In the decade that followed World War II, the uncertainties of the cold war and 'the bomb' gave birth to a new kind of interactive exercise. Referred to first as 'crisis games' and then as 'political -- military exercises', they presented the participants with an international crisis in the form of a scenario. The participants, representing officials of different countries, attempted to resolve the situation with minimal negative side effects and consequences within the constraints established by the rules. In these exercises, resolution of the problem required negotiation and compromise - key elements in the development of foreign policy.

These exercises indicated the potential of simulations in which participants could experience the rapid unfolding of events and the pressures for quick decision-making that a crisis precipitates. However, decision-making in the exercises proceeded slowly. The analysis of policy rather than the experience of developing rapid responses to an impending threat was the focus. Thus, the development of crisis-management simulations remains, for the most part, an unexplored topic.

OVERVIEW

The crisis-management simulation is an exercise in which teams of individuals allocate resources in an effort to avert or minimize an impending threat or danger to a business, social service, industry, or a social, economic or political system. Issues germane to the design of crisis-management simulations are the characteristics of the original 'crisis games', the nature of crisis situations and the essential characteristics of crisis-management simulations.

Early developments

The first ‘crisis game’ (so-called by early developers) was designed by Herbert Goldhammer, a social scientist at Rand Corporation. Known as ‘The cold war game’, the exercise addressed international crises in the context of the threat of overt hostilities between the USA and the USSR.

‘The cold war game’ was soon followed by a series of exercises developed at MIT by Lincoln Bloomfield. Referred to as ‘Polex’.

Although these early exercises were referred to as crisis games, their main goal was policy analysis. That is, in most cases, the initial crisis merely served as a catalyst for the development of policy. These simulations were viewed as having the purpose of intellectual collaboration. The most valuable feature was the verbal or written discussion of political problems that developed during the exercise.

Recently, some policy analysis exercises have been developed and implemented through computer networking. Participants in various countries receive messages
from Control and send messages in return by electronic mail. The conferencing capabilities of the system make it possible to bring sets of teams together in real-time interactions. Because the participants are drawn from around the world, the issues and complexities that arise reflect the characteristics of current international political realities.

Like the early foreign policy exercises, one purpose of the computer networking exercises is that of policy analysis. Another major interest is that of underlying questions of international relations theory. Therefore, these exercises do not purport to represent crisis exercises in terms of participants experiencing the threat, tension and escalating time pressures associated with a crisis.

The nature of crisis situations

Designing or evaluating a crisis simulation depends in part on an understanding of the differences between a crisis and other problems or tasks. Some analysts define the term ‘crisis’, which comes from the Greek krinein (to separate), as the critical turning or branching point in some human activity. This usage is common in the medical field, in which references are made to the crisis point in a patient’s battle against a life threatening or debilitating disease.

The difficulty in relying on the concept of a turning point as a definition is that often the critical moment cannot be determined until after the crisis has been averted or terminated. In the 1962 Cuban missile crisis, for example, the US government discovered that the Soviet Union was building missile bases on Cuba, which is 90 miles from the US mainland. The critical moment was the US establishment of a blockade on Cuba which prevented Soviet ships from delivering their cargoes to the island. Following that turning point, bargaining took place which resulted in several agreements. Moreover, after the blockade, the perceptions of each adversary of the other became less charged with negative affect. However, until the situation came to an end, the particular turning point or decisive moment could not be identified.

Similarly, in the 1991 failed coup by Soviet communist conservatives, the critical moment occurred when KGB troops did not follow orders to fire on Russian citizens defending the Parliament building in Moscow and the Russian president. However, this critical ‘turning point’ was identified only in post-coup analyses of the events.

Another approach to defining a crisis is to determine the essential characteristics of a crisis situation. Analyses of various foreign policy situations indicate that certain traits or characteristics are common to situations identified as crises. Included are the need for action decisions, a sense of threat perceived by the decision-makers, an increase in uncertainties, urgency and time pressures and a sense that the outcome will shape the future. In other words, decision-makers perceive an impending danger accompanied by a sense of limited time to ‘stop the runaway train’. These traits, however, describe the reactions of decision-makers to the situation; they do not describe the nature of the crisis itself.

Three traits imbedded in the situation denote a crisis. Specifically, a crisis a) threatens the high-priority goals of a decision-making unit; b) restricts the time available for reaction before the situation is transformed; and c) surprises the
members of the decision-making unit when it takes place (Hermann, 1969, p 29).

The third characteristic, surprise, does not refer to the lack of routinized procedures for addressing the situation. It merely refers to the lack of awareness by decision-makers that the situation was about to occur. For example, nuclear power stations maintain exact replicas of their control rooms for use in training. Workers placed in the replicated control room may be faced with any combination of a variety of warning signals and readings (programmed into the computer that is directing the exercise). The readings indicate a threatening situation in which limited decision time is available for correction. Although routinized procedures exist for addressing such emergencies, the situation evokes surprise because the workers are unable to predict the particular emergency in advance.

These characteristics of a crisis situation rule out extended strategy planning as a means of resolving the situation. Instead, decision-makers must accurately assess the situation as quickly as possible while they are also considering ways to apply available resources. The third step, the allocation of resources, is also accompanied by periodic re-assessment to determine whether changes in response are needed.

**Types of crisis situations**

The various ways in which the basic steps of crisis management are executed depend in part on the scope and nature of the particular crisis.

First, the crisis may be local, regional, national or international. For example, natural disasters, such as floods or tornadoes, may be local or regional in scope. Epidemics, such as cholera, may range from local to international. The implication for designing crisis-management simulations is that the broader the scope of the problem, the greater the number of variables that will influence the situation in unpredictable ways.

The nature of the crisis, in terms of implications for design, may be determined by classifying crisis situations by the characteristics of threat, decision time before the situation changes and surprise. Each of these characteristics may be viewed as a continuum in which a crisis situation may be located. That is, situations may vary from low to high threat, low to high degree of surprise and brief to extended time for decision-makers to avert or alleviate the crisis.

For example, the AIDS epidemic, an ongoing crisis, is viewed by medical researchers as a high threat to the goals and well-being of society. This crisis was also predictable (low surprise) when the nature and virulence of the disease were first discovered.

However, the AIDS epidemic is not viewed as a high-threat crisis by all groups in society. The funds and resources allocated to education and other efforts to stop its spread indicate that, compared to other problems, AIDS is perceived by governments as a moderate threat to society as a whole. The implication of these different perceptions for the design of crisis-management simulations is that decision-making roles must be selected carefully. That is, the crisis presented in the exercise cannot be perceived by the decision-makers in the simulation as a
low-threat situation.

In addition to the three basic dimensions, crisis situations are also characterized by incomplete and/or distorted information. Managing natural disasters such as floods or earthquakes, for instance, is accompanied by confused information from several sources. In other crisis situations, essential information may be lacking. For instance, a hospital autopsy report may suggest (without proof) that tainted antibiotics are a likely cause of the complications in two deaths.

**Characteristics of crisis-management simulations**

Like the diagnostic simulation, crisis-management simulations also have an opening scene, participant requests for information, actions taken by participants and reactions to participant decisions. However, there are several differences between the two types. First, the situation presented in the brief scenario in the crisis-management simulation is perceived as a threat by the participants. For example, in a natural disaster, citizens' lives are disrupted and the normal life of the community becomes dysfunctional. Community leaders are threatened if some tranquility and degree of normality is not quickly restored. Similarly, a computer malfunction in a stockbroker's office threatens loss of clients for the company if not detected and corrected quickly.

A second difference is that the time available for data-gathering and applying solutions is severely limited in the crisis-management simulation. Without an adequate response by the decision-makers, the crisis will become more acute and/or extensive. A resolution may be needed in minutes, as in a nuclear power reactor, or it may span a few weeks (in simulated time) if the situation is one in which the consequences of some participant decisions are not immediately known. In a natural disaster that produces disease and death, for example, these consequences will continue beyond a few days.

Third, to be effective, a crisis-management simulation should produce the same reactions and feelings in the participants as the experience of handling a crisis in their everyday lives. Included are tension, uncertainty, time pressures and a sense of inadequate information and frustration. Therefore, the crisis selected for the simulation should not be one perceived to be a low-threat, low-surprise event that may be resolved over a period of time.

Crisis-management simulations are typically open-structure exercises in which a team addresses an impending emergency. An example is the simulation which addresses the complexities in managing relief operations after a natural or industrial disaster.

Examples of closed-structure simulations are the control room crises used in nuclear power stations. The computer program initiates any of several emergencies by changing the readings on key indicators. The program also responds to worker actions by further changes in the settings. These simulations are used both for training and assessment.

Crisis-management simulations in which the participants interact exclusively with a computer are not recommended. The problem is, of course, maintaining reality of function for the participants. Computers are not the root cause of crisis...
situations (unless, of course, they crash). Thus, the possible disadvantages of a computer-delivered exercise for crisis-management simulations are a) the lack of interaction among decision-makers; b) the false sense that time is not a variable; and c) the possibility that the exercise will be perceived as a game.

Crisis-management simulations may be used in a variety of settings. However, an important role for these exercises is yet to be fully realized: that of providing opportunities for students in a variety of subject areas to experience the complexity, tension, uneasiness and the sense of inadequate information that accompanies resolving a crisis in any setting.

In other words, real-world problems do not present themselves in textbook form. Instead, they often disrupt an important process or activity and information about the probable circumstances may be sketchy. For example, an important skill in computer programming is to be able to ‘debug programs. Creating a situation in which a small stockbroker company is about to lose clients through the malfunctioning of its computer system establishes a non-textbook crisis for programmers and accountants to resolve.

MAJOR DESIGN ISSUES

Several issues are important in the design of crisis-management simulations. Included are the differences between social situations and crisis management, the design of simulation components and the interaction of those components to produce tension and a sense of threat in the participants.

Social situations and crisis management

When considering a social or political framework as the setting for a simulation, the designer should be clear about the purpose. That is, is the emphasis in the exercise resource allocation to avert a crisis or the insights to be gained by participants through negotiation and interaction with other participants representing states, provinces, or countries as they attempt to achieve their goals? If the answer is the second option, then the exercise is intended to be a social-system simulation, not a crisis-management simulation.

This decision is critical, because the designation of roles, the interactions of the participants and other factors are executed in different ways for the two types. If the decision as to type cannot be clearly made, the result can be an exercise that is not successful in meeting the goals of either type.

Consider the situation in which the selected crisis situation is a computer malfunction in a stockbroker’s office. The malfunction jeopardizes sales and trading opportunities and threatens the loss of clients through the company’s inability to provide accurate information and to respond to client requests. The exercise may be developed as a crisis-management simulation, for example, if the purpose is to restore customer confidence quickly. Available resources include print-outs of the previous week’s transactions for each sales person and a listing of the computer commands in the programs that encode, transform, store and retrieve the data entered by the employees. In addition, the decision-makers selected to address the problem are accountants, sales representatives and computer programmers.
In contrast, the simulation becomes a different type of exercise if the basic elements are changed. For example, the goal may be altered to that of identifying a culprit responsible for the malfunction. The president of the company, the head of the accounting department and the sales manager may be added to the group of participants. Added to the available resources are the employee time records for the previous week. These key changes alter the exercise into one that is highly charged with the potential for conflict among the participants. It is no longer the allocation of intellectual and/or material resources to resolve a crisis for the company.

Another example of an exercise that failed to produce the intended effects is one in which ninety students, drawn from two undergraduate classes in political science at the University of Wisconsin participated in the exercise. The students represented 5 to 6 officials of 8 countries and 45 US officials (all major foreign policy-making offices, an 11-person Congress and a 9-person CIA).

The ‘crisis’ in the foreign policy exercise was that Iraq was attempting to force Syria out of the United Arab Republic. However, the students summarily dispensed with the conflict in order to be free to follow their own designs. In other words, the ‘simulation’ became a role-playing freewheeling exercise. Some players, for example, complained about the time required to read the world newspaper, which contained important information about new events impinging on countries in the simulation. Instead, they could scarcely wait to ‘get back in the ring’ of negotiations.

Several factors contributed to the implementation problems of the exercise. First, the exercise followed the format of the early foreign policy exercises -- long planning periods followed by a single move by each team. The college students, unlike state department officials, had little incentive to explore the finer points of foreign policy development within this structure.

Second, the so-called crisis situation was not a threat to the major decision-makers. Negative effects to the USA were not perceived as escalating from the situation. Third, part of the implementation difficulties were also attributable to the lack of contingencies in the exercise for different participant behaviors. That is, failure to attend to an important action by another country should have resulted in at least minor negative consequences.

**Establishing the crisis climate**

An effective crisis-management simulation is achieved through careful attention to several factors that contribute to a climate of crisis. In addition to selecting a bona fide crisis situation, other factors are the decision-making roles and simulation events that contribute to an increasing sense of urgency for the participants.

**The selected crisis**

The ‘ideal’ combination of characteristics to establish tension and uncertainty initially is a high-threat, high-surprise situation that must be resolved fairly quickly to avert disaster. For example, a train loaded with toxic chemicals reports that the brake system has failed and it is headed for a large city in a valley at the foot of a
mountain. The decision-making roles selected for the exercise are those of members of a disaster management team.

The scope of the crisis is also important in the design of a credible exercise. Crises limited to a particular locale, such as a business, a school or a hospital are accompanied by a restricted set of potential roles likely to be involved in resolving the situation. As the scope of the crisis expands, i.e., community, region or nation, the developer is faced with the problem of an increasing number of decision-makers that may interact with the situation and an expanded set of variables that may influence the situation in unpredictable ways.

One solution is to propose a crisis with a potentially broad impact that is known only to a few decision-makers. For example, a hospital administrator and the department heads have been informed that two patient deaths may be the result of complications induced by tainted antibiotics. In the simulation, the reactions of members of the board of trustees and others who learn of the crisis may be handled in the form of messages to the hospital staff.

The decision-makers Roles should be established for participants in which they directly experience the effects of an unresolved crisis. In other words, selecting roles with power and prestige is not sufficient to ensure that participants will experience reality of function. Therefore, the decision-makers should be those individuals that clearly have a vested interest in the outcome. ‘The situation threatens their goals, it surprises them, and it is they who are faced with a short decision time’.

An example is a scenario in which a country is facing a trade embargo from an industrial competitor in the world market. The crisis threatens jobs in shipping and industry as well as the loss of the next election by the party in power. In such a situation, the minister of trade, the prime minister (accused by the opposition party as the cause of the problem) and their advisors are likely to become involved in deploying resources to resolve the crisis.

Events in the simulation Like the team diagnostic simulation, the crisis-management simulation is an open-structure exercise. Therefore, some organization and sequence should be imposed on the simulation by the designers.

The early foreign-policy exercises made use of a control team that reviewed actions to keep the teams on course and which also masterminded other events to take place in the simulation. The use of an omnipresent control team, however, is not recommended because it detracts from reality of function for the simulation participants.

Instead, the elements described in Chapter 5 for diagnostic simulations may be used to provide periodic input in crisis-management exercises. They include one or two peripheral roles taken by members of project staff, messages from others, staff-initiated events and subdividing the time period into ‘days’ or ‘hours’. However, other elements are also necessary to produce the ‘run-away train’ effect essential to a crisis-management simulation.

The management of time is particularly important to enhance the sense of threat.
The developers of Atlantis, a disaster-management simulation, divided the time into three phases. Phase 1 is the period immediately after the disaster. Participants are gathering and organizing information about the event and establishing the availability and location of resources required to meet the crisis. Phase 1 runs in real time because participants are receiving more information than they can handle.

In phase 2, distinct time periods are used to represent 24 hours of real time. Also, as phase 2 progresses, these time periods become shorter. One purpose is for participants to experience the consequences of any errors in preventive action in the early ‘days’ of the exercise. That is, injured and ill individuals who did not receive treatment in the early days begin to die. Phase 3 introduces logistical problems and the integration of foreign relief contributions with national resources.

Another important factor is incomplete or distorted information. Depending on the nature of the crisis, broken communication lines that result in incomplete data may be appropriate, or two ‘teams’ responsible for assessing the situation may be submitting conflicting reports to the participants in the simulation. Meanwhile, participants are receiving urgent messages from officials and others to resolve the situation quickly.

A third factor is that some influences in a crisis operate in concert while others are in conflict. In the crisis involving tainted antibiotics, for example, the urgent need for information on antibiotic supplies on the different floors and in the pharmacy conflicts with the need for preventing panic.

Providing a complex problem with decreasing time to solve it is not sufficient to label an interactive exercise as a crisis-management simulation. An example is The Crisis. In the middle of a class lecture or discussion, the instructor announces the occurrence of a ‘crisis’. Students are divided into groups of 5-10 and given information packets. They are instructed to develop a policy recommendation within a specified time frame, typically 20-30 minutes. Then the instructor, over the next several minutes, interrupts the group at different intervals from 1 to 5 minutes with new information. The information either affects the stated crisis or is irrelevant. Then when 5-10 minutes remain of the original time frame, the instructor announces that an emergency press conference is scheduled in 5 minutes and recommendations must be completed at that time. The instructor announces the remaining time at 30-second intervals. At the conclusion of the exercise, each group chooses a spokesperson to present and defend the group’s policies before the class.

This exercise is useful in undergraduate international relations classes for illustrating some of the aspects of decision-making in foreign policy. The participants are faced with time pressures and inadequate information as they develop their recommendations. However, the participants are not managing a crisis. They are simply developing recommendations for government policy. In a crisis-management simulation, participants experience the consequences of their decisions as they attempt to manage a situation that borders on being out of control.

Moreover, reality of function in a crisis-management simulation also depends on
the sense of threat experienced by the decision-makers which includes more than increasing time pressure. Finally, events in The Crisis Game that precipitate the sense of time pressure are all clearly arbitrary and each is announced by the instructor. In a crisis-management simulation, events evolve from the nature of the crisis itself and the decisions made by participants.

Crisis-management simulations are not easy to design. Developing events that create the appropriate climate requires attention to several factors, all of which interact to produce the desired effect.

EVALUATING CRISIS-MANAGEMENT SIMULATIONS

Step 1: Analyze the crisis situation.

- Do the background information and opening scene convey a sense of extreme urgency?
- Does the crisis specifically threaten the decision-makers in the simulation?
- What is the scope of the crisis?

Step 2: Review the decision-making roles.

- Are the decision-makers empowered to resolve the crisis?
- Is a role assigned to each participant that is not a spectator role?
- Is the crisis a high-threat situation for the decision-makers?

Step 3: Evaluate the dynamics of the exercise.

- Do the participants experience the effects of their decisions?
- Do events evolve from the nature of the crisis rather than arbitrary decisions by the director?
- Do the participants experience increased time pressure?
- Is incomplete or distorted information a factor in the exercise?
- Do events (such as those provided by peripheral roles) accelerated as the exercise progresses?