THE POLITICAL-MILITARY EXERCISE
A Progress Report

by

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I. Introduction

On a clear spring day in 1963 a group consisting of three senior members of the Soviet Presidium, President Kennedy with four of his colleagues on the National Security Council, Charles de Gaulle, Fidel Castro, and the U.N. Secretary General and his Military Advisor sat down to an informal lunch together. The Soviet group typically chose the seats farthest from the others. The Americans, characteristically gregarious, nevertheless displayed a certain reserve toward General de Gaulle and ostentatiously avoided Senior Castro. The Secretary General seemed generally popular. The luncheon conversation, while guarded, was spirited as each group defended its strategy in the grave crisis they all faced.

The place, however, was neither the White House, the Kremlin, nor U.N. Headquarters. It was Endicott House in Dedham, Massachusetts, the "country estate" of the Massachusetts Institute of Technology. The "President of the United States," the "Chairman of the Soviet Council of Ministers" and the other dignitaries were actually distinguished American diplomatic officials, military officers, and scholarly specialists on foreign policy. The enterprise was a three day "political-military exercise." The subject was a hypothetical global diplomatic crisis arising in Latin America, with senior American professionals in the fields of diplomacy and strategy simulating the roles of policy-makers in a number of "governments" including their own. The main purpose was to learn something more about the kinds
of strategies that might be open to the United States as it faces political-military crises in the dangerous years ahead.

This undertaking was unusual but, although most Americans would be surprised to know of it, not unique. For the same scene might be encountered in a growing number of universities, research organizations, military and diplomatic training schools and, still in limited ways, in policy-making centers in Washington itself.

Revolutions are few in the study and understanding of foreign policy. Rarer still are techniques for methodically anticipating events in the realm of diplomacy—a trade which, along with horse-betting, traditionally relies on a highly unscientific combination of hunch-playing plus an educated sense of the past. In recent years the search has intensified for ways of bringing to foreign policy planning some of the imaginative analytical techniques employed by military planners and operations analysts. A variety of experimental techniques has been developed with a view to increasing knowledge and making it more precise. Beyond that is a far more daring claim: to improve our ability to make predictions about the future. For to the extent such new methods are successful they should tell us something we do not now know about likely effects of national strategies and the policies adopted to achieve them. They should help us make better guesses about the probable reactions of other actors on the international stage to American moves. And they should help us "stockpile" some useful conclusions about the options open to the nation as it looks out across a seething world to the years directly ahead.
Some of these attempts to make foreign policy "more scientific" have been useful; some have not. Some seem promising, while others--such as the attempts to reduce international relations to numbers--too often seem to remove the very essence of the process, such elements as temperament, history, and irrationality which constitute the real world of international relations. Some of these new techniques have impinged profoundly on the consciousness of policy makers; others are as remote to them as Sanskrit. Diplomacy has by no means rushed with open arms to welcome the invasion of its sacred precincts by operations research or game theory. Most professional diplomats persist in viewing their trade as an art--evanescent, fragile, and not susceptible to scientific approach. And in many ways they are right.

So far there is no sign that such recent experiments have had anything that could be called "success" according to classic definitions. But some modest inroads have been made on the problem. And at least one device--the political-military exercise--has caught the attention and imagination of people at responsible places in government as well as in academic life. Indeed, there is some danger that too much might be expected of it as an aid to policy planning and action, since it remains highly experimental and only tentatively capable of anything resembling predictive value. Furthermore, it may or may not be worth the cost and effort compared with more conventional forms of research and planning. But as an interesting
intellectual innovation it has seemed worth investigating, and the recent results of such investigation at one university--M.I.T.--are reported here.

In 1958, two parallel interests converged to persuade the M.I.T. Center for International Studies to give serious attention to political gaming. Interest by Max Millikan and his colleagues at the Center in simulation as a social science method had been whetted by the role-playing, political gaming technique developed in 1954-56 in the RAND Corporation's Social Science Division.\footnote{Social Science Division, Experimental Research on Political Gaming (Santa Monica: The RAND Corporation, 10 November 1958. Published as Memorandum P-1540-RC.)} At the same time the Center's United Nations project directed by the senior author was seeking for better ways to anticipate and study future crises involving the United States and the United Nations. And also at M.I.T. Lucian Pye and others were beginning to experiment with simulation as a classroom device for teaching undergraduates.

The initial M.I.T. policy-type exercise--the so-called "POLEX"--was held in the fall of 1958 as a part of the U.N. project, taking as its mise en scène a hypothetical future crisis situation in Poland. In 1959 two further games--but using undergraduates as players--were conducted by Norman Padelford; and the use of simulation in the teaching of foreign policy, strategy, and international relations to
both undergraduates and graduate students has been continued to the present by Professors Bloomfield and Padelford. The second Center experiment employing senior specialists in and out of government was held in 1960, also directed by the senior author and focused on a crisis in the Middle East. This game was noteworthy both for demonstrating the feasibility of incorporating a substantial element of simulated theater-level military operations in an international political crisis, and for developing the general technique to a point where the professional participants recognized it as having heuristic value even for themselves.

The most recent series comprised four games conducted under contract with the Institute for Defense Analyses, in 1962-63. These games combined several research and policy planning objectives. They

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4Specifically intended to supplement research undertaken by IDA's Study DAIS (Domestic and International Security) supervised by Ernest W. Lefever and under the general direction of James E. King, Jr., Director of the Division of International Studies at IDA. Study DAIS, sponsored by the Office of the Assistant Secretary of Defense for International Security Affairs, was an investigation of the problems involved in possible uses of international military force or forces.
studied the possible employment of United Nations military forces under conditions of increasing disarmament. They studied some of the strains to which the disarmament process itself might be subjected by major international crises. They studied crisis management per se, each of the four hypothetical crises being chosen to represent a type of crisis and a regional problem which was thought to be of potential concern to U.S. policy makers.

The first game in this latest series (labelled for convenience "POLEX-DAIS") was set in the present arms environment and involved a typically ambiguous situation of Chinese Communist indirect aggression and subversion in Southeast Asia. The second was set at mid-point of Stage I of a disarming world and concerned a colonial-racial civil war in a newly independent African nation. The third simulated a "classic" small-power war in the Near East under conditions midway through a Stage II disarming world, and the fourth a Castro-type revolution in Latin America in mid-Stage III, the stages being those in the U.S. disarmament proposals of 18 April 1962.

The technique and findings reported in this paper draw upon the entire series of exercises held at the M.I.T. Center since 1958, but particularly the four "DAIS" games conducted during 1962-63. The latter form a series, closely related not merely by the common commitment to researching critical policy issues but also in that they constitute a developmental sequence, each successive game having undergone appropriate modifications in structural format and procedural
rules. Before indicating the tentative conclusions drawn from these games it might be helpful to describe briefly the art of the policy-level political-military game as now practiced at M.I.T. A later section discusses briefly the possibly equally important and interesting educative uses of the technique.

II. The Policy-Type Political-Military Exercise*

This type of political-military exercise is a decision-making simulation centering on a hypothetical (or real) international political—and potentially military—crisis, and is characterized by role-playing, with the senior policy echelons of governments or international organizations simulated by professionally qualified political, military and academic specialists, preferably men with either decision-making experience at higher levels of government or close working relations with policy makers.

Its chief purposes can be summed up as, first, the checking out of hypotheses or tentative conclusions about foreign policy and strategy arrived at by more conventional methods of research; second, the "pre-testing" of strategies of action; thirdly, the discovery of unanticipated contingencies, alternatives, or possible outcomes as a consequence of sequential interaction between conflicting strategies.

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*We propose that the term "exercise" be applied as the formal rubric for this specific category of political or political-military simulation. For informal or casual usage we have used the terms "game," "gaming," and "simulation."
in the simulation; fourthly, the close examination of one particular line of action that in its development and impact illustrates vividly what a single plausible outcome might resemble in detail.

The political-military exercise falls into the broad category of political simulations defined by Richard Brody as "physical and/or biological representations of systems which attempt to replicate sociopolitical processes." More specifically, they are in the subcategory of "man"-simulations--as contrasted with "machine" or "man-machine" simulations--although the technique does not logically preclude introduction of computer-determined outcomes for certain activities, particularly military ones.5

This kind of simulation is related only indirectly to the theory of games, which applies mathematical formulas, laws of probability and bargaining theories to determine outcomes of formalized conflict situations. The political exercise has parental roots in the classic military war game, but does not usually lend itself to the precise and numerically expressed wins and losses of a war game.

Actually, clear-cut "victories" are few in diplomacy, and one virtue of the political exercise is to overcome myths to the contrary.

How is a game organized?

The participants in the Center's games have been divided among two or more teams plus a Control Group. In addition to Control, the series of games conducted by M.I.T. in 1962-63 employed from three to five teams, the 1960 exercise used a standard "Red" versus "Blue" team division, and in 1958 ten teams played simultaneously. In all games played to date there has been at a minimum a U.S. and a Soviet team. (Some of the War College and Defense Department exercises regularly limit themselves to "Red" and "Blue," in the possibly too simple fashion of "aggressor" and "defender" in military war games.) Each of the four POLEX-DAIS games also included a "U.N. Team" representing the quasi-autonomous role of the U.N. Secretary-General and his Military Advisor. Several games incorporated additional teams representing China or the U.A.R. or such collectivities as Western Europe or the Afro-Asian bloc.

The Control Group has several functions. It represents "Nature," introducing unexpected events; it is umpire, ruling on the plausibility and outcomes of moves; it is, as it were, "God," requiring the players to live with the implications of their chosen strategies. Since only a fraction of the political world can be represented by playing teams, the Control Group customarily itself furnishes the needed inputs on behalf of any other nations or international organi-
zations whose actions may be relevant to the crisis problem or to whom the teams may be sending messages. If and when matters come to the "U.N." and a decision point is reached, the Control Group, in collaboration with the U.N. team, can count probable votes and stipulate the action taken.

Such games have employed from 18 to 24 full playing participants not counting the Game Director and Game Historian. This number has now stabilized to be a close function of the number of teams, 3 to 5 members per team probably representing the limits for efficient operation. Fewer than three members risks two-man conflict while also not allowing enough manpower for the necessary production of messages; more than five may produce near-paralysis in the team. The POLEX-DAIS series employed from two to six-man teams, and its Control Groups ranged in size from 5 to 9 men, with a single chairman (the 1958 and 1960 games having experimented with twin umpires supported by "consultants"). Five seems the optimum number for Control, although the number here is more flexible than on the teams. With increased experience in game administration, we believe that by better controlling the message flow the technique can cope effectively with at least five teams, the main limiting factors being finance and physical facilities rather than increased complexity of communications.

Each team and the Control Group is assigned members by the Game Director on the basis of his anticipation of their needs for various specialized skills. The Game Director also appoints one of these as
Chairman who is then expected to assign further roles or responsibilities within his group. Because of their interactions it often follows that "games" take place within the teams in making their own collective decisions. The Game Historian serves the Control Group as its rapporteur, maintains the game archives and subsequently writes the narrative history of the game. Each team is assigned a Rapporteur who records, as an aid to the Historian, the alternative strategies considered by the teams. In addition the Rapporteurs may be coopted by the senior members to perform playing roles on the teams. Team Rapporteurs and the Game Historian may of course be drawn from among the less professionally experienced, such as junior faculty members, research assistants, or even older graduate students. Area, military, or other experts who may be required may also be persons with little actual decision-making experience.

The physical arrangements for these games can (and do) range from austere to luxurious. But it is essential to insure privacy of team discussions by assigning each team to a separate room. The Control Group requires sufficient space to hold both plenary meetings and the Message Center.

Adequate administrative staff consists of the Game Director, an Administrative Assistant, two Message Center Clerks (usually graduate students or comparable personnel), a duplicating machine operator, and one secretary-typist for each team. Although this is a rather large administrative "slice"--POLEX-DAIS III with five teams plus
Control had an overhead staff of 11-4-t has helped minimize intrusive procedural incidents and has ensured prompt handling of messages. In future games, the Game Director could probable double as Control Chairman, but otherwise little modification in the administrative roster seems indicated.

It has been found desirable to enforce a rule barring observers or visitors; by all available evidence this kind of voyeurism, however well-intentioned, is inhibiting and even disruptive. Similarly, such standard laboratory or intelligence data-acquisition devices as one-way mirrors, "bugs," "confederates," and even tape recorders have seemed inadvisable.

The control of communications is essential to the exercise. All moves of whatever sort, whether diplomatic messages, public speeches, troop movements, or "secret" strategic plans, are initiated as Game Documents on standard printed message forms and channelled by the Message Center to, through, or from Control. Any informal face-to-face negotiations or discussions between delegated members of teams—a practice whose value in policy-games is questionable—are monitored by Control and subsequently summarized as standard Game Documents.

It has proved possible to reduce the length of the typical M.I.T. exercise from three-and-a-half to two-and-a-half days without loss of quality and making it more convenient for busy persons to take part. Increasing interest is being expressed in developing a one-day exercise that with only a minimum of detailed planning and overhead
could on short notice be focused on an impending crisis situation.

A recent experience with a one-day game in the senior author's graduate seminar on foreign policy in the late spring of 1963 suggests the feasibility of one-day games and it is our intention to experiment with them further.

Given this setting and structure, how is a game played? First, the substantive event with which the players must deal is set forth in a basic document, the "scenario-problem," which specifies such details as prior history and military capabilities and dispositions. But unlike formal or highly structured political, military, and business games, the political-military exercise does not proceed beyond that point according to any predetermined program or script. During the course of play the moves and counter-moves are improvised.

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6 A report by one of the seminar participants analyzes this game. Tom W. Carroll, A Political-Military Game Involving an Independent European Force (typescript, 24, May 1963). This game explored the deterrence effect of a hypothetical independent European nuclear force.

by the teams. Even the Control Group is not constrained by a fixed program, although it has in mind that the game tends to work best if certain lines of action are stressed, e.g. it may be desirable that the teams be deliberately pushed toward the "brink," or that the U.N.'s capabilities be detailed as of special interest to examine. But generally Control will limit itself to meshing the moves of the playing teams in such a way as to keep them focused on the central research problems posed for the exercise.

Play proceeds through a series of discontinuous "move periods" which have ranged from four to six in number, the precise number subject to change by Control in the light of developing events. (In the 1958 game and others we have heard about, play was continuous except for time-out for meals, etc. Those of us who barely survived the chaos of the 1958 exercise are grateful to Thomas C. Schelling for suggesting the discontinuous move period device, not to mention the many other ideas of value he has proposed as a close collaborator in this area of research.)

Each move cycle begins with Control inputs, the scenario counting as the initial Control move. In each move period the teams go through a 1½ to 3 hour process of defining and redefining their basic strategies, assessing the motives underlying the moves of other teams, the events necessary to foresee, and the courses of action which might subsequently open, and then determining their moves in relation to those alternatives. At the end of their allotted time,
while individual team members are engaged in drafting portions of their collective output, it has been found extremely useful to have each team chairman orally brief Control so its work can commence without waiting for the detailed papers.

The relationship of "game time" to actual time is determined by Control after considering the plausible time-lags required to accommodate the events generated by the teams. The time clock, that is to say, is adjustable, each move period reflecting whatever time period Control may stipulate. The POLEX-DATIS games have simulated from 9 to 70 days of clock time, depending on the level of intensity of the crisis at the time it was presented to the players, the complexity of diplomatic negotiations involved in formulating responses to the crisis, the speed with which escalation may have developed, and so on.

A fairly lengthy, highly informal interaction process of this sort is bound to generate a rather astonishing number of events. Of the many possible methods by which such data can be collected and analyzed, five were used throughout the DATIS series.

First, the standard Message Forms on which all final team decisions and formal team interactions were recorded comprised the basic record of the game, providing the raw material for the Game

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8 There are a variety of theoretical and procedural problems linked both to the use of discontinuous move periods and to the lack of coincidence between game and real time. These problems have not yet been systematically considered by any of the several types of political simulation.
Summary prepared for each game by the Game Historian, and remaining as promising data to be refined at leisure.

Second, the team Rapporteurs, being in a sense observers as well as participants, recorded data about team consideration of choices, strategies opted for and the like. (Their dual role has tended to prevent the systematic collection of data on, e.g., intra-team activities, but this should be readily solvable.)

Third, the discussions of the post-game Plenary Critique Session—a general debriefing for all participants—were recorded by a court stenographer. A full account of this material is thus available, and represents a potentially fruitful vein to mine further. (In future the Critique agenda can be more carefully prepared with a view to probing for particular answers to questions that can best be dealt with at that psychologically crucial stage.)

Fourth, following the game each participant was given a Questionnaire to be completed at his leisure. Of these 88% have been returned and provide a valuable basis for analysis of both the participants' reactions and their suggestions for improvements in the technique.

Finally, a single analyst has fruitfully explored the "tree" of decision-making which the game comes in the end to resemble. Basing himself mainly on the Game Documents, W. Edward Cushen of Case Institute prepared for the DAIS project a systems analysis of the individual games, as well as an overall assessment based on the choice-points
identified and the alternatives discarded. This promising technique merits refinement in future games.

A special word is in order about the introduction in 1960 of the military capability to what had been essentially a civilian exercise. One limitation—among many—on purely political gaming had been the need to keep the chosen crisis within the realm of diplomacy, since the outbreak of "war" would end the game (whatever its other unpleasant consequences). Manpower and planning tended to be focused either on a diplomatic crisis situation—the typical game played in the universities—or on a military hostilities situation—the game emphasized by military researchers and the armed services. But the political analysts wished for some manageable way to deal with the outbreak of hostilities without terminating the game, and some of the service schools felt that the "scenarios" with which their limited war games started were politically inadequate.

It has been found extremely helpful to assign a professional military officer as advisor to each team and to Control as well. Each has the function of providing, in rough, the kind of military advice each side would be likely to get in the real-life situation. In addition, if the game runs into a combat situation they are prepared to sit down together and make a reasonably quick estimate of the military situation on D plus 1, D plus 3, etc., without requiring complete intelligence estimates, detailed order of battle information, and so on. In this way, if the developing logic of the situation being
simulated leads one or the other side to commit military forces, the process of political decision and diplomacy can take account of military developments as in an actual situation. The new situation is redefined in military terms, enabling the players to proceed to new political decisions.

III. Implications for Policy

The questions raised by the use of gaming for serious policy purposes are almost self-evident. Can Americans, however knowledgeable, really simulate the actions and reactions of people bred and trained in wholly different cultures or steeped in hostile ideology? Can reality ever be reproduced or even approximated under laboratory conditions, however skillfully attempted? Does what happens in a game bear any provable relationship to what will happen in real life?

The answers to these questions vary. The first one, on the evidence, can be answered with a qualified affirmative (but it would be obviously fascinating to run a game with real Soviet officials simulating the reactions of the U.S.S.R. to some potential crisis!)

The answer to the second question is that of course reality can never be reproduced exactly. But in gaming, as in any intellectual undertaking, reality is represented by a model that reduces to manageable proportions the naturally infinite number of variables. The relevant question is whether this particular model teaches one things
that other models of reality--whether pieces of paper, discussions, or single-minded cerebration--do not. Our impression is that on some issues--but not on all--it looks to come closer to "reality" than other methods.

As to the third question, there is no way to connect up the events of the game with the future until the future reveals itself. The interesting point here, however, is that within this obvious limit the game may illuminate better than other methods some possibilities regarding the future that have not been examined in such depth before. For example, in some situations involving major policy choices the alternatives are not really infinite; they might even be limited to "yes" or "no." In such cases much can be learned about the factors that enter into those two choices and about the kinds of reactions that might be expected on the part of allies and opponents, Congress and public opinion, State Department and military services, intelligence community and scientific advisor.

Beyond this, an exercise can supply useful information about policy alternatives that have not hitherto been tested, by exposing those options to simulated reactions and thus eliciting some of their potential effects. Another particular value derives from studying the choice-points that arise to confront the policy maker in the life of a given strategy, and the possible consequences to be expected from each "branch," developing one or more to their logical conclusion. As Ithiel de Sola Pool has put it, the game does not create new
knowledge of the world, but it does supply a unique way to put existing knowledge to work. Above all, it forces the "worst" into contingent planning. If conventional research and planning have always sought to do this job they cannot do it in precisely this way, and gaming is thus a useful adjunct to both.

Role-playing should not be misunderstood as requiring faithful emulation of the policy-making style of a given statesman or politician under given constraints. For the teaching purposes discussed later, this form of role-playing may be most instructive. But in the policy-type game each team is usually free to choose the broad strategy it wishes to follow, within the limits of plausibility, adopting an "optimal" strategy which is not rigidly confined to actual past strategies of their assigned country. Freedom to adopt an "optimal" strategy does not, however, release the team from the requirement to evolve a strategy which is plausible given the constraints imposed by vital national or ideological interests. In earlier games it was specified that the Soviet teams would play a "representational" strategy, duplicating as best it could the responses of current Soviet policy makers to analogous situations. In the DAIS games the U.S. teams were free to be as imaginative as desired, unconfined by particular images of likely response based on past performance by known political figures.

It might be mentioned, parenthetically, that M.I.T.'s games, while mounted so far in connection with various Government-sponsored
research studies, have been unclassified. At the same time we felt it essential to protect the privacy of the participants, particularly those occupying important positions in the Government, who ought under no circumstances to be identified publicly with either the roles they played or the outcome of particular games; nothing could more quickly put an end to this promising area of collaboration than a sensational and invariably misleading news story that puts two and two together and in this case gets five. The specific country or region chosen as the site of a hypothetical crisis has in some cases also not been deemed a useful topic for public discussion because of the possibility that such an exercise might be misconstrued as actual contingency planning.

But it is possible to suggest the types of policy inferences one can derive from a series of games, inferences which may well represent the "sharpened perceptions" referred to above, strikingly brought into focus and underscored by the game experience. Five examples from an analysis by Bloomfield of the POLEX-DAIS series are illustrative; the conclusions are of course entirely his own:

In general, it appeared that an international military force (IMF) can be helpful to both U.S. and general peacekeeping interests in the present world; in Stage I of General and Complete Disarmament (GCD) an IMF appears somewhat more indispensable than at present; in Stage II it verges on being indispensable if the action is a considerable distance from the U.S. power base. The games' investigation of altered U.S. strategic "reach" in a disarming world indicated that while U.S. naval and sea power can still be projected with
relative ease through Stage I, in Stage II it pinches. In the Stage III game U.S. residual power appeared adequate to deal with a single hemispheric crisis but U.S. relations with "client" states elsewhere would certainly have to alter radically, and international military and political action substitute for it. On balance, Stage II looked more attractive than Stage III in terms of a responsible U.S. capacity to act, even marginally. U.S. disarmament planning might well consider whether an appropriate plateau for the GCD process can be found somewhere in Stage II, and how to structure the GCD process so that terminal points can be established in equilibrium without endangering the entire process.

The games demonstrated that if international forces are going to be used for such politically delicate operations as racial war in Central and Southern Africa one quickly runs out of neutral countries or forces of the right national complexion (which may argue for reconsidering the desirability of an internationally recruited police unit). The African game (like the real-life Congo) emphasized the Secretary General's problems of internal authority, specifically his ability to discipline units which become ideologically committed to one side or the other in a civil war situation. It also suggested to some the desirability of looking again at a regionalization of peace-keeping arrangements in order to avoid some of the complications of policy escalation, as it were, in a highly complex internal situation.

In the games there was less concern for escalation than today. The Soviet teams in the advanced stages of disarmament reported that they felt less constrained, thanks to the absence of American forces in Europe and the general diminution of strategic power. But the several U.S. teams estimated that they were not particularly disadvantaged by a disarmament agreement as they viewed their strategic options; their view suggested that a new equilibrium had been established
in the world by GCD, embodying a system which was possibly less dangerous than that of the past.

The policies of 'small countries' in the games suggested that there may develop a highly emotional opposition to General and Complete Disarmament which perhaps has not been thought through by American policy makers. States such as Israel, Turkey, etc., which will be drastically affected vis-à-vis their neighbors may turn out to be bitterly opposed to the point of having to have GCD literally forced upon them if it ever comes about.

One of the major surprises was the unexpectedly active coalition that developed between the Chinese and the Russians. This was a consequence of the absence of overriding Soviet interests in a region where there was no real need for Soviet military assistance in order for the Chinese to be able to proceed. The possibly temporary harmony of interests was also due to Soviet ability in the game to be helpful to the Chinese at the U.N. But the Soviet team was quite clear that coordinated policy in this crisis was possible only to the extent that the Chinese acted cautiously in recognition of the dangers inherent in a Sino-U.S. confrontation, and hoped the Chinese would thenceforth be less critical of the essential Soviet policy of conflict-avoidance.

IV. The Educative Uses of the Policy-Type Exercise

So far the discussion has concentrated on the professional use of this technique for policy research. But the teaching and training possibilities of this method may actually outweigh its obviously moot "predictive values."

One highly promising use is to teach students of international relations and foreign policy more about the process of making and
executing foreign policy than they can learn from books or lectures. At its best, it brings more formal learning material into extraordinarily sharp relief. Colleges and universities such as M.I.T., Columbia, West Point, the Air Force Academy, and others have in recent years used political games in both undergraduate and graduate courses, with considerable success.

Another use of potential value is to help train military and diplomatic officers at a more senior level, by having them act out the stresses and strains typical of real-life crisis diplomacy, the decisions made under pressures of time and events, the unexpected overturn of established plans, the necessity for evaluating a multitude of factors and of having available alternative courses of action. Gaming here is intended to highlight the complex of factors, subtle and otherwise, that weigh in on the policy man, but which are not always apparent in the neat strategic plan, the routine policy paper, or the self-assured theory. It is hard to think of a better short-run device for the field grade military officer who with increasing rank will face growing involvement in diplomatic situations, an involvement for which his academy training, his years with the troops or the fleet, his correspondence courses, and his professional readings have inadequately prepared him. In an attempt to fill this serious gap, some American service war colleges, through which the officers eligible for high command pass, have begun to look at gaming with a
primarily political emphasis as a way of making better use of limited training time on this range of issues.

The diplomatic trainee can also benefit from practice runs, so to speak, through a variety of crises involving global or regional or individual country situations for which he might one day have policy responsibility. Some persons responsible for such training have registered growing interest in experiments along these lines.

But the senior policy-type game itself, not designed as a training device, has proven to have educational value, even raising the question of whether this, rather than anything else, may not actually be the principal "payoff". If so, one may legitimately ask whether it justifies the effort involved. For wholly apart from the policy lessons, the participants' questionnaires reveal that a uniformly high value was set on the special benefits the games provide to responsible officials and, to a slightly lesser extent, scholars, in their real-life roles, particularly in sharpening professional perceptions about the sorts of alternatives that could arise about a region or a family of crises which a particular game epitomized. The responses of military officers was, interestingly, the highest in this respect. Many among the latter have commented that this variety is uniquely useful to train senior officers in the sophistication of modern crisis diplomacy, with its richness of non-military as well as military factors.
Leading specialists on Soviet policy have come out of an M.I.T. game with strikingly fresh ideas about their specialty, including such things as an early awareness of the detailed constraints imposed on Soviet policy-making by the communist alliance system, and the conditions under which a Sino-Soviet rapprochement might surprisingly take place. Senior American policy-makers who have taken part in simulation exercises have been struck by the extraordinary difficulty encountered in communicating seriously meant intentions to one's opponents in a fully convincing way. This difficulty arose under "laboratory conditions," but it mirrored some comparable problems in real-life diplomacy.

In fact, the only sure value of the political-military exercise may be the not inconsiderable one of providing not only students but responsible scholars or policy-makers as well with one or more crucial lessons not learned before, indelibly recorded in an important personal experience.

V. Some Problems for Future Research in Gaming

A number of problems for further research on the application of gaming to foreign policy problems have emerged from our discussion of past experience; others are equally worthy candidates for study. We plan to undertake a modest program of further political-military gaming during 1963-4, combining a substantive focus on problems of deterrence with an equally compelling research objective of consolidating and mak-
ing more explicit and systematic the theoretical aspects of this gaming technique. Some of the more interesting problems for gaming method and theory that belong in such a research agenda are discussed below.

Nearly all participants remark the highly "realistic" nature of the exercises, but as noted earlier these games represent a considerable abstraction from reality. Further work is required to identify more specifically the sources of this sense of "realism." Experimentation has shown that it does not depend on such "atmospherics" as surrounding players with such appropriate national symbols as flags or pictures of Lenin; play can occur in bare rooms containing only the essential reference and writing materials.

What are the effects on realistic simulation of the degree of participants' involvement in an assigned role, their conscientious professional interest in the subject matter of the game, or their enjoyment of a game for its own sake? These three modes of involvement should be investigated to determine if they lead to decisions which occur in games but not in actual political-military crises. Thus, the man who cannot become absorbed by the assigned role may easily produce responses inappropriate to that role; the man who remains uninvolved in the subject matter may lack incentive to consider the full range of alternatives, and the man who plays only the game itself may be tempted to accept higher risks than he would if the situation were real.

In this general connection the extent of role involvement might be experimented with, drawing out and reintroducing the "control rods,"
as it were, to keep the role-playing effect alive but still being able to consult and discuss out of role as appropriate. It should be remembered that, unlike student games in which role-playing may produce the desired pedagogic result, the professional games aim to produce insights into courses of foreign policy action that the United States might one day face. Role-playing here is strictly a means to an end, not an end in itself. The game might even be stopped after each move and the decisions analysed before going on. Alternatively play might end when one side had identified all the alternatives open to it at a given choice-point without waiting to see "how it came out." Or it might be decided to stop and replay a given move with different strategies, if that seemed a more productive course.

One unresearched phenomenon observed in the previous Center student and professional games--and common to all of them--has been the high degree of consensus among team members that their team had "won" or had "come out better" than their adversary or an opposing coalition. A tendency to euphoria permeated many teams as they began to play out their initial strategy, remained despite setbacks, and even persisted into the post-game Plenary Critique Sessions when the teams' assessments of outcomes were made explicit.

This unanticipated situation was as striking as it was consistent. Although each game realistically yielded a clear non-zero-sum outcome, it was almost as if some participants perceived themselves in zero-sum situations. This was so even though the generally held concept of
international relations on the part of participants was that one side's gain is not necessarily another's loss, or, put differently, both may win, or both may lose. Although this point also should be a commonly recognized inference from non-zero-sum game theory, it does not appear to be generally applied in the literature on international relations, arms control, or deterrence strategy.9

We would suggest one simple hypothesis to explain this phenomenon: that the game world does mirror the real world insofar as the goals and strategic policies of opposing groups usually overlap to some extent. In those areas where goals and policies of antagonistic parties are not mutually exclusive, leaders of both groups are rationally entitled to observe progress and claim success. However, they cannot logically claim that such progress is gained at their opponent's expense. This later claim is logical only in situations where adversaries are competing for mutually exclusive objectives. Yet in the games, as in life, governments often enter such illogical

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9This point tends to be by-passed by writers on deterrence strategy through stress on competitive strategies. See, for example, Thomas W. Milburn, "The Concept of Deterrence: Some Logical and Psychological Considerations," Journal of Social Issues, v.17, no.3 (1961), p.4.
10 Similarly, even persons playing in non-zero-sum laboratory games often adopt zero-sum strategies rather than reach the mutually profitable bargains which are there for the taking. The need for further research on this point is expressed by Richard C. Snyder and James A. Robinson, National and International Decision-Making: Toward a General Research Strategy Related to the Problem of War and Peace (New York: Institute for International Order, n.d. /ca.1961/, p.164. They suggest that decision-makers may "define the structure of decision-making situations differently from the way theorists do."
and contingency plans, and then have adhered to this false reading despite further inputs of contradictory signals from both the other teams and Control. This perhaps results from human tendencies to optimism, to denial of the unpleasant, and, in a more precise operational sense, to blocking out relevant information in a mounting crisis situation. This particular type of misperception is closely related to the faulty assessments of wins and losses discussed above, and probably closely simulates international crisis management.

A second source of misperception of communications can be attributed directly to the artificial aspects of the game. For example, the compressed time period of the crises and small size of teams seems to result in a less-than-realistic volume and variety of relevant information and staff evaluations reaching the top policy-making echelon within teams.

A third source of misperception of messages can be attributed to administrative errors. These resulted either from faulty messages that were constructed in haste or from the failure of control to be

11As Milburn, loc. cit., states: "There is evidence that periods of heightened tension or crises, lead to (and have led to) a simplification of cognitive structure, to a reduction in the number of goals and the number of perceived alternatives, as well as to frustration-produced aggression." For an empirical study demonstrating the impact on cognitive structures of various intensities of crisis in the internation simulations at Northwestern University see Michael J. Driver, Conceptual Structure and Group Processes in an Inter-Nation Simulation, Princeton, N.J.: Princeton University and Educational Testing Service, 1962.
responsive to all requests or needs on the part of the teams for follow-
on intelligence. Fortunately, these types of misdirection seemed to have produced only insignificant alterations in the course of the games played so far.12 Another type of confused communication occurred during the last game in the series when the Soviet team was misled into believing the U.N. team to have allied itself with the U.S. team in an operation that could only disadvantage Soviet interests. This resulted from the policy of Control in this game of withholding from the Soviet team certain key U.N. messages and substituting summarized versions which inadvertently altered the message intent. All of these administrative errors should be readily eliminated in the future by a combination of additional pre-game briefing of both Control and the team Rapporteurs, as well as more explicit provisions for making a member of Control responsible for preserving the continuity of secondary threads of events.

Another promising area for research involves the possible effects on game outcomes of varying the quality and experience of the persons selected to play. For example, it might prove fruitful to use non-Americans in teams to avoid the possibly significant predispositions of culture-bound Americans.13 It would be interesting to

12 This was confirmed independently by the participants, the Game Historian's summary, and the systems analysis by Professor Cushen.

13 Snyder and Robinson, op. cit., have similarly emphasized the need for such cross-cultural research in international decision-making.
observe foreign officials "role-play" the strategy of their nation. Similarly, it would be instructive to interchange roles--Russians on a U.S. team playing opposite Americans on a Soviet team--to explore the efficacy of this technique for teaching mutual perceptions of the constraints that operate on one's adversary.

All these phenomena deserve high priority in further research. Although the richness of uncontrolled variables characteristic of this particular gaming technique does not allow definitive identification or control of all of them, it should be possible to generate promising hypotheses about some which could then be tested by the laboratory-type small-group experiments which are expected to be an adjunct to the next series of games.

VI. Conclusion

How then can we sum up? The art of the political exercise is in its infancy, but it is a modestly promising infant. While it is not a magic shortcut to knowledge of the future, neither is it purely social science fiction. It can be very expensive in time, manpower, and money to organize on any substantial scale; but it can also be done for virtually nothing, requiring only willing--and able--participants. In a time when nations--and individuals--are communicating more but understanding the messages less, it can be only helpful to get a glimpse of ourselves as others see us, or of others as they may see themselves.
It is quite clear from the POLEX-DAIS games, as well as seminar experiments, that this gaming technique can be applied with special benefit to the field of disarmament and arms control. Gaming is particularly relevant there because agreements about limiting armaments, if they take place, will occur in an environment that by definition differs from the one we now live in. The game technique is a particularly good way to move people from the present to a different political or arms environment, setting a hypothetical situation and requiring them to act in ways consistent with it. This could yield important values in our understanding of how to plan ahead.

It was suggested earlier that possibly the most crucial feature of this enterprise is the way it requires the players to live with the implications of their chosen strategy. For compared with what happens in a planning operation around a table, or in the brain of a single individual, however gifted, the game sets up a process that by its nature produces a dynamic sequence of actions and responses and counter-actions. This sequential process proceeds under a momentum of its own once it is set in motion, and can go in quite logical and plausible directions not always foreseen. A kind of dynamic chain reaction takes place well beyond the capacity of a single mind to anticipate. The reason for this takes us back to the role-playing itself, for the heart of this process is the interaction of antagonistic wills; the same effect can be produced solo only by a schizophrenic.
For all of these reasons, the political-military exercise may be rated as excellent for training, useful for teaching and potentially valuable--within limits that have been only tentatively probed--for policy research and planning.