence of normal channels. Similarly, in international security planning, conflict need not be fully predictable for management plans to be written and used as general guides.

Social scientists should not feel uncomfortable at being unable to make point predictions of specific events. Physicists often do not predict individual events, but they are able to explain and predict processes and general classes of events. Social scientists also should seek to explain and predict processes and classes of events. Process models are promising ways of developing explanatory and predictive theory both for processes and general event-classes. The development of conflict intensity scales is a way of constructing more general event-classes.[82] Computer based models and the acquisition of comparable data on a series of historical cases promise to improve the generality of event concepts.

The creation of computer based models such as CACIS should facilitate conflict management in several ways. For example, the results of the present inquiry could be a basis for specifying models in CACIS. These models could then be used to compare a current conflict with prior relevant cases. The present study found that an organizational processes model may explain WTO and NATO alliance behavior better than an event-interaction model, especially in the pre-.and post-crisis phases. Thus, foreign policy decision-making approach seems in general to be more valid than an international

system approach for the Berlin Conflict of 1961. One reason that the

organizational processes model may be more valid here than an event-

interaction model is that standard operating procedures are developed

for the management of repetitive conflicts. If a new Berlin conflict were

to erupt, an analyst could expect the predominance of intra- as opposed to

inter-alliance factors. He could therefore use an organizational processes

model in his pre and post-crisis planning. CACIS would allow the analyst to

compare recurring conflict over Berlin with what occurred in 1948, 1958

and 1961, especially regarding the organizational processes. If such a com-

parison proved useful, the analyst might expect the bureaucratic patterns

of the past to repeat themselves. As a result, the analyst can develop his

plans anticipating standard operating procedures and search processes.

Another way that CACIS might facilitate conflict management is as an

aid to memory in the form of an information retrieval system. The informa-

tion would describe prior conflicts, the policy measures used and their conse-

quences. The institutionalization of prior crisis patterns and the policy

measures employed is important for several reasons. First, the memory of

complex organizations too often resides in now departed personnel who were

instrumental in prior conflict problem-solving. CACIS simply would be an aid

to memory in immediately accessible form. As an aid to memory, CACIS

would facilitate the search for alternative options. Recall the search style

of limited rational actors—they learn to search for alternatives until

they find the one that satisfies goal achievement.[83]

It is also very important to institutionalize alternatives. During

a conflict there is a higher probability that stress may cause the replace-

ment of complex problem solving habits by more basic forms. That is, if stress is intense and persistent, there is a tendency for more recent and usually more complex behavior to disappear and for simpler and more basic forms of behavior to reappear.[84] Thus, there might be a tendency to revert to the standard operating procedures and other familiar organizational processes during periods of highest conflictive intensity. Rather than bringing about a greater sensitivity to the external environment, crisis induced stress may result in a reappearance of standard operating procedures in the intense crisis phase. This is consistent with the tentative findings of the present study.

The hypothesis advanced earlier that standard operating procedures would dominate only the pre- and post-crisis phases is challenged by Thomas Milburn, who seems to suggest that the most intense phase of the conflict would result in the greatest likelihood of standard operating procedures dominating decision-making. Milburn's position contrasts sharply with Glenn Paige's finding that: "The greater the crisis, the greater the sensitivity to external response expectations."[85] That is, Paige suggests that the most intense phase of a conflict is the time when decision-makers are most sensitive to the external environment. The tentative results of the present inquiry indicate that Milburn's position may be more valid than Paige's.

Finally, institutionalization of alternatives would permit the examination of the consequences of conflict management attempts in prior cases. For example, Alexander George specifies seven principles of crisis management, some of which relate nicely to the present inquiry. He asserts that

there should be: (1) high level political control of military options;
(2) pauses in military operations; (3) clear and appropriate demonstra-
tions to show resolution; (4) military action coordinated with political-
diplomatic action; (5) confidence in the effectiveness and discriminating
character of military options; (6) military options that avoid motivating
the opponent to escalate; and (7) avoidance of the impression of a resort
to large scale warfare.[86] CACIS may aid the control over military actions
by specifying alternatives (emphasizing political ones?) and estimating
consequences. CACIS could be used to evaluate the effects of timely pauses
in military operations in a current conflict by suggesting what the impli-
cations were for such pauses in prior conflicts. CACIS may help develop
clear and appropriate demonstrations of resolution, as well as help dis-
criminate among options based upon such intensity scaling as developed by
Corson, In addition, an improved Corson scale might allow for a more subtle
selection of politico-military options and decrease the probability of escalation.

In summary, the present study evaluates an international system and
a foreign policy decision-making approach via their corresponding models:
event-interaction, organizational processes and a combination of the two
models. The design used actions between East and West in the Berlin conflict
of 1961 to infer the unmeasured models. Controls for extraneous variance may
have increased the validity of the inference to the unmeasured models. The
Corson scale of conflict intensity provided a more explicit discriminator of
politico-military options than what is ordinarily used.[87] The Berlin Con-
flict of 1961 provided a laboratory for the exploration of the three models.
The organizational processes model may be more valid than the event-interaction
model in the pre - and post-crisis phases, as anticipated. A combination of both

models may be relevant during the crisis phase, at least for the Western alliance. This analysis finds a relatively incremental pattern of change in conflictive intensity across time (aggregated; not day-by-day) during the Berlin conflict. Thus, there may have been a routinization of decision-making following the two Berlin conflicts of 1948 and 1958.[88]

The implications of this study for conflict modelling and management are tentative but potentially promising. Regarding modelling, the study concludes that analysts should: (1) specify a universe of cases for comparative inquiry across conflicts; (2) explicate the event-interaction and organizational processes models, emphasizing formal axioms and data requirements; (3) develop process models that describe and explain the evolution of conflict emphasizing breakpoints where internal dynamics give way to external factors; and (4) integrate qualitative evaluation of events with their quantitative analysis to make sure that the quality of the policies is taken into account. Regarding conflict management, the study concludes that: (1) the results of the present inquiry could help specify models for a Computer-Aided Conflict Information System, which could be used to compare a current conflict with prior relevant cases; and (2) CACIS might institutionalize prior alternatives and estimate their consequences in similar cases. Such institutionalization should expand the political options short of military force available to decision-makers. Finally, CACIS should not be used to freeze options on the basis of historical precedents. Rather, CACIS should provide a fresh set of alternatives for the adaptively rational actor.[89]

FOOTNOTES

[1]Charles A. McClelland, Theory and the International System (New York:
Macmillan Co., 1966), 20, 104.

[2]Graham T. Allison, Conceptual Models and the Cuban Missile Crisis
Pre-publication manuscript, June 1970 (Boston: Little, Brown and Co., 1971),
100.

[3]J. David Singer, "The Level-of-Analysis Problem in International
Relations," in Klaus Knorr and Sidney Verba (eds.), The International System
(Princeton: Princeton University Press, 1961), 80.

[4]The term strategic interaction in game theory often refers to the
outcome of competing strategies. Here, interaction means the process where
each actor pays attention to and responds to the prior patterns of his
opponent.

[5]The minimax notion differs from the classical economic principle of
maximization since we are concerned with the strategies of more than a
single player. See Herbert Simon, "Some Strategic Considerations in the

Construction of Social Science Models," in Paul Lazarsfeld (ed.), Mathematical Thinking in the Social Sciences (Glencoe: The Free Press, 1954), 388-415. Also see Herbert Simon, Models of Man: Social and Rational; Mathematical Essays on Rational Human Behavior In A Social Setting (New York: John Wiley & Sons, Inc., 1957), 241-260.

[6]Anatol Rapoport, Two-Person Game Theory (Ann Arbor: The University of Michigan Press, 1966), Chapter 9.

[7]Lewis F. Richardson, Arms and Insecurity: A Mathematical Study of the Causes and Origins of War (Pittsburgh: The Boxwood Press, 1960).

[8]Ibid., 12.

[9]Anatol Rapoport, Fights, Games and Debates (Ann Arbor: The University of Michigan Press, 1960), 15-107; and Rapoport, "Lewis F. Richardson's Mathematical Theory of War," Journal of Conflict Resolution (1957), 249-299. See also Kenneth E. Boulding, Conflict and Defense: A General Theory (New York: Harper, 1962); Paul Smoker, "Fear in the Arms Race: A Mathematical Study," in J. N. Rosenau (ed.), International Politics and Foreign Policy (New York: The Free Press, 1969), 573-582.

[10]Martin C. McGuire, Secrecy and the Arms Race (Cambridge: Harvard University Press, 1965).

[11]Robert C. North, "Research Pluralism and the International Elephant," in Knorr and Rosenau (eds.), op. cit., 218-242; Robert C. North, "The Behavior of Nation-States: Problems of Conflict and Integration," in Kaplan (ed.), op. cit., 203-356; Charles A. McClelland and Gary D. Hoggard, "Conflict Patterns in the Interactions Among Nations," in Rosenau (ed.), op. cit., 711-724.

[12]Charles A. McClelland, "The Acute International Crisis," in Knorr and Verba (eds.), op. cit., 182-204; "Access Berlin: The Quantity and Variety of Events, 1948-1963," in J. David Singer (ed.), Quantitative International

<u>Politics</u> (New York: The Free Press, 1968), 159-186. Event-interactions are international actions such as threats and promises (words) or uses of force and offers of proposals (deeds). Event-interactions are different from transactions such as trade and mail flows between nations. The present study deals only with conflictive event-interactions since there were too few cooperative interactions during the Berlin conflict of 1961 to perform statistical analysis.

[13]See below, however, for a discussion of how recurring event sequences may be subsumed under learning models and how such models explain limited rational search behavior.

[14]The mediated S-R model draws on internal attributes (perceptions) more than the other models. Similarly, game theory models applied to world politics focus on the rational intentions of decision-makers, which tap internal attributes of nations. A major criticism of game theory models, however, is their treatment of an actor as a black-box, ignoring psychological and behavioral attributes. See John C. Harsanyi, "Rational-Choice Models of Political Behavior vs. Functionalist and Conformist Theories," <u>World Politics</u> (July, 1969), 513-538; Michael Shapiro, "Rational Political Man: A Synthesis of Economic and Social-Psychological Perspectives," <u>American Political Science Review</u> (December, 1969), 1106-1119. Simon modified game theory by incorporating attributes of the actor and then inferring a new decision-rule -- satisficing. Simon, 1957, <u>op</u>. <u>cit</u>., 241-260. Experimental gaming explicitly treats properties of the actors such as competitiveness, risk and temptation, as well as rewards and punishments. Melvin Guyer, "A Review of the Literature on Zero-Sum and Non-Zero-Sum Games in the Social Sciences," Mental Health Research Institute, University of Michigan, Mimeo, n.d.

[15]R. C. Snyder, H. W. Bruck and B. Sapin (eds.), <u>Foreign Policy Decision-Making</u> (New York: The Free Press, 1962); James A. Robinson and Richard C. Snyder, "Decision-Making in International Politics," in Herbert C. Kelman (ed.), <u>International Behavior</u> (New York: Rinehart and Winston, 1965), 433-463. Glenn Paige, <u>The Korean Decision</u> (New York: The Free Press, 1968); Charles F. Hermann, <u>Crises in Foreign Policy: A Simulation</u>

Analysis (Indianapolis: Bobbs-Merrill, 1969); J. A. Robinson, C. F. Hermann and M. G. Hermann, "Search Under Crisis in Political Gaming and Simulation," in D. G. Pruitt and R. C. Snyder (eds.), Theory and Research on the Causes of War (Englewood Cliffs: Prentice-Hall, 1969), 80-94.

[16]Richard C. Snyder and Glenn D. Paige, "The United States Decision to Resist Aggression in Korea: The Application of an Analytical Scheme," in J. N. Rosenau (ed.), International Politics and Foreign Policy (New York: The Free Press of Glencoe, Inc., 1961), 196.

[17]Simon, 1957, op. cit.; James G. March and Herbert A. Simon, Organizations (New York: Wiley, 1958); Richard M. Cyert and James G. March, A Behavioral Theory of the Firm (Englewood Cliffs: Prentice-Hall, 1963).

[18]Allison, op. cit.

[19]Simon, op. cit.

[20]Allison, op. cit., 100. Allison's "explanation" of present behavior as determined by prior behavior is not an explanation in the sense of specifying why the present behavior occurs. A learning model may be able to explain why organizations repeat or deviate from prior patterns.

[21]Theodore C. Sorensen, Kennedy (New York: Harper and Row, 1965), 587.

[22]This interpretation of the organizational model seems to imply that Kennedy increased the U.S. military budget because of his dissatisfaction with the State Department. External factors such as the WTO threat clearly should be considered to explain the increase in the military budget in this case.

[23]See the essay by Nazli M. Choucri and R. C. North in this volume.

[24]McClelland, 1961, op. cit.

[25]McClelland, 1966, op. cit., chapter 4.

[26]McClelland, 1968, op. cit., 159-186.

[27]McClelland, 1961, op. cit., 200-201. Note that one can explain event-interaction processes with an organizational model, a partial synthesis of the approaches of McClelland and Allison. Also, McClelland actually uses the term crisis where the interpretation in the text above refers to conflicts. The word crisis refers to the most intense phase of a conflict in the present study.

[28]Robert A. Young, "Prediction and Forecasting in International Relations: An Exploratory Analysis," unpublished PhD. dissertation, University of Southern California, June, 1970.

[29]Abraham Kaplan, Conduct of Inquiry (San Francisco: Chandler Publishing Co., 1964), 332.

[30]Carl G. Hempel, "Deductive-Nomological vs. Statistical Explanation," in H. Feigl and G. Maxwell (eds.), Minnesota Studies in the Philosophy of Science (Minneapolis: University of Minnesota Press, 1962), 98-169.

[31]Kenneth P. Langton, Political Socialization (New York: Oxford, 1969), 3.

[32]Simon, op. cit., 274.

[33]Learning models, unlike game theory, use a more bounded concept of rationality. Goals may not be ranked, and search for an alternative which satisfies a goal replaces choice of an optimal alternative.

[34]McClelland, 1968, op. cit.; McClelland and Hoggard, op. cit., 711-724.

[35]Acknowledgements to Judith Tanter for assistance with the behavioral modification analogy. Subsequently, McClelland and his associates have begun to use learning models in their World Event Interaction Survey. Thanks to Gary Hoggard a.d John Sigler for bringing these learning models to the author's attention. See McClelland "Verbal and Physical Conflict in the Contemporary International System," mimeo, August 1970, esp. pp. 4-8.

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[36] Oran R. Young, The Politics of Force: Bargaining During International Crises (Princeton: Princeton University Press, 1968), 19, 28; Thomas C. Schelling, The Strategy of Conflict (Cambridge: Harvard University Press, 1960), 15-16. Note also that evidence suggests that perceptions become more important the more intense the conflictive interactions. See Ole Holsti, Robert North, and Richard Brody, "Perception and Action in the 1914 Crisis," in Singer, 1969, op. cit., 123-158.

[37] Allison, op. cit., explicitly acknowledges other models of foreign policy decision-making, e.g., Allison's rational actor model explicitly includes interaction.

[38] Cyert and March, 1963, op. cit., 101 and 113.

[39] Allison, op. cit., 101-102.

[40] Julian Feldman and Herschel Kanter, "Organizational Decision Making," in James G. March (ed.), Handbook of Organizations (Chicago: Rand McNally, 1965), 662.

[41] Donald W. Taylor, "Decision Making and Problem Solving," in March (ed.), op. cit., 62.

[42] Cyert and March, op. cit.

[43] Aaron B. Wildavsky, The Politics of the Budgetary Process (Boston: Little, Brown and Co., 1964), 11 ff.; also cf. Charles E. Lindblom, "The Science of Muddling Through," Public Administration Review (Spring, 1959), 79-88; David Braybrooke and Charles E. Lindblom, A Strategy of Decision: Policy Evaluation as a Social Process (New York: Free Press of Glencoe, 1963).

[44] John P. Crecine, Governmental Problem-Solving: A Computer Simulation of Municipal Budgeting (Chicago: Rand-McNally, 1969), 219; "Defense Budgeting: Organizational Adaptation to External Constraints," (RAND Corporation, March, 1970).

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[45]Floyd Hunter, Community Power Structure: A Study of Decision Makers (Chapel Hill: University of North Carolina Press, 1953) as cited in Crecine, 1969, op. cit.

[46]Robert A. Dahl, Who Governs? Democracy and Power in an American City (New Haven: Yale University Press, 1961) as cited in Crecine, ibid.

[47]Morton H. Halperin, Bureaucratic Politics and Foreign Policy (The Brookings Institute, March, 1970).

[48]Ibid.; Allison, op. cit.

[49]H. M. Blalock, Jr., "The Measurement Problem: A Gap between the Language of Theory and Research," in H. M. Blalock and A. B. Blalock (eds.), Methodology in Social Research (New York: McGraw Hill, 1968), 5-27.

[50]See the article by Oran Young in this volume regarding strategies that stress logical closure and those which emphasize the search for empirical regularities.

[51]The term action intensity includes both word and deed intensities.

[52]Walter H. Corson, "Conflict and Cooperation in East-West Relations: Measurement and Explanation," paper delivered at the Sixty-Sixth Annual Meeting of the American Political Science Association, Los Angeles, September, 1970a. Also, see Allen S. Whiting, "United States - Chinese Political Relations." The University of Michigan, Mimeo, 1970, 17.

[53]The procedure is to regress WTO and NATO action or deed intensities on time, where each day of the conflict receives a value from one to n, the total days in the specific conflict phase. The residuals constitute the variables for all subsequent regressions.

[54]Corson constructed the scale in two phases. He administered questionnaires to 53 citizens of 13 non-Western and Western countries. In the

first phase, there were 54 conflictive actions arranged in irregular order. With each action printed on a separate card, respondents arranged the actions in rank-order of increasing intensity. The responses from these questionnaires constituted information to compute a mean rank-order for each action, resulting in a 54-item rank-order conflict intensity scale. In the second phase, respondents had 14 conflictive actions selected from the original group of 54; these actions covered the full range of intensity. They were printed on separate cards and presented to respondents in irregular order. Respondents assigned a number to each action proportional to its intensity as they perceived it. Using the responses from these questionnaires, the geometric mean for each event reflected its intensity across respondents. From these data, he developed a 14-item conflict intensity scale and assigned intensity values by interpolation to the remaining 40 conflictive actions. Details of the scaling project are given in Walter H. Corson, "Conflict and Cooperation in East-West Crises: Dynamics of Crisis Interaction," unpublished PhD. thesis, Harvard University, December, 1970b.

[55] The conflict phases outlined in this paper are based on empirical data from a specific conflict and describe only that conflict. Work is under way by the author and his colleagues on the development of a process model of conflict which will draw on this analysis, but will not be limited to it.

[56] Corson originally identified five conflict phases: pre-crisis, intensification, peak, reduction, and post-crisis. For the present analysis, pre-crisis includes intensification, and crisis includes peak and reduction. See ibid.

[57] The path analysis model assumes linearity of regression -- a condition which is not met by the daily conflictive intensity scores shown in Figure 2. This difficulty is lessoned by the fact that the analysis is performed on an aggregation of the scores over a period of several days. Thus, we would expect to find a much more incremental (and linear) pattern of variation in conflictive intensity scores than is present in Figure 2.

[58]Holsti, North, Brody, op. cit.; Hermann, op. cit.; Corson, 1970b, op. cit. Thanks to Paul Smoker for his thoughts on the study of time.

[59]Corson, 1970b, op. cit., 186.

[60]The rationale for selecting intensity levels, aggregation periods, and time lags is in ibid.

[61]In the Berlin conflict of 1961, 28% of WTO actions recorded involved other WTO members acting with or without the U.S.S.R.; 48% of all NATO actions recorded involved other NATO members acting with or without the United States. See ibid.

[62]Here is a summary of the methodology. The independent variables are prior WTO and/or prior NATO action intensities. Both word and deed intensity comprise the action category. The author standardized action intensity within the three conflict phases for each alliance, e.g., action intensity had a mean of zero and a standard deviation of unity, preconditions for path analysis. Standardized action intensity was regressed on time and the residuals were standardized for subsequent regressions. The dependent variables, current WTO or NATO deed intensity, were standardized for subsequent regressions. Note that independent variables are word plus deed intensities while the dependent variables are deed intensities.

[63]For the purposes of this study, May 1, 1961 is the beginning of the Berlin conflict. This establishes a base line period several weeks prior to the WTO ultimatum in early June.

[64]Corson, 1970b, op. cit.

[65]The WTO action August 13, 1961 sealing the border dividing Berlin marks the transition between pre-crisis and crisis.

[66]Corson, 1970b, op. cit.

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[67]The meetings between Soviet Premier Khrushchev and Belgian Foreign Minister Spaak on September 18-19 mark the transition to the post-ciisis phase. The analysis ends on December 31, 1961 because the frequency and intensity of action began to approach the pre-crisis levels of June.

[68]Besides the organizational processes model, there are several other foreign policy type models that might explain incremental outputs during the pre- and post-crisis phases (cf. Allison and Halperin in this volume).

[69]During the pre-crisis phase, WTO actions increased in intensity more rapidly than did NATO actions. Hence, there is a need to describe the relationships relative to their different rates over time.

[70]Small coefficients also may result when there is little fluctuation (variance) in alliance intensity. In this case, the average alliance intensity value over time might predict to future intensity even though the path coefficients were small. Controlling for trend effects, the intensity data for WTO indicates little variance. The interpretation here is that the small changes in alliance intensity are consistent with an organizational processes model only in the pre- and post-crisis phases.

[71]WTO troop movements and related actions in the post-crisis phase give only the appearance of re-escalation.

[72]Halperin, op. cit., 50.

[73]Ibid., 9.

[74]As stated previously, however, one must be careful to avoid selecting historical events in order "to prove" one's hypothesis. Thanks to Alexander George for the critique of the incrementalist thesis regarding the quality of programs.

[75]Hayward R. Alker, Jr. and Cheryl Christensen, "From Causal Modelling to Artificial Intelligence: The Evolution of a U.N. Peace-Making Simulation," Massachusetts Institute of Technology, Mimeo, n.d.

[76]Ibid., 21.

[77]Lincoln Bloomfield and Robert Beattie, "Computers and Policy-Making: The CASCON Experiment," Journal of Conflict Resolution (1971); Robert Beattie and Lincoln Bloomfield, CASCON: Computer-Aided System for Handling Information on Local Conflicts (Cambridge: Center for International Studies, M.I.T., 1969); also cf. Fisher Howe, The Computer and Foreign Affairs (Washington: Department of State, 1967).

[78]Lincoln Bloomfield and Amelia Leiss, Controlling Small Wars: A Strategy for the 1970's (New York: Alfred A. Knopf, 1969).

[79]Paige, op. cit., 360.

[80]G. A. Morgan, "Planning in Foreign Affairs: The State of the Art," Foreign Affairs Vol. 39 (January, 1961), 278; but some authors advocate more planning -- J. C. Ausland and J. F. Richardson, "Crisis Management: Berlin, Cyprus, Laos," Foreign Affairs Vol. 44 (January, 1966), 291-303 as cited in Hermann, op. cit., 33.

[81]Klaus Knorr and Oskar Morgenstern, Political Conjecture in Military Planning (Princeton University, Center of International Studies, Policy Memorandum No. 35, 1968), 10-15.

[82]A conflict intensity scale produces more general classes than raw event data. That is, the scales allow an analyst to aggregate across a variety of events to calculate a general intensity score for the actor.

[83]James G. March, "Some Recent Substantive and Methodological Developments in the Theory of Organizational Decision-Making," in Austin Ranney (ed.), Essays on the Behavioral Study of Politics (Urbana: University of

Illinois Press, 1962), 191-208.

[84]Thomas W. Milburn, "The Management of Crisis," Mimeo, 1970.

[85]Paige, op. cit., 310, emphasis in original.

[86]Alexander George, David Hall, William Simons, The Limits of Coercive
Diplomacy (Boston: Little, Brown and Co., 1971), 8-15.

[87]Cf. Edward Azar, "Analysis of International Events," Peace Research
Reviews Vol. IV, 1 (November, 1970), 83. Azar asserts that, "We code
events and measure their violence content with the 13 point interval scale.
Although we realize that participants to a conflict situation do not use
such an objective instrument, we maintain that they employ an implicit (or
possibly explicit) scale which ranks signals by their violence content."

[88]This study, however, does not compare intensities for the three
Berlin crises; rather, it only has data on the Berlin conflict of 1961.
Thus, there are no hard data presented here on the routinization of conflict
decision making.

[89]Cf. Sidney Verba, "Assumptions of Rationality and Non-Rationality in
Models of the International System," in Knorr and Verba (eds.), op. cit.,
93-117. Acknowledgements to Dennis Doolin for calling attention to the danger
of freezing options on the basis of historical precedents with a system such
as CACIS. There is a great need for what Doolin calls ". . . creative politics--
which is really the essence and true genius of politics--and there seems to be a
danger in an approach that could view routinization as a rule of action." Letter
from Dennis Doolin, June 28, 1971. CACIS attempts to address itself to Doolin's
perceptive critique and to facilitate a "creative politics".