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JAMES A. ROBINSON · CHARLES F. HERMANN · MARGARET G. HERMANN

Search Under Crisis in Political Gaming and Simulation[1]

A study of the behavior of foreign-policy makers in crises, employing multiple runs of the Inter-Nation Simulation. Six hypotheses are tested, which were deduced from theories borrowed from several branches of the social and behavioral sciences.

Crisis

Crisis usually connotes a situation or event that threatens something about which someone cares greatly. The word belongs to the layman, not to the specialist. With few exceptions (e.g., Lasswell and Kaplan, 1950, pp. 242–243), social scientists have not defined crisis functionally or technically. Consequently, the term has several meanings (Miller and Iscoe, 1963; Wiener and Kahn, 1962). A number of current uses illustrate its connotations. For example, at least thirteen books in which crisis is the first word of the title were scheduled for publication within four months of 1964 (*Publishers' Weekly*, August 31, 1964, Vol. 186, No. 9, Title Index). The titles included crises in the humanities; crisis and response; crisis in medical education; and crisis of political imagination. To suggest the wealth of meanings attached to the term, Hermann (1965, Chap. 1) documented that psychologists and sociologists frequently use crisis in technical papers as if it were synonymous with disaster, panic, stress, and tension.

Initially, we were interested in crisis in organizations that decide foreign policy (Hermann, 1963). Surveys of numerous decisions and relatively intensive studies of a few cases (Snyder, Bruck, and Sapin, 1962; Robinson, 1962, pp. 23–69) led us to consider crisis as one kind of decision situation or "occasion of decision" (Barnard, 1938).[2] From the rich and varied connotations of the term, we selected three that we denoted as *crisis*. In adopting a relatively technical definition, we undoubtedly surrendered some of the interpretive range of the looser term; but, what we lost in generality, we hoped to gain in precision.

For our research on crisis, we classified occasions of decision in three ways. First, a situation is either *anticipated* or *unanticipated*. The North Korean invasion of South Korea in June, 1950, was unanticipated by decision makers in Washington and other capitals (Snyder and Paige, 1958). Likewise, the discovery of Soviet missiles in Cuba in early October, 1962, apparently was not anticipated at the highest levels of American policy making. In contrast, one notes situations about which decision makers receive advance warning, as in the periodic extension and revision of trade-agreement legislation (Bauer, Pool, and Dexter, 1962).

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Second, in this research, crisis situations were classified according to the degree of *threat* they presented to the decision-making unit. In international relations, one typically thinks of threats as involving potentially severe damage to the goals or objectives of the decision makers of a nation-state or to those of the authoritative decision makers of an international or regional organization. When, in 1948, the British notified the United States of their intention to withdraw economic support from Greece and Turkey, American foreign policy makers confronted a serious threat to their objectives in that area, namely, the preservation of national states independent of control by the Soviet Union (Jones, 1955). After North Korea invaded South Korea, the United States (and the United Nations) faced a threat to peace and to the integrity of their commitments to defend small countries on the perimeter of the Soviet Union.

A third characteristic of decision situations that we emphasize is the *time* available for responding. For example, American decision makers had approximately one week in which to decide whether to commit American troops to the defense of South Korea in the summer of 1950. On the other hand, three years earlier, in 1947, the American government spent approximately fifteen weeks in developing the Truman Doctrine to replace British support of Greece and Turkey.

In our research, we arbitrarily define crisis according to these three dimensions, or characteristics, of an occasion of decision. The most crisis-loaded situation is an unanticipated, major threat to objectives that compels decisino makers to respond almost immediately. The least crisislike, most routine situation is one that decision makers anticipate, that con-

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tains little threat to any important goal, and that allows an extended period for response.

Three Studies Involving Political Gaming or Simulation[3]

This conception of crisis was developed for investigating hypotheses about decision making in which crisis was an independent variable. The hypotheses reported in this chapter involve relations between crisis, on the one hand, and search for information and alternatives, on the other. The data used for testing these hypotheses are drawn from three studies involving political gaming or simulation. The first, carried out at Great Lakes Naval Training Center in 1963, was directed by the authors. The political simulation used in this research was a modification of Inter-Nation Simulation. The second, conducted at the San Diego Naval Training Center in 1964, was directed by John R. Raser and Wayman J. Crow of the Western Behavioral Sciences Institute (WBSI). Again, Inter-Nation Simulation was used. The third, undertaken by the Center for International Studies at the Massachusetts Institute of Technology (MIT) in 1964, was directed by Lincoln P. Bloomfield and Barton Whaley. This study used a political-diplomatic game, or exercise.

[3]In this chapter we distinguish between political games and simulations. Both involve attempts to model or represent some aspects of political "reality," and each has potentially valuable uses. Our distinction depends on the existence of programmed relationships among some or all of the variables in the model of reality. A political game does not include programmed features; a simulation does. A political game always involves human players, but can be played on a computer. A more detailed comparison of the particular simulation and political game used in this analysis appears at the end of this section.

In designing the research at Great Lakes, we developed a "Post-Simulation Questionnaire" with which to gather data from participants. Through the cooperation of colleagues at WBSI and MIT, the same questionnaire was administered to participants in their studies. These three sets of data are used to test the same hypotheses. When results are similar among the three studies, we attach more confidence to the findings than we would if they differed radically or if they were based on only one of the studies. As the subsequent description of the research will indicate, the Great Lakes and WBSI simulations and the MIT game differ sufficiently that we are disinclined to attribute complementary findings to the similarities among the three political exercises.

The Great Lakes Study

To create crises (and complementary noncrises) and to study them as variables that affect decisions, we used Inter-Nation Simulation, a "man–computer" representation of factors and processes assumed to be critical in international relations (see Guetzkow, Alger, Brody, Noel, and Snyder, 1963). Inter-Nation Simulation emphasizes relations *between* and *among* units that correspond to nations. The units are complex enough, however, to be observed also for their intraunit or intraorganizational decision making. At Great Lakes Naval Training Center, we studied crises *within* national offices.

The circumstances of the research can be summarized briefly. We conducted eleven one-day simulations during the autumn of 1963. On each day, thirty different Navy petty officers acted as officials of six nations. Each nation had five positions: Central Decision Maker (head of government),

Internal Decision Maker (deput chief of government), External Decisio Maker (foreign secretary), Forc Decision Maker (defense minister) and Aspiring Decision Maker (leade of the opposition).

Before the simulations were held participating officers were given infor mation about the Inter-Nation Simula tion that included the "rules of th game," descriptions of the respon sibilities of each office, and example of the simulation forms and documents When participants first reported fo duty, we gave them 2½ hours' instruc tion and put them through an hour' practice. Then they began the firs of six official one-hour decision period during which they allocated basi resources, decided on investments o loans, engaged in conferences withi their nation and with other nations dispatched a delegate to an interna tional organization, considered mem bership in a world bank, drafted mili tary attack and response plans, an sent and received messages.

One of the most important experi mental features was the method o introducing crises for the nations. W were not confident that the nation would create for themselves a suffi cient number of crises, as we define them, for statistical analysis. Therefore it seemed necessary in each decisio period to generate crises or to lay th ground for the quasi-natural develop ment of crises in a later period. Thes prearranged interventions, planned written, and timed in advance, wer executed by the Simulation Staff an by confederate nations. They create occasions of decision by threatenin goals or objectives of the experimenta nations. Some threats were sprung with out warning; others were hinted at o promised some time before actua invocation and could thus be regarde

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Before the simulations were held, participating officers were given information about the Inter-Nation Simulation that included the "rules of the game," descriptions of the responsibilities of each office, and examples of the simulation forms and documents. When participants first reported for duty, we gave them $2\frac{1}{2}$ hours' instruction and put them through an hour's practice. Then they began the first of six official one-hour decision periods during which they allocated basic resources, decided on investments or loans, engaged in conferences within their nation and with other nations, dispatched a delegate to an international organization, considered membership in a world bank, drafted military attack and response plans, and sent and received messages.

One of the most important experimental features was the method of introducing crises for the nations. We were not confident that the nations would create for themselves a sufficient number of crises, as we defined them, for statistical analysis. Therefore, it seemed necessary in each decision period to generate crises or to lay the ground for the quasi-natural development of crises in a later period. These prearranged interventions, planned, written, and timed in advance, were executed by the Simulation Staff and by confederate nations. They created occasions of decision by threatening goals or objectives of the experimental nations. Some threats were sprung without warning; others were hinted at or promised some time before actual invocation and could thus be regarded as anticipated threats rather than unanticipated threats. Some demanded response within fifteen minutes; others allowed as long as an hour for decision.

The WBSI Study

Inter-Nation Simulation was used also in the WBSI study, which included twelve separate runs. Each run had five nations with four decision makers each to fill the roles of Central Decision Maker, External Decision Maker, Force Decision Maker, and Aspiring Decision Maker. The participants, recruits who had just completed basic training at the San Diego Naval Training Center, participated for $4\frac{1}{2}$ days, with 2 days devoted to learning and practicing the simulation and a half day to debriefing. The two days of experimental time were divided into twelve decision periods.

Unlike the Great Lakes study, the WBSI research did not concern crisis per se. It was undertaken to test hypotheses about some consequences of a nation's possessing "the capacity for delayed response" to a nuclear attack from another nation (see Raser and Crow, 1964). In the Great Lakes study, "contrived" situations of crisis and noncrisis were introduced at times determined in advance by the researchers. In the WBSI study, no such experimental interventions were made. Therefore, to the extent that crises developed, they did so "naturally."

The MIT Study

The MIT research used a political-diplomatic game (see Bloomfield and Whaley, 1965). Four or five teams are usually involved in the game, of which two represent the United States and Soviet Union. Other teams may depict individual nations or constellations of nations (e.g., Western Europe).

The number of players varies from team to team. The U. S. and Soviet teams normally contain five to seven members and play roles that coincide with roles of actual officials in high-level foreign-policy organizations in the American and Soviet governments. Other teams may be smaller. The total number of participants in a game is usually fifteen to twenty.

The data used in this chapter were obtained from two games played in 1964. In both, players were drawn from military, political, and research institutions closely associated with contemporary American defense policy making. These expert players received a booklet of materials several days in advance of the game. A single briefing prepared them to execute the procedures of the exercise. The games were played during a two-day period, with each move lasting about two hours.

The MIT study investigated "crisis management." Potential crises involving the United States were imagined, scenarios launched the event, and players responded with policy moves.

Some Ways in which the Inter-Nation Simulation and the Political-Diplomatic Game Differ

The MIT political-diplomatic game (MIT game) differs from Inter-Nation Simulation (INS) in several respects and thus provides a contrasting arena in which to test crisis hypotheses. First, INS nations and roles are abstractions and bear fictitious titles that correspond only conceptually to "real world" nations or roles. In the MIT game, nations and positions resemble more closely actual nations and roles in contemporary international politics.

Second, both INS studies begin with very brief descriptions of the state of the simulated world and allow the participants to interpret that world and make it their own. The MIT game opens with a detailed scenario of a realistic crisis (e.g., one involving the United States' sea-based deterrent weapons system).

Third, INS decisions are usually made in quantitative terms, and the results are calculated according to a set of arithmetic rules largely unknown to the participants and beyond the control of the Simulation Directors once the exercise begins. Decisions in the MIT game, on the other hand, are not calculated according to such formulas but rather are judged for appropriateness by the Control team, which consists of several knowledgable experts on the subject of the crisis. Control may also drastically change the time of the game being played and rewrite the scenario between periods or moves.

Fourth, INS research at Great Lakes and WBSI used participants who were not substantive specialists nor members of political elites. The MIT game is often played by relatively high-level policy makers from Washington and by specialists in research institutions.

Fifth, it is customary to distinguish the realism, qualitative character, and "unprogrammed rules" of the MIT game from the abstractions, quantitative symbols, and formal programs of INS. Games are usually manual exercises, while simulations are subject to computer manipulation. INS, although potentially a partial-computer activity, was manually calculated in the Great Lakes and WBSI runs.

Decision Situation and Search

We were interested in crisis as a decision situation because we had reason to believe that decision-making units respond differently to different kinds of situations. Although our theories of political decision making

were not so refined that we knew pre cisely what differences to expec between international crisis and non crisis, studies of individual decision and other sources suggested some differ ences, especially with respect to searcl activities like the gathering of informa tion and the construction of alterna tives.

Some normative theories of decisio making assume a linear relation be tween the amount of information an the number of alternatives available on the one hand, and the quality of th prescribed decision, on the other Similarly, much of the normativ concern about crises and much of th effort to find ways of avoiding then have been predicated on the assump tion that, in crises, search is forestalle and that, as a result, the rationalit of choices is limited. In contrast to suc theorizing, some experiments hav shown that moderate stress produce creative decision making, includin search, and induces more search an innovation than either absence o stress or presence of intense stres (e.g., Hare, 1962, p. 265). Like Berelson (1952) and Downs (1957), however we do not necessarily assume that th more information or alternatives ob tained, the better the decision will be.

The acts of searching for informatio and alternatives are aspects of th intelligence stage of any decision proces (Lasswell, 1956). Even if judgment o the relative merits of outcomes base on differing amounts of search i reserved, the potential of the searc variable to produce different kinds o policy outcomes makes it an importan element in the analysis of decisio making. Not only may the amount o search for information and alternative affect policy, but crises, as compare with noncrises, may affect the degre of search. Thus, we have a chain o hypotheses in which crisis produce

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Decision Situation and Search

We were interested in crisis as a decision situation because we had reason to believe that decision-making units respond differently to different kinds of situations. Although our theories of political decision making were not so refined that we knew precisely what differences to expect between international crisis and noncrisis, studies of individual decisions and other sources suggested some differences, especially with respect to search activities like the gathering of information and the construction of alternatives.

Some normative theories of decision making assume a linear relation between the amount of information and the number of alternatives available, on the one hand, and the quality of the prescribed decision, on the other. Similarly, much of the normative concern about crises and much of the effort to find ways of avoiding them have been predicated on the assumption that, in crises, search is forestalled and that, as a result, the rationality of choices is limited. In contrast to such theorizing, some experiments have shown that moderate stress produces creative decision making, including search, and induces more search and innovation than either absence of stress or presence of intense stress (e.g., Hare, 1962, p. 265). Like Berelson (1952) and Downs (1957), however, we do not necessarily assume that the more information or alternatives obtained, the better the decision will be.

The acts of searching for information and alternatives are aspects of the intelligence stage of any decision process (Lasswell, 1956). Even if judgment of the relative merits of outcomes based on differing amounts of search is reserved, the potential of the search variable to produce different kinds of policy outcomes makes it an important element in the analysis of decision making. Not only may the amount of search for information and alternatives affect policy, but crises, as compared with noncrises, may affect the degree of search. Thus, we have a chain of hypotheses in which crisis produces changes in amount of search, which in turn alters the nature of the policy outcome. The hypotheses explored in this chapter concern the first part of the sequence, the relationship between crisis and search.

Data on the hypotheses about search were gathered through a questionnaire administered to the participants at the termination of the trials or runs in the three studies. Each participant was asked to select two problem situations that involved him and originated outside his nation. For his first problem situation, the participant was instructed to choose one that he thought had the following characteristics: (1) It came as a surprise to his nation, (2) threatened a major goal or goals of his nation, and (3) imposed severe time pressures for response. These characteristics correspond to the three dimensions of our concept of crisis. After the participant selected a problem situation with these features, he was asked a series of multiple-choice questions about the situation. For his second problem situation, the participant was asked to choose one that did *not* contain these same three characteristics. This situation represents a noncrisis occasion of decision. The same multiple-choice questions were asked about the second problem situation.[4]

In the following six hypotheses, two types of search are differentiated. One type is search for alternatives, i.e., the attempt to seek different possible solutions or methods of handling the situation confronting the nation's decision makers. The other kind of

[4]Because of pretests of earlier versions of the questionnaire, the maximum number of respondents for Great Lakes is 123; for WBSI, 216; for MIT, 28. The absence of a response to a particular question results in a somewhat smaller sample on individual items. The questionnaire used in this analysis is reproduced in Hermann (1965, pp. 302–314).

search involves obtaining information necessary for making a decision and choosing among alternatives. On the basis of our observations about crises, some of which will be reviewed in examining the individual hypotheses, we expected that participants would report less search for alternatives in crisis, but more search for information. The time pressures associated with crisis would place a premium on all kinds of search activity (March and Simon, 1958). The often relatively small units involved in crisis decisions (Hermann, 1963) and the tendency of individuals to exhibit rigidity under stress (Driver, 1962) would reduce the ability to identify alternatives. Thus, with the limited time available, information would be sought to reduce the high degree of uncertainty associated with the crisis. The reduction in search for alternatives, as well as other features of crises, was hypothesized to decrease the number of alternative solutions actually considered by the decision makers as possible means of handling the situation. To evaluate these hypotheses in the three studies, the questionnaire data applicable to each relationship were subjected to statistical analysis.[5]

Hypothesis 1: *In crisis as compared with noncrisis, less search for alternative courses of action will be made.*

The first hypothesis involves search concerned with identifying alternatives. Some studies (e.g., March, 1962, p. 197) report that large organizations, such as those responsible for foreign policy, examine alternative courses of action sequentially rather than simultaneously. Under these conditions, confirmation of this hypothesis would mean that, in crisis, decision makers settle for one of the first alternatives they examine rather than consider one alternative after another. They search for a new alternative after disadvantages have been detected in the one under evaluation. A curtailment of alternative search may indicate that, under crisis, the ability of decision makers to assess alternatives critically decreases. Therefore, the need to reject an initial alternative and to continue searching is reduced. On the other hand, under the threat of crisis, decision makers may believe that no alternative open to their nation would be attractive, and their aspiration for a "highly favorable" solution and their motivation to search for such an alternative may thereby be lowered. In other words, the "satisficing" mechanism (Simon, 1957, pp. 241–273) may enter the crisis decision process at an early point and may result in the decision makers' increased willingness to accept one of the first alternatives that occurs to them.

The findings on hypothesis 1 are presented in Table 1. As in subsequent presentations of the data, Table 1 is subdivided into three sections, one section each for the Great Lakes, the WBSI, and the MIT results. The Great Lakes and WBSI data show that more participants shifted from "much search in noncrisis" to "little search in

[5]A type of chi-square, the McNemar test (Siegel, 1956, pp. 63–67), was used to accept or reject most of the hypotheses discussed below. This nonparametric test is designed to measure change in nominal data for two related samples. (Does a respondent when asked identical questions about a crisis and a noncrisis change his answer from one to the other?) In the tables accompanying the hypotheses, the critical change data are in the lower left- and upper right-hand cells. When one-half the sum of these two cells is less than 5, a binomial test (Siegel, 1956, pp. 36–42) has been used. With either test, a result was accepted as statistically significant if the p value was equal to or less than .05.

T

Less Search for

		Great Lakes Crisis	
		Much Search	Lit Sea
Noncrisis	Much Search	8	2
	Little Search	13	7

$\chi^2 = 4.22$
$p < .05$

T

Fewer Alternati

		Great Lakes Crisis	
		Few Alter-natives	Ma Alt nati
Noncrisis	Few Alternatives	75	1
	Many Alternatives	28	

$\chi^2 = 5.62$
$p < .01$

T

More Search for

		Great Lakes Crisis	
		Much Search	Lit Sea
Noncrisis	Much Search	15	2
	Little Search	24	5

$\chi^2 = .02$
n.s.

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TABLE 1

Less Search for Alternatives in Crisis

		Great Lakes Crisis		WBSI Crisis		MIT Crisis	
		Much Search	Little Search	Much Search	Little Search	Much Search	Little Search
Noncrisis	Much Search	8	27	19	60	3	5
	Little Search	13	72	25	110	5	14
		$\chi^2 = 4.22$, $p < .05$		$\chi^2 = 13.60$, $p < .01$		$\chi^2 = .10$, Nonsignificant (n.s.)	

TABLE 2

Fewer Alternatives Perceived in Crisis

		Great Lakes Crisis		WBSI Crisis		MIT Crisis	
		Few Alternatives	Many Alternatives	Few Alternatives	Many Alternatives	Few Alternatives	Many Alternatives
Noncrisis	Few Alternatives	75	12	104	28	12	6
	Many Alternatives	28	6	58	22	4	5
		$\chi^2 = 5.62$, $p < .01$		$\chi^2 = 9.77$, $p < .01$		$\chi^2 = .10$, n.s.	

TABLE 3

More Search for Information in Crisis

		Great Lakes Crisis		WBSI Crisis		MIT Crisis	
		Much Search	Little Search	Much Search	Little Search	Much Search	Little Search
Noncrisis	Much Search	15	26	36	44	3	5
	Little Search	24	57	55	79	2	17
		$\chi^2 = .02$, n.s.		$\chi^2 = .81$, n.s.		Binomial Test, n.s.	

crisis" (upper right-hand cell of each section) than shifted in the opposite direction (lower left-hand cells). Both the Great Lakes and the WBSI shifts are large enough to be statistically significant and, thus, to support the hypothesis. By contrast, the hypothesis is not confirmed by the MIT data, in which an equal number of people reported less and more alternative search in crisis. Two of the three sets of questionnaire data, then, supported the hypothesis.

Hypothesis 2: *In crisis as compared with noncrisis, fewer alternatives will be identified by the national decision makers.*

One might reason that, if search for alternatives is reduced in crisis (hypothesis 1), then fewer alternatives will be introduced in the crisis decision process. It is conceivable, however, that a substantial number of alternatives might be identified by the decisional unit without its conducting any formal search activity. The absence of alternative search may make the consideration of a large number of alternative courses of action unlikely, but clearly hypotheses 1 and 2 are not identical. Hypothesis 2 was advanced by Snyder and Paige (1958, p. 362) on the basis of their examination of the American decision to resist the invasion of South Korea in 1950. Furthermore, Holsti (1965, p. 374) found the decision makers in each alliance perceived the number of alternatives open to their coalition was significantly reduced in the crisis preceding the outbreak of World War I.

The results from the three studies, displayed in Table 2, repeat the pattern found for the previous hypothesis. In the simulations at Great Lakes and WBSI, the participants' shift from many alternatives in noncrisis to few alternatives in crisis is significantly greater than that in the opposite direction. The hypothesis is supported. In the MIT political game, however, the hypothesis is not confirmed.

Hypothesis 3: *In crisis as compared with noncrisis, search for information is more likely.*

We now turn to our other classification of search—that concerned with obtaining more information. We had reasoned that, given the limited response time allowed by crisis, the decision makers would make a substantial effort to search for information. This hypothesis was suggested by such research as Mack and Baker's (1961) study of unanticipated air-raid warnings and Wohlstetter's (1962) examination of the attack on Pearl Harbor. In both these crisislike illustrations, individuals devoted considerable time and energy to searching for information with which to confirm the nature of the situation they were experiencing. The surprise element incorporated in the crisis tended to generate disbelief and uncertainty, which in turn emphasized the need to gather more information before making a decision.

Contrary to our expectation, the hypothesis was not confirmed. As Table 3 shows, none of the questionnaire data supported the hypothesis.

To explain this unexpected result, we found it necessary to reexamine some of our assumptions about kinds of search and impact of crisis upon them. First, we had assumed that immediacy, by definition a part of any crisis, would place a premium on the total amount of search that could be undertaken by the decision makers. In other words, a feature of crisis would be a change in the normal search activities involved in the decision process. In Tables 1 and 3, however, the largest number of respondents in each of the three studies report little

TA

Less Information Search

		Great Lakes Crisis	
		Well-Defined	Pressu
Noncrisis	Well-Defined	11	26
	Pressures	2	18

$\chi^2 = 18.88$
$p < .01$

TA

More Search for Informa

		Great Lakes Information Sea	
		Much Search	Litt Sear
Alternative Search	Much Search	9	12
	Little Search	29	71

$\chi^2 = 6.24$
$p < .01$

TA

Less Decision

		Great Lakes Crisis	
		Much Confidence	Litt Confid
Noncrisis	Much Confidence	34	48
	Little Confidence	16	22

$\chi^2 = 15.01$
$p < .01$

hypothesis is supported. In the MIT political game, however, the hypothesis is not confirmed.

Hypothesis 3: *In crisis as compared with noncrisis, search for information is more likely.*

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TABLE 4

Less Information Search in Crisis Because of Pressures

		Great Lakes Crisis		WBSI Crisis		MIT Crisis	
		Well-Defined	Pressures	Well-Defined	Pressures	Well-Defined	Pressures
Noncrisis	Well-Defined	11	26	29	29	8	5
	Pressures	2	18	13	8	0	4
		$\chi^2 = 18.88$ $p < .01$		$\chi^2 = 5.36$ $p < .05$		Binomial Test $p < .05$	

TABLE 5

More Search for Information than Alternatives in Crisis

		Great Lakes Information Search		WBSI Information Search		MIT Information Search	
		Much Search	Little Search	Much Search	Little Search	Much Search	Little Search
Alternative Search	Much Search	9	12	24	20	2	6
	Little Search	29	71	66	104	2	16
		$\chi^2 = 6.24$ $p < .01$		$\chi^2 = 23.55$ $p < .01$		Binomial Test n.s.	

TABLE 6

Less Decision Confidence in Crisis

		Great Lakes Crisis		WBSI Crisis		MIT Crisis	
		Much Confidence	Little Confidence	Much Confidence	Little Confidence	Much Confidence	Little Confidence
Noncrisis	Much Confidence	34	48	51	96	12	12
	Little Confidence	16	22	26	42	1	1
		$\chi^2 = 15.01$ $p < .01$		$\chi^2 = 39.02$ $p < .01$		$\chi^2 = 7.69$ $p < .01$	

search in both noncrisis and crisis. The question can be raised: Did the conditions for failing to undertake search differ from noncrisis to crisis, particularly with regard to information search, or was our assumption wrong about the implications of crisis? Fortunately, from other data collected in the questionnaire, we were able to examine this issue. The following hypothesis was investigated.

Hypothesis 4: *If less search for information is made in crisis than in noncrisis, search is likely to be limited by pressures rather than made unnecessary because the situation is already well defined.*

This hypothesis was explored by means of a subanalysis of all the participants who reported little search for information in both crisis and noncrisis. (The individuals represented in the lower right-hand cell of each section of Table 3.) The reasons these persons gave for conducting little information search in noncrisis were compared with their reasons for little information search in crisis. Table 4 presents the results. In all three research enterprises, a definite shift occurred in the explanations advanced for failure to search. A statistically significant number changed from reporting sufficient information in noncrisis (the situation so well-defined that search was not required) to pressures preventing search in crisis. Although information search did not increase in crisis as compared with noncrisis, changed conditions for conducting information search were indicated in the participants' responses.

Even though the reasons for neglecting information search in crisis as opposed to noncrisis were consistent with our initial assumption, the differing effect of crisis upon information and alternative search did not appear as predicted. Alternative search declined in crisis, but information search did not increase. The pressure under which crisis decisions were made prevented much search activity. Given the limited effort devoted to search, might relatively more attention be devoted to information than alternative search? Our initial position led us to postulate the following hypothesis.

Hypothesis 5: *In a crisis, to the extent that search behavior occurs (defined as the sum of both search for information and search for alternative courses of action), the frequency of search for information will be greater than the frequency of search for alternatives.*

The data in Table 5 repeat a pattern we have seen before. In the Great Lakes and WBSI simulations, the hypothesis is supported by the statistics. A number of participants show differences in crisis between information and alternative search. Significantly more of the Great Lakes and WBSI participants report little search for alternatives and much search for information than the reverse. Among the MIT players, however, the number indicating the reverse of the behavior predicted by the hypothesis is slightly larger than the number supporting it. Again, the hypothesis is confirmed in two of the three studies.

At the beginning of this section, we stated that the hypotheses would be confined to the relationship between crisis and search, although we speculated that differences in search would affect policy outcomes. A final hypothesis drawn from the questionnaire data will provide the basis for one kind of speculation about the connection between search and outcomes.

Hypothesis 6: *In crisis as compared with noncrisis, the decision-makers' confidence in the ability of their decision to protect the affected goal is decreased.*

As indicated by the p values in Tabl 6, the hypothesis is statistically sup ported in the three studies in which th questionnaire was administered. Th participants' confidence is lower i crisis that noncrisis.

This hypothesis does not directly in volve search, but it may have implica tions for the variable we have bee examining. We have seen that, althoug the relative amount of informatio search compared with alternative searc increased in crisis, the pressures of th situation restricted both kinds of search The limited amount of informatio and the reduced number of alternative might be expected to reduce confidenc in any decision that is made. Thi proposition illustrates the ways i which amount of information and alter native search could affect confidenc in a policy regardless of its content Other hypotheses may indicate how th substantive content of outcomes varie with the amount and type of searc undertaken by the decision unit.

Finally, it can be noted that th attitude toward an outcome suggeste by hypothesis 6 may influence search After a decision has been made an a policy established, another type o search might be expected if decisio confidence is low. Such search woul attempt to seek approval and confirma tion of the decision taken in order t reduce uncertainty and increas confidence.

All but one of the six hypothese was confirmed in the questionnair responses of the participants in th Great Lakes and WBSI simulations Data from the MIT political game cor responded to those of the other tw studies for three of the hypotheses Ignoring for a moment the divergenc of the MIT findings on the other thre hypotheses, we can advance a rathe

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This hypothesis does not directly involve search, but it may have implications for the variable we have been examining. We have seen that, although the relative amount of information search compared with alternative search increased in crisis, the pressures of the situation restricted both kinds of search. The limited amount of information and the reduced number of alternatives might be expected to reduce confidence in any decision that is made. This proposition illustrates the ways in which amount of information and alternative search could affect confidence in a policy regardless of its content. Other hypotheses may indicate how the substantive content of outcomes varies with the amount and type of search undertaken by the decision unit.

Finally, it can be noted that the attitude toward an outcome suggested by hypothesis 6 may influence search. After a decision has been made and a policy established, another type of search might be expected if decision confidence is low. Such search would attempt to seek approval and confirmation of the decision taken in order to reduce uncertainty and increase confidence.

All but one of the six hypotheses was confirmed in the questionnaire responses of the participants in the Great Lakes and WBSI simulations. Data from the MIT political game corresponded to those of the other two studies for three of the hypotheses. Ignoring for a moment the divergence of the MIT findings on the other three hypotheses, we can advance a rather coherent summary. Under crisis, both the search for alternative courses of action and the actual number of such alternatives considered by the political decision makers are reduced. There is some indication that search is restricted by the pressure of a crisis. Certainly pressure rather than a well-defined situation was the reason advanced for less information search in crisis. Although the absolute amount of information search does not expand in crisis, relatively more information search than alternative search occurs. The pattern of less alternative and information search in crisis may contribute to the finding that, in crisis, confidence in any policy decision is reduced.

Before we consider the implications of these findings for characterizing crisis as pathological or functional, attention must be directed to the three discrepancies between the MIT political game and the two simulations. Two types of explanation are available. The first is statistical; it argues that the differences should not be taken seriously, given the small number of individuals who completed the questionnaire in the MIT game. If the number of MIT respondents had approached the size of the Great Lakes and WBSI samples, the results might have been quite different. The other kind of explanation recognizes some difference between the simulations and the political game and their respective ability to reflect decision making in actual foreign-policy making organizations. Perhaps the use of participants in the MIT exercises who are experts in foreign policy in contrast to the enlisted Navy personnel used in the other studies accounts for the divergence. We have previously described other differences, any of which could be

important. All the explanations of this type raise the need for "validity studies" in which these same hypotheses are explored with data from "real" international political crisis.

Crisis as Pathological or Functional

Several writers distinguish among kinds of crisis. Neustadt (1960, p. 186) differentiates *destructive* and *productive* crises in presidential politics. Snyder (1962) similarly observes different effects of crisis in defense policies. Our analysis of participant-selected simulation and game crises also supports the existence of destructive and productive types; or, alternatively, the analysis indicates that a crisis may be characterized by elements of both. A crisis may be an occasion for organizational malfunctioning but may at the same time contribute positively to the process and outcome of decision making.

The three studies certainly contain evidence for interpreting crisis as a form of pathological behavior. For example, the failure to search for alternative means of handling a crisis (hypothesis 1) may contribute to a situation in which only one or two alternatives are considered. As a consequence, an increased tendency to lower aspirations for the best possible response may occur at precisely the time when a decision of exceptional quality would be valuable for avoiding a grave and unusual threat.

Not only do decision makers report that they search for alternatives less in crisis, but they also perceive fewer alternatives available in such situations (hypothesis 2). Without adopting the position, "the more alternatives, the better," one is likely to regret choosing among a severely restricted range of choices when the consequences of action are important.

Some of the results, however, permit a more positive view of crisis than the pathological one. Social scientists now recognize positive as well as negative consequences of conflict (Coser, 1956; North, Koch, and Zinnes, 1960), a topic closely related to crisis. Perhaps the same perspective may be applied to crises. Without depreciating the uncertainties attached to decisions taken in response to basic threats in short response time and without warning, we think it worth acknowledging some more or less *rational* characteristics of decision activity observed in the simulated crises.

Evidence of rational behavior includes the propositions that search for information was not more likely in crisis than in noncrisis (hypothesis 3) and thus would not necessarily inhibit action; and that, when search was restricted, decision makers attributed nonsearch to pressures for action and did not delude themselves that the situation was clearly defined when in fact it was not (hypothesis 4). Moreover, the search in crises was more for information than for alternatives (hypothesis 5). Given a complicated response strategy, as in deterrence, such search seems quite appropriate; programmed alternatives may be available, but selection among them requires prior information about their relative appropriateness.

On the other hand, hypothesis 5 also has potential *negative* consequences. In some kinds of crisis, the greater search for information rather than for alternatives may be unfortunate. Like all occasions of decision, crisis situations involve uncertainty; information about vital factors is either unavailable or too costly to obtain. Excessive emphasis on search for information will not

necessarily improve the factual base of one's decision. Especially if the situation is one for which no programmed or prepackaged alternative response have been prepared, failure to move from information search to alternative search may be disadvantageous.

That decision makers' confidence in their alternatives decreases in crises (hypothesis 6) may also have either negative or positive effects. If loss of confidence is associated with defensiveness, decision makers under crisis may be less open to sharing the basis of their decision with others. Hence, acquisition of further support may suffer. Moreover, rigidity conceivably could cause a decision unit to ignore *feedback* about the consequences of a decision and to create additional organizational difficulties, especially if the feedback were negative.

On the other hand, lack of confidence, if not associated with defensiveness and rigidity, may have the positive effect of motivating a unit to search for support by communicating more widely with allies and alliances. In addition, it may alert one to monitoring and appraising the execution of a decision and to keeping the decision up to date by altering it or terminating it to accommodate new developments.

These tentative suggestions about the relation of crisis to search constitute only illustrations of the implications of crisis for foreign-policy making. Both the further testing of formulations such as these and the wider exploration of crisis as a recurring phenomenon of global politics deserve to be included on the research agenda of applied social and political sciences.

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CHARLES A. McCLELLAND

The Acute International Crisis

A statement of the rationale for national crises and a discussion of hy that crisis behavior is a function of nation-state.

A judgment made by Karl Deutsch in 1957 has proved to be correct "There are some indications that at th present time the problem of interstat conflicts is ripe for a concerted researc attack, combining the methods o several of the social sciences. The aim of this research would be to develop techniques to do three things: to iden tify generally those conflict situation and states which are likely to lead t war; to evaluate particular conflic situations and the probable lines alon which they are likely to develop i left to themselves; and to sugges further possible techniques for control ling or containing such conflict situa

An excerpt from an article by the same nam in *World Politics*, 1961, 14, 182–204. Reprinte by permission of the author and the Center o International Studies at Princeton University publisher of that journal. The author is Professo of International Relations at the University o Southern California.