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EXDET I

A Student-Level Experimental Simulation

on

Problems of Deterrence

CENTER FOR INTERNATIONAL STUDIES
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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PREFACE

The current series of political-military exercises being conducted by the Center for International Studies, M.I.T., focuses on the deterrent effect of certain Naval strategic systems within the broader context of crisis decision-making at the national level. This research is supported by Project Michelson--Dr. Thomas Milburn, Director--of the US Naval Ordnance Test Station, China Lake, California.

In the course of conducting a number of policy-type simulations of this nature with senior professionals from government and academic life as participants, a number of questions have inevitably occurred to us concerning the technique employed, its relation to reality, and ways of improving our general understanding of this relatively new form of social science methodology.

As a consequence, we have devoted a modest portion of our current gaming research to a series of small-group experiments using M.I.T. students as subjects. The purpose is both to pre-test innovations in the technique before employing them in the senior exercises, and to inquire into the questions of method that we believe have value of their own. We incidentally have hoped for any additional insights these games might yield regarding the central substantive focus of the research--strategic deterrence.

The first of the experimental student-level exercises was conducted in offices of the Center for International Studies on November 16, 1963, and is reported herein. Working under the same direct supervision and guidance of Mr. Barton Whaley, my associate in this project, Mr. Leslie Roos was the principal designer and director of this exercise, and prepared the initial drafts of this report.

Lincoln P. Bloomfield
Director, Arms Control Project

I. SUMMARY AND FINDINGS

The first experimental political-military game, titled EXDET I, in the Center's Project Michelson series was held on 16 November 1963. The so-called EXDET (for "experiments in deterrence") series were characterized by use of graduate and undergraduates as participants.

Objective.

While the general purpose of the EXDET series was an effort at furthering existing knowledge of the deterrent value of several specific naval weapons systems, the experimental games, of which this was the first, were particularly focussed on increasing the reproducibility and methodological rigor associated with this particular crisis simulation technique. Furthermore, this game was intended as a pre-test of the political-military crisis problem to be presented in the subsequent DETEX I game, the first in a series of crisis decision-making exercises employing academic and Government experts as participants.

Innovations in Technique

Several departures were made from the methods previously followed by the Center for its senior professional political-military exercise.[1] First of all, to increase the number of participant teams and therefore confidence in the reproducibility of the results, multiple (5) U.S. teams were used in the game, each playing simultaneously, instead of the usual single U.S. team.

The second innovation was an attempt to have the Control Group provide

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[1]For a convenient summary of this technique as it stood at the beginning of the current DETEX-EXDET series, see Lincoln P. Bloomfield and Barton Whaley, The Political-Military Exercise: A Progress Report. (Cambridge, Mass.: Center for International Studies, M.I.T., 16 August 1963, 35 pp; multilithed).

all its response to team moves during the same part of the move period, rather than as in previous games alternate with the teams (i.e., Control inputs following team moves at times when teams were in "time out").

The third innovation was the introduction of a "research and development" move period at the outset of the game. This innovation was aimed at forcing the participant teams to choose between the development of various candidate weapon systems on the basis of their estimates of weaponry needed to meet a hypothetical Southeast Asian crisis several years in the future. Following these initial decisions, the game clock was advanced to the future point in time, and the participants instructed to play out the crisis specified in the "Scenario." Thus each separate U.S. team was forced to live with the course of weapons systems development it had elected earlier.

A fourth innovation was to have participants fill in a number of questionnaire items of several types during the course of the game. The types of questions asked and the results obtained are dealt with in Annex D.

R & D Phase

At the beginning of the R & D phase the teams were presented with three documents and required to make a procurement decision on the basis of the information, options and problems contained in them. The first document was a projection of presently planned U.S. arms expansion to 1968.[2] The second document was an evaluation by the simulated leading government scientific and technological advisers of those options which still existed in 1963 for the procurement of new weapons systems in 1968.[3] The third document was a strategic intelligence estimate of the general political and military state of the

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[2] See Annex A.

[3] See Annex B.

world for the same future time centering around a hypothetical intense crisis in Southeast Asia.[4] In a contingency planning phase the teams were to choose those of the available weapons systems options which best appeared to equip the U.S. to meet the type of likely threat specified in the intelligence estimate--in other words, to match the weapons options to the crisis.

Organization

Participants in the game were M.I.T. graduate and undergraduate students. The Control group consisted of six political science graduate students--one serving as Game Director, and five assisting him as members of Control.

Because of the use of multiple teams, it was necessary to have a Control group more comparable in size to that in professional games than in student games where two usually suffice. In addition, two clerk-typists were available to Control. Control's labors were divided in the sense that one member was responsible for the message center, one for handling the questionnaire data, one for answering questions from the teams, and the other two for assisting the Game Director in the drafting of specific game messages. Policy decisions were generally made by the Game Director after consultation with the other Control members. Two additional graduate students served as one-man sub-teams to provide game inputs--under the general direction of Control--for, respectively the Soviet Union and Communist China. These two sub-teams were semi-controlled in that they were used by Control to heat up the crisis in order that the U.S. teams would consider actively utilizing strategic U.S. systems for deterrence and defense.

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[4] See Annex C for summary of the Scenario.

The undergraduates--10 students in an international relations course--were assigned in pairs to each of the five United States teams. One member of each of these teams was designated to simulate the U.S. President, the other the Secretary of State. Each U.S. team was instructed to play independently of the other teams, their interaction to be confined to written messages to the China sub-team, the Soviet sub-team, or to Control in its special capacity of simulating the rest of the international community.

The game proceeded through two phases, a research and development (R & D) phase in one move, and a crisis gaming phase in three moves. Each move period lasted approximately $1\frac{1}{2}$ hours.

Scenario

The participants were initially placed in the framework of real time, i.e., late 1963, and were asked to carry out their R & D phase on the basis of a hypothetical situation that might arise in 1968.

This hypothetical situation revolved around a Southeast Asia crisis in 1968 in which a revitalized South Vietnamese government became involved in offensive activities against the North Vietnamese regime. The rest of Southeast Asia presented an even more unstable picture than at the present time (1963-64). The situation of the Pathet Lao Communists in Laos had improved over time. Communist infiltration into northern Thailand had increased. Soon after the start of conflict between North Vietnam (DRVN) and South Vietnam (RVN), the Chinese Communists were stipulated to have intervened, pushing back the RVN troops. After the teams had completed the R & D phase the game clock

was set ahead two years to 1968. The teams were then told that the crisis had indeed broken out as predicted in the hypothetical intelligence estimate. Each team was provided with additional bulletins, and the crisis gaming began.

Crisis Phase

The crisis phase was conducted by giving each of the teams the weapons system option it had chosen in the procurement phase and then requiring the teams to live with the consequences of their decisions by presenting them with the very crisis with which the chosen weapons systems had been designed to best cope.

The teams went through three move periods simulating eight days of crisis. Throughout Move Period A and well into Move Period B all the teams were pursuing rather similar strategies. All teams had committed themselves to the defense of the integrity of South Vietnam's territory, and Teams A, B, and C had unqualifiedly decided to effect this defense by use of U.S. conventional strength in Southeast Asia. They were prepared to face the consequences of another "Korea" rather than rely on nuclear deterrence. Team D was wavering between use of conventional and nuclear force. Team E was still undecided but favoring use of nuclears.

Up to this point, Control was still able to send virtually identical messages to all five teams because of the general similarities of their specific actions.

However, by the end of Move Period B it was evident that the teams had become fully committed to the divergent strategies outlined above, the first four confining their strategies and consequent actions and responses to conventional weapons and the last team adopting a strategy of nuclear deterrence vis-à-vis Communist China.

Due to these divergent strategies, it became necessary to change the types of inputs received by the two classes of U.S. teams. The first four teams were informed that the Communist advance had been drastically slowed by the introduction of U.S. forces, but the team relying on strategic deterrence saw their South Vietnamese allies badly repulsed. In a further effort to bring strategic weapons systems into play, it was reported to all the U.S. teams at the same time that the Soviets were blocking the Autobahn routes to West Berlin, and that the Chinese Communists were preparing to take action against Quemoy and Matsu. Even in the face of these provocations no significant changes occurred in strategic deployment by the U.S. teams. Only when an invasion of Quemoy and Matsu eventually took place did one of the four conventional-minded teams use its strategic weapons against China. Others resorted to such political and military moves as air bombardment of the Chinese coast with high explosive bombs and a very tough stand on Berlin.

Questionnaire

A questionnaire was given to the participants before the game, at the end of each move period, and following the game. The questionnaire was intended to elicit data from which we could assess some of the preconceptions which individuals brought to the game situation regarding expectations of national success (or failure) responses to the antagonists' initiatives, and perceptions of the antagonists' attitudes toward them.

Somewhat surprisingly, very little change in perceptions of success and failure occurred. For example, in response to the question, "What do you

think the general outcome of the crisis will be (was)in terms of United States political objectives ?" the distribution of responses was as follows, with a "1" indicating very successful and a "7" indicating very unsuccessful:

Response	Pregame	Postgame
1	3	2
2	4	5
3	2	2
4	1	-
5	-	1
6	-	-
7	-	-

A number of questions were asked in an effort to measure the intensity of the crisis during each move period, noting several indicators of intensity. All seem to exhibit what Paul Lazarsfeld has termed the "interchangeability of indicators": if one of these indicators is missing it can usually be replaced by the remaining ones, and the general level and direction of the underlying social process would still remain clear.

First of all, items relating to the type of political-military moves chosen by each team were listed in questionnaire form in an effort to see which types of political-military moves tended to be associated with others; the hope here was to construct a scale of escalation. The results from this questionnaire on escalation were generally disappointing in that there was comparatively little change over the successive move periods as to how high up on the escalation ladder the teams were willing to go. Because of the constancy of the data it was not possible to apply Guttman scaling techniques. As noted previously, early in the game the U.S. teams generally made a number of moves associated with the sending of conventional forces into Southeast Asia, at which point the game tended to stabilize. This was particularly

interesting in that the escalation ladder devised for this game was designed to be more sensitive than that presented in previous works by H. Kahn, G.H. Snyder, and others. The ladder that was employed used some twenty items that were expected to be relevant in crisis situations, in an effort to specify both crisis intensity and item interrelationship.[5]

One sample from the questionnaire might be presented here. Four questions relating to shows of force were asked. The questions were:

Would you as an American decision-maker:

1) Deploy conventional forces for possible military action?

2) Deploy strategic forces for possible military action?

3) Use naval vessels for a show of force?

4) Land ground forces in (specify the country) as a show of force to support your interests?

As a very rough measure, each response was given a score of 1. They were summed and an everage computed for this measure over the three move periods:

Move Period:	1	2	3
"Shows of Force Score":	3.60	3.80	3.40

The relative constancy of the scores is reflected here: comparatively little "escalation" occurred.

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[5]From the results of this questionnaire, an effort was made to increase the sensitivity of the instrument by slightly increasing the number of items, and using these items to focus upon the use of limits in the local war situation, and upon the presence and amount of mobilization in a crisis. It was then hoped that any expansion of the limits in a local war conflict could be picked up by the escalation instrument. The revised questionnaire was administered to participants in the DETEX I professional exercise and in the M.I.T. Air Science "Iran Crisis" student game; the results are reported in Annex D.

Another possible tool for gauging crisis intensity is provided by data on national images, as measured by items selected from Osgood's Semantic Differential. Our hypothesis as to the relative lack of escalation during this game was borne out by the findings on national images. Presumably there would have been changes in the perceptions of other "nations" if a great deal of escalation had occurred. Instead, perceptions of both Communist China and the Soviet Union remained quite constant for the U.S. team players.

United States Perceptions of Communist China

Move Period	1	2	3
Evaluative Dimension	2.90	2.70	2.80
Potency Dimension	6.40	6.40	6.40
Activity Dimension	6.60	6.50	6.10

United States Perceptions of the Soviet Union

Move Period	1	2	3
Evaluative Dimension	3.10	3.00	3.00
Potency Dimension	5.70	5.80	6.00
Activity Dimension	5.50	5.60	5.80

Several items were included in an effort to explore J.D. Singer's hypothesis that a nation's threat perception is a function of its perceptions of a potential enemy's capabilities and intentions. The intensity of a crisis may also be measured by this type of question. If the crisis were at a higher level, it would be expected that American decision-makers would perceive the Chinese and Soviet teams as more threatening than at a lower level. That this did not happen to any great extent during the game is supportive of the hypothesis that comparatively little escalation occurred.

The data for threat perception expressed on a 7 point scale from 1 to 7 (low to high threat) during the three move periods is presented below:

United States Perceptions of China and USSR

Move Period	1	2	3
Communist China	4.80	4.90	4.30
Soviet Union	4.80	5.30	5.80

The mean scores and the intercorrelations between capability perceptions, hostility perceptions, and threat perceptions were also run with reference to American perceptions of Communist China and of the Soviet Union. Mean scores with the data combined to include all three move periods, are presented below, on a 7 point scale from low to high.

United States Perceptions of China and USSR

	Capability	Hostility	Threat
Communist China	4.77	6.66	4.66
Soviet Union	6.40	5.10	5.30

Interesting differences were found between United States perceptions of Communist China and the Soviet Union with regard to correlations between percaptions of capability, hostility, and threat.[6] These correlations are presented below:

Correlations for United States Perceptions of Communist China

Capability-Hostility	0.15
Capability-Threat	0.44
Hostility-Threat	0.14

Correlations for United States Perceptions of the Soviet Union

Capability-Hostility	0.27
Capability-Threat	0.25
Hostility-Threat	0.44

[6] A slight downward correction for non-independent sampling might be incorporated here.

These tables imply that threat is more highly correlated with the "lower" member of the capability-hostility pair. In other words, if either capability or hostility is low, threat will tend to be low also. Under these circumstances, the effects of interaction between the variables might tend to be minimal.

Findings and Conclusions

Our findings can be divided into several classes. First, referring back to the stated purposes of this experiment, namely, to increase the reproducibility and methodological rigor of this particular crisis simulation technique and pretest the crisis problem for a replay with professional experts, it can be generally said that only moderate success was achieved. As spelled out below, the general types of innovations in technique and data collection were found promising although the specific techniques and questionnaire proved only barely adequate for their designed purposes. Furthermore, some suggestive insights were obtained regarding the nature of the scenario-problem to be presented the professional players in DETEX I on the basis on which certain modifications were made in the design of that subsequent exercise.

As to insights concerning naval strategic weapons systems, for what it is worth, in the research and development phase the participants demonstrated strong preferences for a hypothetical missile system (known as "LITTLE SLAM") involving 700 conventionally-powered cruise missiles able to fly so fast at such low altitude as to be almost uninterceptable. "LITTLE SLAM" could stay aloft for as much as a day; thus under conditions of high threat it could give the U.S. a special additional capacity for delayed response (CDR). (Other systems available for development choices were 100 "SLAM" missiles with similar

characteristics to "LITTLE SLAM" except that they were stipulated to be nuclear-powered and could stay up for a week--with the substantial CDR implied by that period; 1,000 additional Polaris missiles; or 1,000 naval medium-range ballistic missiles which could be mounted on almost any ship. (These systems would be in addition to a U.S. strategic arsenal that already included 41 Polaris submarines with 16 missiles each, and 1,000 Minutemen.)

A related finding bearing on the possible use of weapons in crises--though admittedly severely limited in meaning given the nature of the participants, was that the major event produced by the crisis phase was the unwillingness of the majority of United States teams to use their strategic systems or even brandish them as a threat, as opposed to the comparative alacrity with which they were willing to become involved in a Korean War-type situation in which a major portion of U.S. conventional arms was tied down in countering enemy conventional arms. Four of the U.S. teams used this type of defense in Southeast Asia while only one team resorted to strategic deterrence.

Our findings regarding the several innovations in gaming technique are as follows: 1) the introduction of multiple teams playing against a single Control Group did prove feasible in the sense that Control was able--although only barely in the subsequent portion of the game--to remain responsive to a variety of similar yet different strategies and actions of the separate teams. 2) The attempt to have Control respond immediately to the teams in order to save time in the game proved only barely feasible due to the intense pressure of time on Control to reach major decisions. 3) The use of a special "procurement" move proved entirely feasible and should be seriously considered in any future student experiments or professional exercises where the game problem may wish to permit one or more teams to select among a specified range or

array of options in force structure and then be forced to live with the consequences of their decision during the subsequent course of crisis play. 4) The use of questionnaires proved successful in the sense that participants did not seem unduly disturbed by the interjection of such instruments during play; however, as described in Annex D, the specific questions employed would require considerable modification to fully elicit the types of answers for which they were designed.

Finally, in terms of theory of threat perception, escalation, etc., the results of this particular experiment tend to validate each indicator of crisis intensity--behavioral and perceptual. Stability among move periods was demonstrated with reference to the three main indicator types: escalation, national image, and threat perception. Secondly, results relevant to understanding the components of threat perception were obtained. Thirdly, progress was made toward building a meaningful escalation ladder.

A final point not discussed previously in this paper is the potentiality for building a data bank from game results. The same questions, administered in a number of different games, can be used to produce findings stable across a number of possible crisis situations. The particular scenarios which lead to deviant results should also be readily identified. The tool of simulation could then be used with more confidence.

II. GAME HISTORY

A. RESULTS OF PROCUREMENT MOVE

Three of the five teams chose and received the "LITTLE SLAM" missiles. The reasons provided by the teams included:

1) precision accuracy (high CEP)

2) long range

3) flexibility of warhead selection

4) relative freedom from detection

5) large enough numbers for dispersion

6) adding or diverse systems would be valuable

One team, Team A, chose the MRBM's on the grounds of their ability to be more widely deployed than the small number of SLAM systems; Team E chose the improved POLARIS missiles due to their invulnerability resulting from the subsurface to surface nature of their launching.

B. FIRST MOVE PERIOD (S + 0 days to S + 3 days)

The crisis phase of the game began in the first move period when the decision-makers were told that game-time had been moved up to 1968. The weapons system which their particular team had chosen had been developed and was now in operation, along with prototypes of the other systems. To start the game, the teams were told that the anticipated events described in the Scenario for 1968 had actually occurred. They were to proceed with their first moves; additional information would be provided for them by incoming messages.

As the game began, the following additional intelligence was provided to each U.S. team:[7]

SAMOS space satellite observation vehicles and U-2 photo flights confirmed other intelligence reports that on the previous day Chinese Communist ground forces and advanced elements of airbases moved in force across the Chinese border into North Vietnam. At least two complete infantry divisions totalling 20,000 men and advance elements of six others had already crossed the border. SAMOS observation further indicated that the Chinese Communist forces had begun a full redeployment of forces to the South.

JCS and CIA assessed these moves as a carefully preplanned Chinese attempt to insure a quick Communist victory, presenting the US with a fait accompli.

Soon thereafter the teams were presented with the following account of the reactions of other Southeast Asian countries to the events in Vietnam:[8]

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[7] Game Document No. 1.

[8] G.D. 11.

CAMBODIA - The government of Cambodia had called on all belligerents to honor the cause of peace by withdrawing to pre-hostility lines of demarcation. But, under fears of a DRVN attack into Northern Cambodia, the Chinese Government had kept its borders open to troop movements from the North toward South Vietnam through Communist-controlled areas of Laos. Reports from Phnon Penh indicate that there has been some agitation from military leaders to move into disputed areas on the South Vietnam-Cambodia border, and the border had been sealed off in these areas by Cambodian army units stationed there. The Cambodian government, however, had so far taken no action.

THAILAND - Reports from tense northern Thailand filtering into Bangkok indicated that elements of the Communist Free Thai movement had seized several towns in border areas which had been under uneasy control by the Thai army, which--fully committed to the Laos border--had not yet been able to move against the insurgents.

BURMA - The Burmese Government was paralyzed by the events in Vietnam, and the long smoldering army split reappeared between the high command in Rangoon which advocated avoidance of any conflict and some field commanders who saw the crisis as an opportunity to move against the Shan and Kachin rebels. There were several large and seemingly spontaneous street demonstrations against the Chinese, but the government had maintained order without difficulty.

LAOS - The Pathet Lao, stimulated by the North Vietnamese attack, made several feeler attacks against government positions on the Plain of Jars. Rightwing leaders called on the neutralist government to support South Vietnam.

REST OF SOUTHEAST ASIA - All other governments were watching the events with interest but had not yet taken any action except for India which alerted its border forces.

China and the USSR played relatively conservatively during this first move period, although China did mass twenty divisions of her mountain troops on the 38th parallel in Korea and sent 20 divisions to aid her beleaguered brothers in North Vietnam. Additionally, China resumed shelling of the Nationalist-held off-shore islands.[9] China threatened the U.S. with an expansion of hostilities, while making efforts to strengthen her ties with France and the neutralist countries. The USSR endeavored to reassure Nehru as to Chinese intentions. Khrushchev supported the Chinese venture in North Vietnam, while asking that "a certain degree of caution be used" because of the danger "that an attack on Western imperialist interests might trigger nuclear holocaust." Additionally, there were suspicious redeployments of Soviet troops to the Far East.[10]

In the first move period, U.S. Team A began an immediate airlift of U.S. Army divisions to Southeast Asia, sent three divisions to Vietnam and one division to Taiwan, and alerted the U.S. forces in South Korea for border penetration. Polaris submarines were deployed as an emergency session of the UN Security Council requested.

U.S. Team B took similar steps in South Vietnam, while reaffirming its support for threatened governments in Southeast Asia. Additionally, Chiang K'ai shek's troops prepared for actions.

U.S. Team B also attempted to use the CIA in an attempt to overthrow the government of Laos and replace it with a pro-western government supported by U.S. military force.

U.S. Team C announced that it would definitely honor its committments in Southeast Asia with regard to the defense of South Vietnam, Thailand, and Pakis-

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[9] G.D. 8.

[10] G.D. 13.

tan. The SLAM missile crews were alerted, and troops dispatched to South Vietnam.

U.S. Team D made similar guarantees, but did not send troops immediately. Instead, an ultimatum demanding a cease-fire was sent to China. U.S. Team E followed a policy similar to that of Team D.

C. SECOND MOVE PERIOD (S + 4 to S + 8)

Actions taken by the five United States teams during the second move period were similar enough that Control could continue to send the same messages to all decision-makers. The following summary situation report was issued to all teams:[11]

1. The Military Situation in South Vietnam

The DRVN Army including three Chinese "Volunteer" divisions had broken through lines of resistance thrown up by the RVN Army and penetrated as far as De Hoi (Tourane). Hue had not yet fallen, but the RVN was expected to evacuate momentarily. A secondary attack had been launched by Chinese-DRVN (and possibly Pathet Lao) troops from Southern Laos. These troops were reported to have penetrated 30 miles. No US troops had been directly involved, but advance elements of the US Seventh Fleet were nearing the Vietnam coast near Hue. Airlifting of US troops to advance staging in Thailand, and Formosa. All US and Soviet military forces were on alert.

2. The Military Situation in other Southeast Asian Countries

Thai troops had begun to move against insurgents and recaptured most of the towns held by insurgents. The military in Vientiane had overthrown the Lao neutralist government. Full-scale fighting had broken out in the Plain of Jars and the Pathet Lao appeared to be driving the loyalist forces back. The Laos junta called for US and French military assistance. France replied that it would respond, even if the US did not.

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[11] G.D. 52, 53, and 54.

3. Diplomatic Developments

The Soviet Union declared in the UN that it was most anxious to discuss the situation in Vietnam. The Soviets would participate, however, only if the Chinese Communists were present and allowed to take part in the discussion.

The UK and other NATO nations urged both the U.S. and the Sino-Soviet bloc nations to consider the consequences of their actions, stating that "the fate of humanity is at stake."

France declared its full support for Laos, and it warned the Soviets and the Chinese to stop their aggression in Southeast Asia on threat of facing the full military power of the French nation.

The Chinese team called[12] for a Bandung type of conference of all "neutral and peace-loving nations to consider the clear and present danger to peace initiated by the aggression in North Vietnam by the American imperialist aggressors." Conciliatory moves toward India on the border dispute were combined with reassurances to Moscow that Chinese "settlers" would be withdrawn from the Sino-Soviet frontier. Additionally, the Chinese responded favorably to Soviet initiatives for a conference to settle matters pertaining to the Sino-Soviet doctrinal dispute.

U.S. Team A pleaded for bipartisan support of the U.S. position; on the home front at the UN, it suggested that an observer team under the jurisdiction of the UN be sent to Vietnam and make appropriate recommendations there in order to restore the reign of law. Observers were nominated from Poland, Canada, and India to act in this capacity. At the same time, this team prepared to land U.S.

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[12] G.D. 51.

troops near Hue in an effort to reinforce the battered RVN lines.

This same pattern of peaceful talk coupled with rather strong military moves was followed by Team B. Proposals for a UN peace-keeping force were forwarded by the US. At the same time, however, moves in Eastern Europe and a Nationalist invasion of the China mainland were planned in case the situation worsened. A possible landing of SEATO forces in North Vietnam was planned.

Team C ordered U.S. troops in South Vietnam to advance north and engage Chinese forces. At the invitation of Laotian loyalists, U.S. troops in Thailand were sent into Laos. Strategic forces were mobilized and the following public statement made:

> The United States, as always, deplores the use of force to settle international problems. The U.S. is glad to acknowledge China's request for a Bandung type conference to settle the present problem. However, the presence of Chinese troops within the borders of South Viet Nam, south of the 1954 demarcation line, indicates that China's aims are <u>not</u> a peaceful settlement of the situation. So long as Chinese troops remain in the RVN the United States will remain in a state of full military preparedness, and also repulse any Chinese attack in Southeast Asia.

Team D sent in U.S. forces while asking for a United Nations-policed ceasefire.

Team E attempted to rely more upon strategic systems, threatening to launch missiles at Peking if United States troops were not withdrawn.

D. THIRD MOVE PERIOD (S + 8)

By S + 8 the overall military situation had deteriorated generally with the fall of Hue and the advance by North Vietnamese and Chinese troops. Battle lines had partially stabilized, but South Vietnamese troops were still falling back. In Laos, the Pathet Lao drive had bogged down somewhat as government forces, backed by some U.S. troops and French logistical and air support, steadied. By S + 9 however, a Red Chinese attack on Quemoy and Matsu was attempted with apparent initial success. Meanwhile, Khrushchev made and implemented the followed speech:[13]

> We categorically state that any nuclear attack on the people of Communist China will be considered an attack on the Soviet homeland. We therefore warn the West that we shall retaliate with all of the nuclear might at our disposal if any such precipitate action is taken. We hereby declare that the city of Berlin will be blockaded until the West agrees to hold the proposed UN peace conference with Communist China in attendance.

The United Nations, meanwhile, called for a cease-fire and withdrawal to previous lines.

United States Team A continued its strategy of the previous move period, calling for a peace conference, yet attempting through the use of U.S. forces in Laos and Vietnam to maintain its position. No immediate military moves were made with regard to Berlin, but a propaganda offensive was launched.

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[13] G.D. 80.

In contrast, Team B moved very aggressively. Nationalist Chinese troops were transported to the mainland under naval and air cover provided by U.S. forces. Small nuclear weapons were usedagainst Chinese airfields, destroying all key Chinese bases. American landings at Hanoi took place in an effort to cut off Chinese and North Vietnamese forces. Additionally, shortrange Polaris and LITTLE SLAM missiles were fired at Chinese military and industrial centers. Armored spearheads were directed to relieve Berlin. Global war seemed imminent.

Team C still played a rather conservative game, without committing any force in Berlin, although it threatened to do so. The following excerpts from their public announcements demonstrate Team C's position:

> 1. The United States, in line with its desires for a peaceful solution to the Southeast Asian situation, calls for an immediate peace conference in Geneva. The participants will be China, the Soviet Union, France, the United States, the two Vietnamese parties, and a representative of the Secretary General of the UN.
>
> 2. The only desire of the United States is for peace in Southeast Asia. The DRVN has aggressively attacked the RVN, and has been aided by Chinese Communist troops. The US, in fulfillment of its commitments to South Vietnam, has landed troops in South Vietnam and is repulsing the attacking Chinese. In addition, US missile bases in Asia and Europe have been alerted.
>
> 3. The United States has no desire to use nuclear weapons if such methods can be avoided; we shall not be the first to use nuclear weapons.

Team D also played conservatively, reiterating its support for a peace conference with China, Soviet Union, France, and the two Vietnam governments.

Team D called for NATO and SEATO meetings to back a peace conference and warned of "immediate grave consequences" if an immediate and effective ceasefire and withdrawal to pre-hostility Vietnam lines were not attained. In addition, US Team D warned the Soviets that grave consequences would follow any Berlin blockade.

American Team E issued several ultimatums to the Chinese, but, when they were ignored, the President ordered the Commander of the Seventh Fleet to commence heavy bombardment of the Chinese coast. In addition, US troops with tactical nuclear weapons and orders to repel Chinese invaders at all costs were dispatched to Quemoy.

ANNEX A

U.S. WEAPONS SYSTEMS PROJECTIONS FOR 1968

SYSTEM: POLARIS MISSILES

General: US Navy solid-fueled IRBM.

Mission Environment: Subsurface-to-surface

Types and Strength

Designation	No. operational	Range (Naut. miles)
A-1	100	1,200
A-2	250	1,500
A-3	600	2,500
B-3	100	2,500+

Delivery System

Polaris Type Submarines (nuclear powered, each with 16 missile tubes).

Strength

No. submarines	Type Polaris Missile
5	A-1
13	A-2
23	A-3

Support: 6 tender ships
6 resupply ships
several floating drydocks and other support ships

Bases

Location	Serving Deployment In:
Holy Loch, Scotland	N. Atlantic
Guam	W. Pacific
Bangor, Washington	N. Pacific
Perth, Australia	Indian Ocean

SYSTEM: ANTI-MISSILE MISSILES

By 1968 the Soviet and US (+ NATO) anti-missile systems (improved Nike and Sprint types) available or under development can protect only against non-decoy or, at most, single missile attack. Capital cities, metropolises, major military centers, and naval task forces have such minimal cover. China lacks any anti-missile systems.

SYSTEM: "MINUTEMAN" ICBM

General: U.S.A.F. solid-fueled ICBM. By 1965 this weapon will become the main strategic deterrent weapon in SAC and remains so in 1968. All located in hardened silos.

Strength: 1,000 missiles in 6 wings distributed among as many bases by 1968.

Missile Base	No. Missiles
Malstrom AFB, Mont.	150
Elliot AFB, S. Dakota	150
Minot AFB, N. Dakota	150
Whiteman AFB, Mo.	150
Warren AFB, Wyo.	200
"X" AFB, Wyo.	200

Range: 6,300 miles

Warhead: nuclear (600-kiloton) with CW, BW and HE options if required.

SYSTEM: OUTER-SPACE WEAPONS

No major new developments (much less breakthroughs) are likely to occur in space-weapon technology by 1968. No power will acquire the capability of attack from satellite or other extraterrestrial bases although US and Soviet space R & D programs will continue to push in this direction with operational systems possible by 1973.

However, space satellite systems for reconnaissance and surveillance will be highly successful. Both the USSR and the US will possess by 1968 a sufficient number of improved SAMOS satellite systems to observe any major concentrations or reconcentrations of aircraft, missile bases, or surface ships.

ANNEX B

U.S. WEAPONS SYSTEMS OPTIONS FOR 1968

Four mutually exclusive options were given, and whichever system was selected for a crash program was guaranteed to be available on schedule. In addition the teams were toldthat the normal program on the other candidate weapons systems would automatically bring about development of three prototype weapons of the SLAM missile, all of which would be sufficiently operational that they could be deployed as systems by 1968. The four candidate systems presented were:

SYSTEM: POLARIS A-4 MISSILES

General: Similar to earlier POLARIS missiles except for greatly increased range.

Range: 5000 nautical miles

Strength: By 1968 these could replace the A-1 and A-2 POLARIS MISSILES on the 18 nuclear subs now carrying the latter.

Note: Because this system would greatly increase the targeting choice of the Polaris submarines, any redeployment in crisis of the Polaris fleet would no longer necessarily signal re-targeting.

SYSTEM: NAVY MEDIUM-RANGE BALLISTIC MISSILE (MRBM)

General: A solid-propellant two-stage MRBM to replace "Regulus" system. Exceptionally mobile. Virtually any surface could be quickly adapted to receive this vehicle.

Range: 500 nautical miles

Strength: One or more could be mounted on any frigate or cruiser in the U.S. fleet as well as on many merchant vessels, barges, etc.; can of course operate from land bases.

SYSTEM: "SLAM" GUIDED CRUISE NUCLEAR MISSILE

General: U.S. Navy supersonic low-altitude globe-circling nuclear-powered ramjet missile.

Mission Environment: Surface-to-surface

Speed: MACH 3 (i.e., 2,000 m.p.h.)

Altitude: 100 to 500 feet, radar-altitude controlled to rise above terrain obstructions.

Range: 336,000 miles (i.e. one week).

Accuracy: Pinpoint.

Warhead Options: Nuclear (50 Kiloton to 1 megaton)
Chemical (Poison or nerve gases)
High explosive

Penetrability: "SLAM" cannot be intercepted by any existing weapons except by sheer luck, due to its high speed, high maneuverability, and below-radar detection altitude. It is launched with a pre-programmed course which can be altered without jamming only by having "SLAM" pass directly over its launch base or other pre-selected control center.

Recoverability: None. "SLAM" must be either detonated on target, or dropped in ocean.

Visibility: High. The nuclear reactor engine gives off intense but less than lethal radiation over its course, which can be readily detected by enemy equipment. The reactor also produces sufficient jet-blast noise (and at night, light) that it is unmistakeable to any civilians near whom it flies.

SYSTEM: "LITTLE SLAM" GUIDED CRUISE MISSILE

General: Identical to "SLAM" in speed, accuracy, command-and-control, altitude, and penetrability, but not nuclear powered. Differs from "SLAM" in being airborne over shorter range for less time. 50,000 miles for 1 day (against SLAM's full week). However, as "LITTLE SLAM" costs only about one-seventh as much, firing seven missiles in series can compensate for this reduced performance. As LITTLE SLAM uses a conventional fuel system, it does not possess the radiating, sound, and light characteristics of the nuclear-reactor powered SLAM.

The following choices were offered each of the five U.S. teams:

100 SLAM missiles (including 50 mounted on cruisers and frigates)
or
700 LITTLE SLAM missiles (including 300 mounted on cruisers and frigates)
or
1000 MRBM (including 300 mounted on cruisers and frigates)
or
1000 POLARIS A-4 (including reequipment of 21 of the Polaris subs as well as some mounted on surface ships)

Finally, the teams were asked to specify their desires for any different mounting or deployments of the missile system selected.

ANNEX C

SCENARIO SUMMARY

Note: Scenario Time is 30 September 1964.

A. THE INTERNATIONAL SCENE

1. International Relations

Basically unchanged since 1963. As the nuclear test ban treaty of 1963 managed to remain in effect without any clear violations by the major signatories, the major earlier sources of nuclear tension relaxed somewhat. For this reason (reinforced by certain technological controls discussed below) neither the major political leaders nor the general public any longer fear a sudden unheralded nuclear attack. Fingers are no longer nervously poised over the pushbutton. For these same political and technological reasons, the once widely believed danger of accidental war has also all but disappeared: the major nuclear powers are quite prepared to accept one or even more nuclear accidents (or deliberate provocations from the minor nuclear powers, i.e., France or China) without automatically initiating an East-West missile exchange.

As a consequence of this altered attitude, France's continued standoff from signing the so-called Treaty of Moscow as well as China's emergence by 1968 as a minor nuclear "power" (with only "primitive," i.e., low-yield atomic bombs deliverable only by bomber, short-range rockets, ships or "suitcases") represents less of a threat than was widely anticipated in 1963.

Germany: A German peace treaty remains postponed, hence Berlin continues as a potential flash-point of general war.

Cuba: Castro continues to rule with Soviet support, but with sporadic signs of unresolved strain with Moscow and willingness to accept Chinese aid.

Latin America: A superficially turbulent period since 1963 which by 1968 found the mixture substantially as before, offering tempting but uncertain rewards for Cuban, Soviet, or Chinese propaganda and intrigues.

Africa: No change.

Middle East: No change.

United Nations: No change in membership or procedures.

Sino-Soviet Relations: "No change." But the very fact that ideological and inter-governmental conflict continued unresolved for over 5 years implies a certain agreement to disagree. All Soviet technical assistance has been withdrawn and no military or political intelligence information has been regularly exchanged between China and the Soviet Union.

2. Military Technology and Force Levels

In general, the world's armies saw little change in size of deployment since 1963 except in the Far East.

China achieved the status of a nuclear power, albeit a minor one, in 1964 with her first successful atomic explosion. By 1968 her capabilities were known to be limited to at most twenty 20-kiloton (i.e., "Nagasaki" type) plutonium-239 warheads deliverable only by medium bombers, ships or "suitcases." In addition the Chinese army was known to possess an equal number of battlefield support ballistic missiles with a range of 150 miles capable of delivering China's arsenal of 20 warheads. China's ground forces remain large and have been somewhat modernized. Her airforce is under a crash development program but will not receive any new equipment until 1970 until which time she will maintain her aging Russian built force of 20 Tu-4s (1500 mile range-heavy bombers) and MiG-17 fighters. Her main strategic threat is from her 500 operational 11-28 twin-jet medium bombers which could still penetrate even sophisticated US or Soviet defenses by a sufficiently concentrated attack. The backbone of the small Chinese fleet remains her 30 submarines, including 15 long-range and 15 coastal types.

India's armed forces have been somewhat modernized and slightly enlarged since 1963, but still lack a sophisticated air defense other than her fleet of 250 India-built MiG-21s.

Additional information as to the military situation in 1968:

1) each U.S. fleet has at least 2 missile cruisers carrying, in addition to air defense missile capability, tactical missiles (100 mile range) with tactical nuclear warheads.

2) the strike Air Command has a five division (mobile, at least one armored) strength. With equipment already at the destination, one division can be completely moved within 72 hours. Without equipment (i.e., equipment transported to objective) 4 days are necessary for the first division and one week each for the remaining divisions.

3) The Soviet Union missile capacity includes 500 hardened missile sites.

B. CRISIS IN SOUTHEAST ASIA

1. Introduction

On September 30, 1968, substantiated reports indicate that generalized fighting has developed between armed forces of the Democratic Republic of Vietnam (DRV) and the Republic of Vietnam (RVN) along the entire length of the truce line set by the Geneva Conference of 1954. The reason for the hostilities soon became known. Armed forces of the DRV proclaiming their intention to liberate their "oppressed brothers" in the RVN had moved across the frontier and were attempting to drive southward.

This acute crisis was but one phase of a general malaise that reflected continuing political and military instability throughout the Southeast Asia area where Communist China bordered on the neighboring states. Now there was good reason to believe that the Vietnam fighting could touch off generalized warfare throughout the region of Southeast Asia.

2. Brief Situation Report

Vietnam: The fighting in Vietnam came about as the culmination of several trends set into motion by the successful military coup in the RVN some five years earlier. Several months after the November 1963 military coup, the military ruling junta turned over power to a new parliamentary regime that had been elected by the people of South Vietnam. The new government of the RVN used its wide popular mandate to institute a bold series of reforms that strengthened the economy. The cleansed army leadership, its hands freed from the restraints imposed by the Ngo dinh Diem family tyranny, was able to devote

itself to the task of smashing the armed units of the Communist National Liberation Front. In the next four years, it succeeded in reducing the Communist military threat to isolated actions. So heartening was the increased military effectiveness of the RVN Army that US forces had been pared down from a high of 17,000 in 1963 to the size of the training mission envisaged in the Geneva Agreement of 1954. The RVN established its full control over the entire area of South Vietnam and held elections in June, 1968 to provide all political forces with the opportunity to participate. The startling successes of the Government were enhanced by the breakaway of significant political leaders from the Communist National Liberation Front who then proclaimed their support of the RVN.

The DRV had fallen on hard times during the same period. Its outstanding leader Ho chi Minh had passed away in 1966. A sharp faction fight broke out in the ruling Lao Dong (workers) party for control as the chief balances between the "pro-Russian" and "pro-Chinese" wings of the party vanished from the scene. The political and military reverses of the National Liberation Front in the South weakened the "pro-Russian" wing and lent fuel to the "pro-Chinese" proponents of a hard line favoring military intervention to aid their embattled brethren. The "conciliationism" practised by Ho chi Minh had clearly not paid off. The RVN had prospered and it was beginning to exert a favorable pull on the population in the DRV who continued to suffer under the austerity program of the Communist rulers. The provision of men and materials by the DRV to troops in Laos and South Vietnam constituted a heavy economic drain that the DRV could ill afford. It now faced the prospect of complete failure in its long drawn out struggle to take over South Vietnam unless

there was resort to a quick military victory. Moreover, the neutralist government of Laos was clearly beginning to take action against the Pathet Lao, sensing the weakness of the DRV in the struggle against the RVN.

Burma: The situation in Burma remained in a state of uncertainty following the events of 1965. The hold of the Rangoon Government had been broken in the Shan and Kachin areas where insurgents had proclaimed new governments. In their efforts to maintain themselves, the newly independent Shan and Kachin states had been receiving supplies from Communist China. The Central Government had been unable to counter the insurgency because of a protracted internal split between members of the armed forces. In January 1968, the breach was healed and plans were made to take action against the insurgents in the North. The Shan and Kachin states leadership countered by opening negotiations with the CPR-sponsored Federated People's government.

Thailand: The situation in Thailand was equally unsettled. The northeast region of the country was a hornet's nest of subversion and intrigue. Dissident elements were clearly consorting with Communist Chinese border dwellers who were vigorously pushing a project of creating a greater "Federated People's Region." The DRV and the CPR had concluded a pact in 1967 which fused their two "autonomous" areas of Thai and Hill peoples and recognized it as an "independent" state. The Thai government, alarmed at the developments, had strengthened its military forces in the Northeast against the possibility of a secessionist movement.

Communist China: Its situation has remained generally the same as in 1963 as far as its military position was concerned except for becoming a minor nuclear

power. Also it had modernized and reactivated its fleet of 30 subs. Politically, its relations with the Russians at the government level were correct despite the continued party split that had been finalized at the International Communist Congress in 1964. The CPR leadership was clearly interested in the situation on its southern border since as indicated, it had vigorously pushed the new project of a "federated Peoples Region." Mao Tse-tung had died in 1966 and was replaced by Chou En-lai.

United States: The Democratic administration had been reelected and was finishing its second term. The country was in the throes of an election campaign that gave promise of a close result such as the 1960 elections with the winner in doubt. The renewed crisis in Southeast Asia promises to become overnight the major campaign issue in the final weeks of the presidential campaign. Nothing less than sudden collapse of the entire Southeast Asian region seems at hand unless massive Chinese intervention can be prevented. To underline the seriousness of the situation, the Presidential press secretary summoned the Washington press corps to the State Department auditorium this morning at 6 a.m. to announce that as a result of the threatening situation in Southeast Asia the President had cancelled his campaign speeches in New York City, returned to Washington, and immediately went into session with the hastily summoned National Security Council.

ANNEX D

CROSS-GAMING COMPARISON AND THE ROLE OF THE QUESTIONNAIRE

For the first time in the series of M.I.T. student and professional political-military crisis games which have been conducted over the past several

years, participants have been asked to concern themselves with filling out questionnaires during the course of play. The use of such questionnaires has ranged from sparing use in professional gaming (DETEX I) to quite heavy use in the student games (EXDET I and the Air Science class game). Although the administration of questionnaires has aimed at a minimum disruption of the flow of interaction within the gaming situation, there is no question but that the filling out of these forms places an additional burden upon the game participants. Thus, it is necessary to ask what is gained from our distribution and collection of such questionnaires.

The role of questionnaires in gaming--both student and professional--might be discussed in terms of the contribution of the questionnaire along several dimensions. First of all, the questionnaire permits the opportunity for systematization of the data generated by the players. For example, if judges read over the moves made by each team to decide whether or not a given move has been performed, there are major problems of inter-judge reliability. By having the players themselves check the moves which they made, these problems are surmounted.

Two other points relating to the use of questionnaires in general might be mentioned here: First of all, since good questionnaire design involves pre-coding of the replies, data processing is facilitated through this use of questionnaires. Additionally,by asking the same question in several different games, it may be possible to produce findings stable across both different crisis situations and different types of participants.

Finally, asking different questions designed to measure the same thing

allows one to get at what Paul Lazarsfeld has termed the "interchangeability of indicators." If one of the questionnaire items is distorted, perhaps because of the particular characteristics of the subject or the questionnaire administration, the other indicators should point this out. Generally, the indicators should be interchangeable: if one of the indicators is missing it should be replaced by the remaining ones and the level and direction of the underlying social process would still remain clear.

An example of this from recent gaming experience might clarify the concept. In EXDET I, our student-level experimental simulation on problems of deterrence, our general impression of the game was that little escalation occurred. But how could this stability be demonstrated? In this instance we had three main indicator types to validate our general impressions. These were questions referring to escalation, national images, and threat perception. The fact that these three indicators showed little change in the three move periods provided strong support for our initial impression.

The usefulness of the questionnaire technique can be further demonstrated through a discussion of empirical work on the study of escalation. Similar questionnaires were administered to a group of academic and Government experts in the DETEX I game and to a number of MIT undergraduate students from an international relations class in the EXDET I game. Essentially the same scenario was used by both groups. The Scenario revolved around a Southeast Asia crisis in 1968 in which a revitalized South Vietnamese government became involved in offensive activities against the North Vietnamese regime. In addition to this move, the rest of Southeast Asia presented an even more unstable

picture than at the present time. The situation of the Pathet Lao in Laos had improved over time; additionally, Communist infiltration into northern Thailand had increased. Soon after the start of conflict between North Vietnam and South Vietnam, the Chinese Communists intervened, pushing the RVN troops back.

Additionally, the questionnaire was administered to a group of Air Science students participating in an Iran crisis game. The scenario in this game was based upon the assassination of the Shah of Iran and the sending of Soviet troops into Iran. The Iranian premier, who survived an assassination attempt and subsequent attempted coup, regained partial control of the government and called for United States aid.

As noted earlier, the administration of the questionnaire provides an opportunity for getting at important comparisons among games. In these three crisis situations, the rapporteur on each team was asked to select those moves which his team had made from a list of about thirty-five moves. Moves were selected which would be more or less independent of each other, i.e., one would not automatically include the other. The basic conception was that in a crisis situation moves low on the escalation ladder would be taken more frequently than moves high on the ladder. For example, nuclear weapons would be resorted to only in extreme, infrequent situations. Nine basic escalatory moves, together with the percentage of times in each game that they were made, are summarized in Table D-1.

Several comments might be made on this ladder. First of all, its imperfect nature should be emphasized. In particular the results of the EXDET I

TABLE D-1: Escalation Ladder

Move Made	EXDET I Percentage Mentioned	DETEX I Percentage Mentioned	Iran Crisis Game Percentage Mentioned
Use of nuclear weapons against interdiction targets	13%	0%	25%
Use of nuclear weapons in the battlefield area	19%	0%	17%
Declare a total mobilization	n.a.	n.a.	33%
Sending conventional forces to reinforce allied forces	87%	44%	83%
Declare a limited mobilization	n.a.	n.a.	83%
Use of combat advisors and logistical support to aid friendly forces	73%	44%	92%
Deployment of strategic forces for possible action	93%	56%	75%
Use of naval vessels for a show of force	93%	78%	83%
Deployment of conventional forces for possible action	87%	78%	100%

game are somewhat out of order with the others. The experimental nature of this effort, with its five participant teams, might have contributed to such a juggling of percentage figures. A second important point concerns the differences between DETEX I and the two student games. The generally lower level of activity in the professional game might emphasize the more cautious nature and the deescalation tendencies in such games. This, however, will be qualified below.

Finally, the substantial break between conventional activity and the use of nuclear weapons is shown by this chart. In EXDET I there was some forcing of the action, but it was still difficult to produce the use of nuclear weapons. The reversal with regard to the generally considered use of nuclear weapons found in the Iran crisis game is to be noted, but was ignored in the ladder construction as the difference between 17 and 25 percent is the result of only one respondent. And the data from EXDET I contradicted it.

Additional results utilizing this comparative method can be best pointed up by a presentation of the percentage figures for the questionnaire administered in the three games. The larger list of moves to be shown here was not incorporated into the attempt at building an escalation ladder for several reasons. First of all, some of the moves are clearly dependent upon others. For example, the move to "fight only if attacked but do not conduct offensive operations" can only occur after one's troops have been sent into the disputed area. Secondly, there are special kinds of events, such as those involving the United Nations, which seem to be conceptually different from the military moves involved in an escalation ladder.

TABLE D-2: Summary of Escalation Material for EXDET I

	Percent of time Move Chosen
Shows of Force	
Deploy conventional forces for possible military actions.	87%
Deploy strategic forces for possible military action.	93%
Use naval vessels for a show of force.	93%
Land ground forces in _____ as a show of force to support your interests.	87%
Military Action	
Initiate a selective blockade of one or more countries	7%
Use naval and/or support to aid friendly forces in _____.	7%
Use combat advisors and logistical support to aid friendly forces of _____.	73%
Send conventional forces to reinforce the friendly forces of _____ in its struggle.	87%
Relations with Allies	
Consult your allies as to the proper course of action.	73%
Take conciliatory measures in areas of dispute with one's allies.	53%
Be willing to "go it alone" with minimal support from one's allies.	87%
Relations with United Nations	
Present your case in the United Nations.	73%
Work for the sending of a United Nations observer team or a similarly constituted body to one or more disturbed areas.	80%
Work for the sending of a United Nations emergency force to one or more disturbed areas.	67%
Seek United Nations sanctions against one or more countries.	27%

Nuclear Testing

Conduct underground nuclear tests.	0%
Announce study of the resumption of aboveground nuclear tests.	13%
Announce resumption of aboveground nuclear testing.	0%
Conduct aboveground nuclear tests.	0%

Use of Nuclear Weapons

Explode a nuclear weapon in an unpopulated area as a show of determination.	0%
Use nuclear weapons in the battlefield area.	19%
Use nuclear weapons against interdiction targets.	13%
Use nuclear weapons against enemy bases far behind the lines.	7%

TABLE D-3: Summary of Escalation Material for DETEX I

	Percent of time Move Chosen
Shows of Force	
Deploy conventional forces for possible military action.	78%
Deploy strategic forces for possible military action.	56%
Use Naval vessels for a show of force.	78%
Land ground forces in _____ as a show of force to support your interests.	22%
Military Action	
Initiate a selective blockade of one or more countries.	11%
Use naval and/or air support to aid friendly forces in ____.	22%
Have air and naval forces respect an enemy sanctuary in ____.	11%
Use combat advisors and logistical support to aid friendly forces in _____.	44%
Send conventional forces to reinforce the friendly forces of _____ in its struggle.	44%
Fight only if attacked but do not conduct offensive operations.	22%
Have ground forces not advance more than _____ miles.	0%
Have ground forces not advance over a border between _____ and _____.	11%
Relations with Allies	
Consult your allies as to the proper course of action.	44%
Take conciliatory measures in areas of dispute with one's allies.	22%
Be willing to "go it alone" with minimal support from one's allies.	33%

Relations with United Nations

	Percent of time Move Chosen
Present your case in the United Nations.	11%
Work for the sending of a United Nations observer team or a similarly constituted body to one or more disturbed areas.	22%
Work for the sending of a United Nations emergency force to one or more disturbed areas.	0%
Seek United Nations sanctions against one or more countries.	0%

Nuclear Testing

Conduct underground nuclear tests.	0%
Announce study of the resumption of aboveground nuclear tests.	0%
Announce resumption of aboveground nuclear testing.	0%
Conduct aboveground nuclear tests.	0%

Use of Nuclear Weapons

Explode a nuclear weapon in an unpopulated area as a show of determination.	0%
Use nuclear weapons in the battlefield area.	0%
Use nuclear weapons against interdiction targets.	0%
Use nuclear weapons against enemy bases far behind the lines.	0%

TABLE D-4: Summary of Escalation Material for Iran Crisis Game

	Percent of time Move Chosen
Shows of Force	
Deploy conventional forces for possible military action.	100%
Deploy strategic forces for possible military action.	75%
Use naval vessels for a show of force.	83%
Land ground forces in _____ as a show of force to support your interests.	50%
Military Action	
Initiate a selective blockade of one or more countries.	8%
Use naval and/or air support to aid friendly forces in _____.	58%
Have air and naval forces respect an enemy sanctuary in _____.	17%
Use combat advisors and logistical support to aid friendly forces in _____.	92%
Send conventional forces to reinforce the friendly forces of _____ in its struggle.	83%
Fight only if attacked but do not conduct offensive operations.	42%
Have ground forces not advance more than _____ miles.	17%
Have ground forces not advance over a border between _____ and _____.	33%
Relations with Allies	
Consult your allies as to the proper course of action.	33%
Take conciliatory measures in areas of dispute with one's allies.	17%
Be willing to "go it alone" with minimal support from one's allies.	92%

Relations with United Nations

Present your case in the United Nations.	67%
Work for the sending of a United Nations observer team or a similarly constituted body to one or more disturbed areas.	58%
Work for the sending of a United Nations emergency force to one or more disturbed areas.	42%
Seek United Nations sanctions against one or more countries.	58%

Nuclear Testing

Conduct underground nuclear tests.	17%
Announce study of the resumption of aboveground tests.	8%
Announce resumption of aboveground nuclear tests.	17%
Conduct aboveground nuclear tests.	17%

Use of Nuclear Weapons

Explode a nuclear weapon in an unpopulated area as a show of determination.	8%
Use nuclear weapons in the battlefield area.	17%
Use nuclear weapons against interdiction targets.	25%
Use nuclear weapons against enemy bases far behind the lines.	25%

Mobilization

Declare a limited mobilization.	83%
Declare a total mobilization.	33%

Several points emerge from such a presentation of the data. Although all three games involve limited hostilities, at least one type of limits was ignored. To be specific, there was little concern for advancing only a few miles and then halting in order to bargain. This is seen by the low frequency of the following move.

	DETEX I	Iran Crisis
"Have ground forces not advance more than _____ miles."	0%	17%

It must also be noted that reported differences between student and professional games might be the results of experimental artifacts. In particular, participants in professional games seem noticeably more reluctant than do students to fill out questionnaires. Such an attitude might be reflected in an unwillingness to check various moves, even if they have been performed by their team. An example of this is seen in the results of the following two somewhat contradictory questions:

	EXDET I	DETEX I	Iran Crisis
"Be willing to 'go it alone' with minimal support from one's allies."	87%	33%	92%
"Take conciliatory measures in areas of dispute with one's allies."	53%	22%	17%

Responses in the professional game are consistently low, while more variation is shown in the student games. Only further experimentation, and perhaps a systematic content analysis of game moves, would help out here.

The stability of the EXDET I game over the three move periods may be demonstrated by presenting very rough scales for the amount of activity in the different sorts of "issue areas" which were measured by the part of the questionnaire relating to escalation. The absolute values of these scales are not important--what is important is the amount of change relating to military action.

Activity Relating to	Move Period I	II	III
Shows of Force	3.60	3.80	3.40
Military Action	1.80	2.80	2.60
Relations with Allies	2.40	1.80	2.20
Relations with United Nations	2.60	2.40	2.40
Use of Nuclear Weapons	0.20	0.00	1.20

Some heightening of military action is seen in the second period--this alerts us to going back to the appropriate move period to check this. Additionally, with some "forcing by Control," one or more teams turned to the use of nuclear weapons in the final move period. This is picked up by our instrument as well. Overall, however, the general impression of stability is confirmed.

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