

IV—5

Indicators of International Political Crises: Some Initial Steps Toward Prediction

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A decision-making definition of "crisis" holds that a crisis involves (1) high threat, (2) short decision time, and (3) surprise. Comparative Research on the Events of (33) Nations data is coded for these three traits. The author then sets forth propositions and assumptions regarding crisis handling for the following models: (1) individual stress, (2) organizational response, (3) hostile interaction, and (4) cost calculation. CREON researchers have examined the final crisis phase—response of decision makers in a crisis—as the most complete one for showing crisis indicators. As a preparation for postdiction of crises, coders examine the actions and comments resulting from a decision in order to determine what events constituted crises. The researchers hope to identify actions which precipitate crises. The author calls for an international network of events data stations to monitor data.

I INTRODUCTION

For a variety of reasons, social scientists, at least those in the United States, have a fresh interest in the problems of applying social science knowledge to public policy. An intrinsic part of this renewed activity concerns the tasks of forecasting and predicting policy actions and their consequences.¹

International political crises represent one area in which the question of forecasting has generated considerable discussion and some initial, if tentative, first steps. The selection of crises as a potential subject of forecasting efforts can be explained in various ways. First, the consequences of some occurrences identified as crises in international politics can be severe, not only for the direct participants but for innocent bystanders as well.

Second, individuals in the United States government have from time to time expressed interest in the idea of an "early warning system" for the detection of potentially disruptive international occurrences.² The analogy to a radar early warning system for aircraft and missiles captures the imagination even if it fails to stand up under close scrutiny.

Third, we seem to be evolving a definable set of occurrences that can be reliably identified and labeled as crises. As discussed later, alternative approaches to crisis flourish, but within each major theoretical perspective some agreement appears to

be emerging on the definition of "crisis." In each case, the stipulated definition precludes a number of important international situations that others have loosely referred to as crises, but the sharpened conceptualization lends itself to determining empirically whether crises—so defined—enter into strong relationships with other constructs in each theoretical framework. International crises are beginning to be understood as a delimited set of situations which recur relatively infrequently compared to other types of international activities such as state visits, trade, or voting in international bodies. This very specificity of crises may make them a more suitable subject for forecasting efforts than some other situations.

Finally, the development of a type of aggregate data—events data—is important. The term "events data" remains rather poorly defined, but generally refers to the identification of discrete actions or purposeful behaviors directed at some person or entity. Recently we have recognized that events data represent a coding unit for which categories can be developed that are (1) reliably differentiated by trained coders, (2) sufficiently comprehensive to include any possible behavior that an actor might initiate, and (3) adequately comparative so that the events of an entire set of actors (governmental or nongovernmental) can be included. The comprehensive nature of events data categories allow us to monitor a wide range of behavior. Furthermore, the discrete nature of the

coding unit permits detection of slight changes in the relationship of one nation to others before they appear in other indicators such as trade data.

II CRISES AS A SYSTEMIC VARIABLE

A Systemic Definition

Current definitions of international political crises appear to be influenced by either decision making or systemic analysis. We shall consider each in some detail.

Let us define a system as a set of actors (for example, nations or international organizations) interacting with one another in more or less established patterns and through designated structures. In any given international political system, critical variables which exceed certain limits will increase a system's instability—perhaps to the point where a new system will be formed. A crisis is a situation which disrupts the entire system or some part of it (that is, a subsystem such as an alliance or an individual actor). More specifically, a crisis creates an abrupt or sudden change in one or more of the critical systemic variables.

In the present international system, the stability of existing military relationships depends in part on the relative superiority of the strategic weapon systems of the two superpowers and their mutual deterrence capabilities. A sudden change in one of the superpowers' ability to deter the other would constitute a crisis for the system. The deterrence crisis might not transform the system or the subsystem comprised of the Soviet Union and the United States, but it has the potential to do so.

The systemic approach to defining a crisis suggests the importance of such terms as change and conflict. Because crises engage one or more of the critical variables necessary to maintain the existing pattern of relationships between actors, they necessarily can cause significant changes in the international system. Whether or not a crisis actually produces significant change depends on a number of factors such as the nature of the modified variables, any destabilizing tendencies, and the available techniques for crisis management. Thus, not every systemic crisis results in a transformation of the system, but every systemic crisis has the potential of system change because of the variables it affects. Just as not all crises lead to important changes, not all significant changes are crises. A gradual shift in the rate of

exchange between nations could ultimately have a profound effect on the system, despite only minor changes at any given point in time. The association of crisis with abrupt change also bears on its relationship to conflict. A conflict between parties that continues at a relatively constant level of intensity would not constitute a crisis, but a sudden shift in the level of hostilities—most notably from peace to war—would be a crisis, at least for the subsystem comprised of the combatants.

The above systemic definition of crisis, although arbitrary, is consistent with much of the writing about crisis from a systemic perspective. Thus, crisis has been described as "intensive inputs to the international system . . . unbalancing stabilities" (Triska and Finely, 1968, p. 317), or as "some kind of boundary or turning point" (Boulding, 1963, p. 250), or as "involving significant actual or potential international conflict in either a novel form or at an abruptly changing level" (Wiener and Kahn, 1962, p. 12). One of the more complete systemic definitions of crisis is offered by Young (1967, p. 10):

An international crisis, then, is a set of rapidly unfolding events which raises the impact of destabilizing forces in the general international system or any of its subsystems substantially above 'normal' (i.e., average) levels and increases the likelihood of violence occurring in the system.

An abrupt increase in the likelihood of international violence or war is among the most common systemic definitions of crisis.

The Significance of Systemic Crises

If a class of crisis situations can be operationally defined from the guidelines discussed above, what contribution might this variable make to the analysis of international political systems? Or, to put the matter another way, if we could predict systemic crises, what kind of results would we expect? The structures and processes that maintain an international system may be more or less subject to the sudden stresses imposed by crisis. The question then arises as to what structures and processes are most "sensitive" to crisis situations. Sensitivity can vary in several ways, including the tendency for some part of the system to be more frequently exposed to crises. For example, interactions between actors who seek alterations in their international status are more prone to crises than interactions between actors who have

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accepted their status positions. Sensitivity also develops because some elements of a system can vary less than others without exceeding critical thresholds. For example, a system may be able to withstand considerably greater variation in the degree of conflict between smaller states than it can between major states. Essentially, these questions concern the effect of crisis on system stability and transformation.

Because international systems differ, the impact of crisis can be expected to vary according to the type of system. This observation leads to such research questions as: Does the nature of the international system influence the frequency with which crises occur? Are certain systems better structured to allow policy makers to cope with crises without destroying the system? According to Waltz (1964, p. 883), one "distinguishing factor in the bipolar balance, as we thus far know it, is the nearly constant presence of pressure and the recurrence of crises." In addition to finding crises more frequent in a bipolar than multipolar system, Waltz also contends that in a multipolar world, a nation's policy makers can create a crisis to further their objectives with the hope that opponents of the change will not coalesce in opposition. In a bipolar system, the permanency of opposing polar powers greatly increases the probability that any move to initiate a crisis will be countered.³ Thus, two relevant hypotheses from the Waltz study are that the type of international system influences (1) the rate with which crises occur and (2) the probability of direct confrontations between actors when any actor attempts to abruptly change significant systemic variables.

Conflicting hypotheses exist concerning the systemic consequences of numerous crises. Wright (1965, p. 1272) has contended that the probability of war in a given period of time increases with the frequency of crises. McClelland (1961) and Waltz (1964) both make the opposite hypothesis,⁴ although each case uses different arguments. The nature of a given international system may be introduced as a mediating variable to resolve this apparent contradiction. In some inherently unstable systems, the appearance of a single crisis might trigger war. In other robust systems with effective regulatory mechanisms, crises might be repeatedly managed without resorting to war. The availability to both the Soviet Union and the United States of a tremendous destructive capability that can be applied even after absorbing an initial nuclear attack may serve

as such a regulator of crisis effects in the present international system.

Predicting Systemic Crises

As the preceding discussion suggests, advanced warning of systemic crises would allow one to consider what counter measures might be undertaken to maintain the stability of the present international system (assuming that was one's objective) or to minimize the likelihood of war. It does not seem necessary to explicate further in this preliminary paper the value of being able to predict the emergence of a systemic crisis. Several initial attempts have been made to devise methods to forecast systemic crises using events data. The major efforts of which I am aware have been conducted by McClelland and his associates. These attempts employ the World Event/Interaction Survey (WEIS)—a data set that classifies the foreign policy behavior of most nations in the world as reported in the *New York Times* for the period from January, 1966, to the present.⁵

The effort to predict crises results from a larger effort by the McClelland group to make short-term forecasts of the patterns of international events associated with various nations. As McClelland (1969, p. 19) stated in an early paper:

About the simplest approach that can be taken to prediction is the short-range projection of a stream of events that has already begun to flow in a particular configuration or direction. This is where we propose to begin. The necessary operations are (1) to detect if change is occurring, (2) to measure it, (3) to compare (it) with past records of comparable flow changes, and (4) to project it.

This statement reveals two important features of the McClelland group's work on forecasting. First, their work involves a macro-hypothesis that a nation's foreign policy behavior for the next period of time can be projected on the basis of their past behavior. Second, although there is no specific mention of crisis in the quotation, the statement opens the way for defining crisis as a sudden change in the interaction pattern of the nations.

On the assumption that nations involved in an international crisis will display a greater range of variety of behaviors than they will in noncrisis periods, McClelland (1971, pp. 117-124) has experimented with an operational definition of crisis based on a measure of relative uncertainty used in information theory called HREL. In a

study using events data for the conflict arenas of Berlin and Taiwan, McClelland (1972) used postdiction to identify with the HREL measure those years in which crises had occurred from a much larger sample of years.

A paper by Gary Hoggard (1970), a former colleague of McClelland, illustrates the procedures employed in the early *forecasting* efforts with WEIS data.⁶ Using the assumption that behavior begets behavior, he determined the total volume of foreign policy activity involving each of 118 countries for each of 56 months (January, 1966, to August, 1970). For each nation's distribution in the study the mean, standard deviation, and associated Z scores were determined. The volume of activity for every nation during the month of September, 1970, was converted to a standardized score, and those resulting national scores that were more than 2.0 standard deviation units from the mean of that country's past behavior were, in effect, predicted to be involved in crisis. Most nations with deviations for that month were involved in situations created either by the Arab Commando airliner hijackings or the Jordanian civil war.

John Sigler (1971) advances still another method of forecasting systemic crises with the WEIS data, although he limited himself to postdiction in his initial research. Sigler used an index of international affect developed by Herbert Calhoun to identify months when both nations in a dyad directed highly negative behaviors (as indicated on the scale) toward each other. He asserted that this mutual antagonism would mark periods of crisis.

Each author of these early crisis projection efforts acknowledges readily the preliminary nature of his work and specifies shortcomings which the researcher himself perceives. They must be heralded for their pioneering work in a subject which all social scientists talk about, but which few undertake. It seems extremely likely that they themselves would be quick to agree with the following observations. First, the simple statistical models used in the projections discard important information which we know about interaction patterns when they assume that the rate or distribution of behavior will approximate those of the past (e.g., deviation from some measure of central tendency) or when they project a linear trend (e.g., various linear regression models).⁷ Second, the techniques for operationalizing crisis remain quite broad. In some cases almost any change in interaction patterns qualifies as a crisis;

however, Sigler has limited the indicators of crisis to periods of mutually hostile behavior. This operationalization still falls short of the conceptual definition of a systemic crisis which, we noted earlier, involves some change in a variable *critical for the maintenance of the system* or subsystem. Third, little effort seems to have been made to indicate before the analysis began the specific kinds of situations that the predictions or postdictions should identify. Instead, these early researchers appear satisfied when retrospectively the situations singled out by their procedures include situations that individuals might regard as crises. Finally, this approach to prediction fails to differentiate clearly between the first indicators of crisis and the crisis itself. Those forecasting efforts that assume that the behavior or interaction in the next unit of time will be similar to those recorded in the preceding unit of time "use" deviations from the expected pattern as indicators for predicting a forthcoming crisis. However, when the unit of time scrutinized for indicators of crisis covers a month or longer, the actual crisis may occupy the same block of time as the indicator. Rather than alerting one to a crisis about to unfold, the procedure establishes only that the most recently monitored block of time contains the deviation forewarning of a crisis and the crisis itself. Its utility as a crisis early warning system appears in doubt.

III CRISES AS A DECISION-MAKING VARIABLE

A Decision-making Definition

Central to the decision-making approach is the process by which policy decisions are made and the individuals or groups which make decisions. The decision makers behave according to their interpretation of the situation, not according to its "objective" character as viewed by some theoretical omnipotent observer.⁸ Therefore, in attempting to explain how different kinds of situations influence the final choice, the analyst must interpret the situation as it is perceived by the decision makers.

The use of crisis as a situational variable which partially explains the policy maker's decision recalls the stimulus-response model familiar to psychologists. Crisis acts as a stimulus; the decision represents a response. In the usual experimental application of this model, the researcher varies an event or act which is used to

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account for any observed variation in the respondent's behavior. Applying this model to the interaction between policy makers of two nation-states, several political scientists have expanded the paradigm to include (1) the stimulus or actual policy of the initiating state, (2) the perception of that stimulus by the decision makers in the recipient state, (3) the response or actual reply of the recipient state, and (4) the perception of that response by the decision makers in the initiating state (Holsti, Brody and North, 1964). As in this modification of the stimulus-response model, the definition of crisis required by the decision making approach must take into account the screening processes of human perceptions.

Those analysts who have studied crisis using the decision-making approach display no more agreement regarding the definition of crisis than do their counterparts who have applied the systemic approach. As before, we stipulate a definition which delimits a class of situations and contains some of the properties frequently associated with crisis. Specifically, a crisis is a situation that (1) threatens high-priority goals of the decision-making unit, (2) restricts the amount of time available for response before the decision is transformed, and (3) surprises the members of the decision-making unit by its occurrence. Threat, time, and surprise all have been cited as traits of crisis,⁹ although until recently all three properties have not been combined. Underlying the proposed definition is the hypothesis that the presence of all three traits together will alter the decision process substantially more than if only one or two appear. The set of events specified by this definition contains many situations that observers commonly refer to as crises; for example, the 1950 American policy decision to defend South Korea, the 1962 Cuban missile episode, and the 1965 decision to send marines to the Dominican Republic were crises. But other situations would not be considered crises for policy makers in the United States, e.g., the 1958 ultimatum on Berlin, the extended Greek-Turkish-Cypriot dispute, and the mission in 1964 to rescue Europeans in Stanleyville (Congo). The exclusion of these and other situations that do not contain at least one of the three traits does not deny their importance or the significant consequences of the resulting decisions. Their classification as noncrises simply indicates that these situations may differ with respect to the decision process in some systematic ways from those included in the crisis set.

Because situations differ in their degree of threat, in their duration through time, and in their amount of surprise, each of the three traits that define a crisis can be conceived as one extreme on a dimension with scale positions for every possible quantity of each property. When taken together at right angles, these three scales form a three-dimensional space in which all situations can be located according to their degree of threat, time, and awareness (surprise).¹⁰ In Figure I, this space has been closed to form a cube, the eight corners of which represent all possible combinations of the extreme values of the three dimensions. Thus, the corners of the cube represent ideal types of situations with respect to threat, time, and awareness. Few, if any, actual situations correspond to these ideal types, but as the location in the cube of a specific situation approaches one of the corners, that situation can be treated as influencing decision making in a manner similar to the ideal type.

To illustrate the location of a situation along a dimension, consider the decision time in both the Korean crisis of 1950 and the Cuban crisis of 1962. As the South Korean army crumbled before the North Korean advance, the initial optimism of American decision makers changed to a realization that unless the United States intervened quickly, the invaders would control the entire peninsula. The first meeting with President Truman to discuss the Korean situation occurred on Sunday evening, June 25. After a series of steps taken in the next several days to support the faltering South Korean army, the President decided early Friday morning, June 30, to commit American ground forces. Although Truman and his advisers considered the time to be extremely short, other situations such as the detection of a launched ballistic missile attack could offer even less time for decision. Thus on the time dimension the Korean decision would be located near the short time end of the scale, but not at the most extreme point. The Cuban missile crisis also represented a short decision time because, as the American policy makers observed, once the missiles were operational, they would be extremely difficult to remove without the possibility that some of them would be launched in retaliation. With missiles prepared for firing, the situation facing the leaders of the United States would become drastically altered. The first presidential session on that crisis occurred on the morning of Tuesday, October 26; the following Tuesday President Kennedy issued the Proclamation of the Inter-

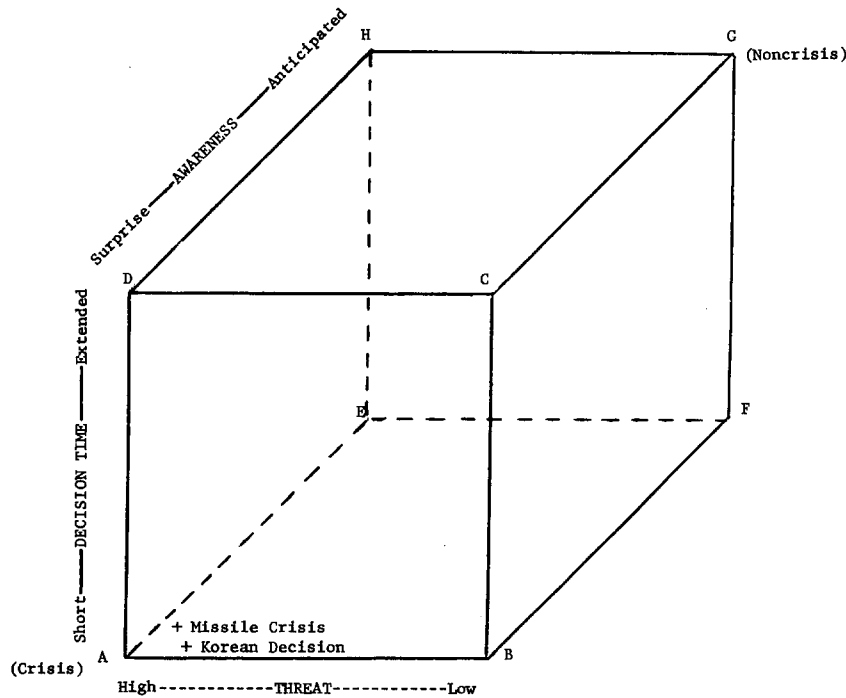


FIGURE 1 A representation of Threat, Decision Time and Awareness showing two American decisions.

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| A. High Threat/Short Time/Surprise | E. High Threat/Short Time/Anticipated |
| B. Low Threat/Short Time/Surprise | F. Low Threat/Short Time/Anticipated |
| C. Low Threat/Extended Time/Surprise | G. Low Threat/Extended Time/Anticipated |
| D. High Threat/Extended Time/Surprise | H. High Threat/Extended Time/Anticipated |

diction of Offensive Weapons that ordered the blockade to begin the next morning. In actual time the decision in the missile crisis was more extended than that of the Korean crisis. If the decision compared with the hypothesized consequences of situations that approach the ideal types represented by the other seven corners of the cube in Figure 1. Examples of the eight kinds of situations—crisis, innovative, inertial, circumstantial, makers' perceptions of available time are used, some evidence indicates that the Korean crisis as compared to the Cuban crisis involved even less time than estimates based on clock or calendar. Despite these differences, the perceived time for both decisions puts them near the extreme of short time, and both decision processes could be expected to resemble ideal situations involving short decision time.

The effects of a crisis on decision making can be reflexive, deliberative, routinized, and administrative situations—have been presented elsewhere, together with propositions about the implications of each situation for the decision process (see Hermann, 1969).

The Significance of Decision-Making Crises

What needs to be established here is that some hypothesized consequences of crisis, when defined in terms of threat, time, and surprise, justify attempts to predict these situations. Previously with an associate (Hermann and Brady, 1972), I have suggested several different models based on the decision-making definition of crisis that account for some of the empirical effects various observers have attributed to crises. The basic statements associated with each model and some related consequences can indicate the elements associated with a crisis in the decision-making framework.

Individual stress model

1) *Assumption* International crises involve a threat to one or more major national goals of a nation experiencing the crisis.

2) *Proposition* Individual national policy makers tend to internalize national goals and treat them as personal objectives.

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3) *Proposition* Threat to personal objectives increases stress within that individual.

4) *Proposition* Therefore, national policy makers experience stress in international crises.

5) *Proposition* The national policy makers likely to experience the most stress in an international crisis are those charged with the conduct of a nation's foreign affairs.

6) *Proposition* International crises increase the probability that the stress will be so severe as to disrupt the cognitive processes of the foreign policy decision makers involved.

Consequences associated with this model include repetition of responses regarded as successful in prior situations, production of stereotyped communications to others, shifts in priority of objectives, reduction in the number of alternatives available to one's own nation and one's allies as compared to one's opponents, interpretations of the present situation as zero-sum, and less ability to comprehend tacit bargaining moves.

Organizational response model

1) *Proposition* Participation in the decisions regarding the treatment of an international crisis is limited to a small group of individuals.

2) *Assumption* Individuals charged with the formulation and conduct of foreign policy in contemporary nations are embedded in large, hierarchically structured organizations.

3) *Proposition* The more important to a nation a foreign policy problem is perceived to be by those in the government who detect it, the higher in the organizational hierarchies will be the individuals who consider the problem.

4) *Assumption* International crises are interpreted by those in foreign policy organizations as extremely important.

5) *Proposition* Therefore, in an internal crisis, participation in the decision as to the treatment of the situation will primarily be limited to a small group of individuals from the highest levels of a government's foreign policy organizations.

Some consequences of this model include increases in the volume of internal communication, information overload, improvised communication channels, accelerated consumption of resources, more diversity in the types of actions initiated, increased focus or concentration of attention, and

a greater tendency to circumvent established bureaucratic procedures.

Hostile interaction model (represents some of the basic properties associated with escalation spirals)

1) *Proposition* The expression of hostile behavior by governmental policy makers toward a target is a function of the previous hostility they perceived the target or its associates to have directed at their country and their own prior expressions of hostility toward the target.

2) *Assumption* International crises involve a sudden threatening action that will be perceived by the leaders of one or more nations as hostile behavior addressed to them.

3) *Proposition* Therefore, the more threatening the policy makers perceive the act precipitating the crisis to be the more hostile their response and, conversely, the less threatening the act is perceived to be, the less hostile their response.

4) *Proposition* If hostility occurs in the context of an international crisis, then the likelihood of physical acts of force and violence increases.

5) *Proposition* Hostile expressions by the recipients (B) of the behaviors that precipitated the crisis will be perceived by the initiator (A) and will result in more intense expressions of hostility by A toward B.

Unlike the individual stress and organizational response models, the hostile interaction model contains in its basic set of propositions the consequences or behavioral outcomes, that is, variation in the level of hostile, violent behavior.

Cost calculation model (assumes that the policy makers' response depends upon a more or less rational process of estimating the costs and benefits associated with different actions)

1) *Assumption* The national goals most important to national policy makers concern the physical survival of the presently constituted nation and certain core values that define the society. These goals and values will be called survival goals.

2) *Assumption* The national goals initially endangered in an international crisis may or may not include danger to survival goals.

3) *Proposition* In response to an international crisis, national policy makers will take actions designed to eliminate or minimize the danger presented by the crisis to major national goals.

4) *Proposition* If the policy makers believe that the initiation or continuation of certain actions in the crisis substantially increases the threat to survival goals, they will seek to negotiate a settlement of the crisis, or, failing that, they will forfeit the threatened nonsurvival goal(s).

5) *Proposition* If the crisis poses a direct threat to survival goals, the policy makers will seek to negotiate a settlement and will refrain from any deliberate actions that they believe will reduce the likelihood of a settlement.

6) *Proposition* Therefore, the more an international crisis threatens a nation's survival goals, the more effort will be made to achieve a settlement; and, conversely, the less threat to survival goals, the more likely are hostile actions to be taken as part of the effort to protect the major goals that are endangered.

When a crisis escalates to the point of endangering some of the policy makers' survival goals, the hypothesized consequences include moves to minimize risk, reduction of physical acts of violence, willingness to bargain and negotiate, projection of an image that policy makers are in control of their subordinates and citizens, and the termination of the crisis without war.

It should be stressed that some empirical evidence exists for the consequences associated with each model, although some apparent contradictions exist between the models. Elsewhere we (Hermann and Brady, 1972) have made attempts to introduce an "overarching" model to account for many of these differences. Yet another model that I have presented earlier (Hermann, 1969) involves the concept of cognitive consistency or balance and postulates that when faced with situations having high threat, short time, and surprise, decisions makers will initiate more extreme behavior (either overreaction or underreaction) than they would in noncrisis situations. The major point which this section seeks to demonstrate, however, is simply that crises (defined in the stipulated manner) influence a number of process and outcome variables, thus making such crises important subjects for prediction.

Predicting Decision-Making Crises

Unfortunately, even less effort has been made to predict crises defined from the decision-making than from the systemic approach. In the balance of

this article I will describe a few considerations that need to be taken into account in any effort to predict crises for decision makers and some preparations for postdiction of crises with events data that we are undertaking as a preliminary step.

Even though we have stipulated a definition of crisis consistent with the decision-making approach, a question remains as to the stage in an evolving situation to be scrutinized for indicators of the crisis. The problem can be illustrated by the diagram below, which represents five phases arranged in an ordered time sequence.

In principle an investigator could look for indicators in any of the five phases of a crisis. Each has advantages and difficulties for prediction. Indicators of the conditions that lead one entity to act in such a way as to precipitate a crisis for another entity would allow policy makers the most lead time in averting or preparing for the development. However, we lack a comprehensive theory that explains why a nation's leaders start crises. Probably the reasons are varied and numerous. Under such conditions, the network of behavior and attitudes that should be monitored would appear to be unmanageably large.

Using as indicators those actions of external entities that will result in crises for a given set of target decision makers once the action is received (phase 2 in the diagram) would be valuable to the agent precipitating the crisis as well as third parties. Such indicators might prove less useful to decision makers in the target nation as an early warning device, inasmuch as they likely received the action simultaneously with, or before, the analysts making the prediction. Nevertheless, policy makers might find utility in outside confirmation of the fact that the situation they were experiencing would increase the probability of certain kinds of developments unless special corrective steps were taken. One problem encountered by using the precipitated action to predict crises is the requirement that the forecasting model include inputs about the conditions under which a given set of individuals perceive threat, short time, and surprise before they actually do so.

Predictions based upon phase 3 indicators would offer many of the same advantages as phase 2 to the target policy makers except that they would probably be ascertainable only at a somewhat later stage in the crisis when the target decision makers began to verbalize or otherwise provided observable cues as to their perceptions. Access to

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Conditions leading entity to initiate action having crisis properties for one or more others	Action having crisis properties for one or more entities	Perception of situation as crisis by decision makers	Effects of perceiving situation as crisis on decision processes	Response of decision makers in crisis

these verbal statements and other indicators—before the crisis has run its course—presents a serious problem for those analysts who remain outside the highest levels of the target nation's government.

Both phases 4 and 5 use as indicators the consequences of experiencing a crisis. Phase 4 deals with the effect on the decision process, and phase 5 presents the resulting outputs. Predictions based on indicators in either phase of a crisis would be of diminishing utility to those individuals involved, because the indicators would normally manifest themselves rather late in the entire sequence of an unfolding crisis. Indicators of changes in the internal decision process share with indicators of perceptions the difficulty of monitoring by outsiders as the crisis transpires. An additional problem with using responses (phase 5) as indicators of crisis arises because most of the behavior asserted to occur in crises can occur under other conditions as well, although perhaps not as often. The most distinctive characteristics of outputs may be in variety or volume, as McClelland and his colleagues have noted. The reference to McClelland underscores the observation that researchers interested in using outputs as indicators often have an interest in problems best tackled with the systemic rather than the decision-making approach.

The choice as to which phase of a crisis one examines for indicators, probably depends on the state of one's technology and theory and the kind of purposes for which the prediction is undertaken. Before discussing the phase from which we have chosen to draw our indicators, one other consideration in predicting crises should be mentioned. Even if we select a set of situations all having high threat, short decision time, and surprise, there may be important subsets within that set; in other words, there may be families of crises with important distinctions for decision making. For example, actions having all three

properties may be accidental or deliberate. Accidental actions may in turn result from acts of nature (e.g., death of a key statesman, destruction of a critical part of the defence system by a natural disaster, as in the 1950s when a large number of American B-36 aircraft were caught in a hurricane at bases in Texas) or from unintended human behavior (e.g., errors, unanticipated side effects of other action). Deliberate actions can be carefully planned in advance or the product of a sudden impulse. For example, Krushchev could have cancelled the 1960 summit conference without extended, advanced consideration, but he could not place missiles in Cuba without extensive preparation. To the extent that a crisis participant perceives these distinctions, they may alter his behavior. Other categories of crises can be advanced. Some persons may wish to identify all the situations near the high threat side of the cube in Figure 1 as different kinds of crises. Alternatively, researchers may believe that decision making will be affected depending upon the degree of uncertainty of execution associated with threats or the prior history of the initiator and the target of crisis.

Although acknowledging the possible significance of subsets of crises, the investigators in the Comparative Research on the Events of Nations (CREON) Project have elected not to include such distinctions in their first efforts. Instead we have collected events data which are coded for threat, decision time, and surprise, as well as other factors. Our indicators of crisis emerge from the last phase of the five-stage diagram presented earlier; that is, the indicators are responses of the decision makers to the crisis they are experiencing. We selected this phase because, in our present data source, often the most complete information about the triggering action occurs at the time a response is made. Later with this experience and data based on multiple sources, we hope to be able to move

from the response to the use of the triggering action as the crisis indicator.

At present the CREON data base consists of all foreign policy actions initiated by any of 33 nations during one quarter (three months) of each of ten years (1959-68) as reported in a single source, *Deadline Data on World Affairs*. Coding procedures have been devised to allow us to reliably identify and abstract the foreign policy events for each of the 33 nations in our sample.¹¹ By definition an intrinsic part of each of these events is the *action* resulting from a decision by the political authorities of the state who have the power to commit the national government. For the purposes of our attempt at the postdiction of crises, coders examine each of these actions (and the comments that frequently accompany them) for clues about the circumstances that led to the present action. More specifically, coders check to determine if an action constitutes a response to a previous externally initiated action. If the present event is a response, then they search for indicators that the prior action was perceived by the decision makers to have involved threat, short time, and surprise.¹² In this way we hope to establish which of all the events directed at the 33 nations constituted crises for the decision makers. The events identified with crises in this manner will be compared with an independently derived list of the international crises experienced by the 33 nations during the period under examination. Our data set also includes information about the internal decision processes—the level of the decision makers, the kinds of groups involved, and so on. With this information, we will determine whether the decision processes for crises differ from those for events located near other corners of the cube in Figure 1.

From the experience at postdiction using response to crisis (phase 5) we intend to move to the direct identification of actions that precipitate crises (phase 2). Once we are in a position to monitor a continuous stream of foreign policy actions and single out those with crisis potential for a given group of decision makers, the task of prediction will be at hand.

IV AN INTERNATIONAL NETWORK OF EVENTS DATA STATIONS

This article has described the first extremely modest efforts to predict international crises

undertaken from two different theoretical perspectives. Significantly these efforts all depend on the use of events data. It is also notable—and most unfortunate—that these efforts depend exclusively upon American data sources—the *New York Times* and *Deadline Data on World Affairs*. These projects and others like them will suffer an inevitable bias so long as they remain dependent upon sources and researchers from one society. In the author's view, the kind of research reported in this paper had to await the development of events data as one kind of aggregate political data. Not only for the prediction of international crises, but for many other research efforts in international and comparative politics, we need a broader research base to gather data on the attributes and behaviors of nation-states. We need teams of scholars with shared or overlapping research interests in different societies and cultures to monitor and record, in an agreed-upon fashion, certain kinds of national data—including events data.

Boulding (1966, pp. 74-75) has made an appeal worth quoting at length.

... Its (the international system's) existing information collection and processing is enormously biased by other purposes, either the justification of existing national attitudes or the operation of national threat systems, or even the interest of the readers of newspapers. It would now be possible, however, to set up a system of information collection and processing which should be scientific in the sense that the information is collected for its own sake, not for other purposes, and that it should be collected by processes of careful sampling and statistically ritualistic procedures which permit comparability of concepts and the aggregation of information collected. What we need, in fact, is a world network of social data stations, something like weather stations, perhaps one to each five million people. These should for the most part be associated with universities, where they could perform the function of a laboratory for training and research, as do meteorological stations. We cannot expect to know very much about the atmosphere unless we have a world network of weather stations, and similarly we cannot expect to know very much about the sociosphere until we have a world network of social data stations. With such a network and a centralized information processing centre, not only could we obtain accurate demographic and economic data but we could also obtain indices of hostility, perceptions of threat, changes in value systems and so on, which are now largely inaccessible.

Some individuals will quarrel with Boulding that better data sets must await better theories. Without denying the necessity of improving the fragments of theory which yield empirically testable statements, I would contend that in the study of crises as in some other areas, our theoretical thinking may soon outrun the quality of the data with which it is tested. My own principle

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reservation in the Boulding statement—other than that we might begin on a more modest scale than his quotation implies—is the reference to a single “centralized information processing center.” All the raw data must be immediately available to all the contributors to process, restructure, etc. as their own research needs dictate. The general idea which he advances, however, should increasingly become a major topic of discussion and action at international gatherings of social and behavioral scientists.

NOTES

This article was originally presented at a conference, “The Political System in Crisis,” convened by Professor Martin Jänicke at the Freie Universität, January 10-13, 1972, and sponsored by the Otto-Suhr-Institut. The article, under the title “Indikatoren Internationaler Politischer Krisen,” and the other proceedings of the conference have been published in a volume edited by Martin Jänicke and entitled *Herrschaft und Krise* (Stuttgart: Westdeutscher Verlag, 1973). It is reproduced here with the permission of the editor and publisher. The author's research activity reported in this paper is part of the Comparative Research on the Events of Nations (CREON) Project sponsored by grants from the National Science Foundation (GS 3117) and the Mershon Center at the Ohio State University. Special acknowledgment should be given to Thomas Milburn and Linda Brady, who joined with the author in a series of informal discussions on the task of predicting crises throughout the fall of 1971.

1. There are various indications of a new interest in the policy sciences including, for example, several new journals such as the *Journal of Applied Social Psychology* and *Policy Sciences*. Recent discussions of prediction in foreign policy are illustrated in the articles by Wilcox (1971) and Tanter (1972).
2. J. David Singer reports that he surfaced the idea at a Pugwash Conference of Western and Communist bloc scholars,

thereby generating informal discussion, no specific examination of the problem resulted. An advisor to the President of the United States has expressed on several occasions interest in an early warning system for crises.

3. It is interesting to note in this context that one of the polar powers in the present system, the United States, was directly or indirectly involved in one third of the forty-eight crises mentioned by former Secretary of State Dean Rusk in Congressional testimony.
4. McClelland (1961) proposes that experience is gained with the management of each crisis; therefore, policy makers cope more successfully with subsequent crises. Waltz (1964, p. 884) suggests that if continuing hostility exists between two parties, crises may become a substitute for war. Aron (1966, p. 565) notes a “trend toward the diminution of the force used” in direct crises between the Soviet Union and the United States, but he does not speculate that this pattern could be generalized to all parties experiencing repeated crises.
5. For a description of the World Event/Interaction Survey, see McClelland *et al.* (1969) and McClelland and Hoggard (1969).
6. Other early attempts at prediction with the WEIS data are reported in Moore and Young (1969).
7. Recent reports from the McClelland group reveal that they are preparing to use models that take better account of some of the information in the WEIS data. See the discussions of exponential smoothing of a forecast technique and of a computer simulation in Charles A. McClelland *et al.* (1971).
8. Harold and Margaret Sprout (1965, pp. 28-30) are among those who have carefully explicated this point.
9. See the review of these traits in Hermann (1963) and Hermann (1969).
10. We shall use surprise as one extreme on an awareness dimension in order to permit a construction parallel to that for threat and time. Thus the complete absence of awareness is surprise; the other extreme is anticipation. Because awareness refers to a condition of the decision maker (i.e., his perception), the term is less satisfactory when one deals with the observers' estimation of the properties present in the situation.
11. For descriptions of various aspects of the CREON Project, see Hermann (1971), Hermann and S. Salmore (1970), and Hermann, S. Salmore and East (1971).
12. A coder responds to a series of “yes” or “no” questions on each of three properties associated with crisis to determine how to classify the previous event. See B. Salmore and Brady (1972).