A Role for Simulations in Public Policy Disputes: The Case of National Energy Policy

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Consensus-building techniques have been used successfully to resolve many public policy disputes. A major obstacle to consensus building, however, is the unwillingness of disputing parties to come to the negotiating table. A relatively new method of accomplishing this is to invite the parties to participate in a simulation of the conflict they want to resolve. Such simulations are designed to show that policy deadlocks can be overcome if the disputants change the way they negotiate. In November 1988, the MIT-Harvard Public Disputes Program, in association with the American Energy Assurance Council (AEAC), ran the National Energy Policy Simulation. This 23-hour crisis simulation brought together many of the stakeholders involved in the national energy policy debate in the United States. Partly as a result of the simulation, the parties agreed to sponsor a far reaching effort to forge a consensus on a national energy strategy for America. The energy policy experience is evidence that simulations can help bring disputing parties together to resolve their differences. The experience with this and related simulations provides key lessons for subsequent simulation design.

KEYWORDS: *consensus building; dispute resolution; energy policy; game design; mediation; public policy disputes; simulation.*

There are numerous public policy conflicts in which the disputants cannot even agree on the general direction in which society ought to be heading. These debates are played out at the local, regional, national, and international

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levels, and they share one key feature: each group believes that its policy is best. The result is deadlock—and the public suffers because important problems are not addressed at all (see Van Horn, 1988). One method of breaking a policy impasse is mediation (see Susskind & Cruikshank, 1987). This and other forms of dispute resolution reject adversarial procedures because they cost too much, take too long, and usually leave at least one party unhappy—thereby setting the stage for even more severe conflict in the future. The goal of mediation is to transform win-lose policy confrontations into all-gain results (see Bacow & Wheeler, 1984; Carpenter & Kennedy, 1988; Forrester 1989; Susskind & Cruikshank, 1987; Ury, Brett, & Goldberg, 1988).

Although mediation can avoid many of the problems associated with conventional approaches to handling public policy disputes, a key difficulty in initiating such efforts is getting the contending parties to the negotiating table. A relatively new approach to accomplishing this is to invite the parties to participate in simulations of the conflicts they want to resolve. If they go well, such simulations demonstrate that impasse is not inevitable and that the interests of all sides can be met. Once the participants see that deadlock is not inevitable, their desire to work together increases (see Susskind, 1985). This article focuses on a particularly contentious public policy issue—national energy strategy—and shows how a simulation not only brought the various parties to the table, but also motivated them to participate in a full-fledged, national consensus-building effort. The success of this simulation confirms similar findings in related public policy situations in which simulations were used to help the parties see the advantages of joint problem solving.

Early Experiments with Simulations

Simulations have been used successfully by federal agencies, the business community, academia, and state and local government (see Bates, 1969; Becker, 1980; Bredemeier & Greenblat, 1981; Fraser, 1969; Goldberg & Van Opstal, 1988; Greenblat & Duke, 1975; Kringen, 1980; Nieswand, 1986; Schofield, 1988; Shubik, 1975). One group with extensive experience in designing and conducting simulations is the MIT-Harvard Public Disputes Program (PDP). The PDP has used simulations to bring together the parties in facility-siting disputes, Indian fishing rights conflicts, prison overcrowding disputes, and disputes over state housing policy.[1] For example, a simulation was used at the "Firstport Project: 2020 Foresight" conference in June

1984. The purpose of the simulation was to explore ways of responding to the conflicts likely to surround the construction of a proposed deepwater port (Firstport) in the Lower Delaware Bay, a project that had generated intense controversy for more than 20 years. The parties to this controversy included (a) developers who wanted to build Firstport; (b) affiliates of upstream ports at Philadelphia, Baltimore, and Hampton Roads, who viewed Firstport as potential competition; (c) environmentalists, who feared that the project might damage the bay; (d) the International Longshoreman's Association, which was concerned about job losses caused by a new containerized port; (e) federal agencies, which would be involved in the permitting, funding, and regulation of any new facility; and (f) governors of the states closest to the proposed site whose economies would be most directly affected.

The simulation paralleled the actual controversy. Thus, the six roles in the simulation corresponded to the six parties to the controversy. In the simulation, an industrial consortium (Harborco) seeks to secure a federal license to build a deepwater port. The licensing agency will not, however, grant a license until Harborco develops a proposal that is supported by at least four of the five other interested parties. Issues up for negotiation include the "industrial mix" adjacent to the port, the extent of environmental impacts permitted, hiring and employee guidelines, potential compensation to other ports, and possible federal subsidies. A unique feature of the simulation is its scoring system. Each of the players receives a confidential score sheet describing the value of various policy "packages." The score sheets also identify a "bottom line," specifying the number of points a proposal must generate to merit a player's support. The score sheets were developed to help the players act in a fashion consistent with their assigned roles. The numerical scoring system also enables comparison across different groups playing the same game, facilitating discussion about how different negotiation strategies and techniques can lead to better (or worse) agreements for different players (see Susskind, 1985).

Eighty people, representing the various interest groups involved in the Firstport controversy, divided into seven groups to play the Harborco game in 1984 (see Frump, 1984). Despite the potential for agreement, four of the seven groups were unable to reach agreement, in effect walking away from possible agreements that met all of their interests. During the debriefing of the simulation a number of lessons were highlighted, including the possibility that mediation might have helped the parties realize all possible joint gains.

In a related use of a simulation, a PDP-research team created the "Low-Level Radwaste Siting Game" for the Department of Energy (DOE; see

Rundle, 1985). The game was designed to assist the parties involved in conflicts surrounding the siting of low-level radioactive waste disposal sites. In the first part of the game (RADWASTE I), seven parties, including the Governors' Science Advisory Committee, moderate and radical environmental groups, the public licensing authority, the Association of Municipal and County Governments, a Native American tribe, and the Association of Radioactive Waste Generators attempt to devise criteria for evaluating possible sites for a low-level radioactive waste repository. In the second part of the game (RADWASTE II), six parties, including three towns, the governor, an environmental coalition, and the Association of Radioactive Waste Generators, attempt to select one of three qualified sites for a new waste repository.

RADWASTE I and II were first run in December 1984, at a DOE-sponsored workshop. All 34 of the participants represented groups that had responsibility for or a deep interest in the siting of low-level radioactive waste facilities. To determine if the simulation was successful, the PDP-research team administered detailed follow-up questionnaires. More than half of the participants felt that they had learned something about achieving joint gains through negotiation and indicated that they would use the collaborative problem-solving techniques explored during the workshop in future negotiations (see Rundle, 1985).

Key findings from these interventions, as well as others sponsored by the PDP, regarding the use of simulations are:

1. By introducing all disputants to joint problem-solving techniques it is possible to facilitate a simultaneous move by all parties to a new way of negotiating (N.B. It is more difficult for one side in a dispute to initiate a move to a different way of negotiating). Joint problem-solving emphasizes the search for mutually advantageous trades across issues—a "joint gains" approach that makes all parties better off than if such trades were left unexplored. Also, by highlighting the importance of how negotiations proceed, simulations show participants that the way they negotiate, and not just economic and political constraints, determines the outcome.
2. Through simulations, participants can learn how other stakeholders think and what their interests are. Indeed, by reversing roles during the simulation the participants can develop a clearer sense of the "other side's" concerns. The hope is that by better understanding the reasons that others take the positions they do, it will be easier to reach a mutually beneficial agreement.
3. The informal setting of a simulation (and the fact that it is only a "game") makes it easier to explore possible agreements that might otherwise not be discussed by the disputants. The "safe" environment offered by a simulation makes it possible to consider politically risky options. The informal setting

also allows for the strengthening of interpersonal relationships between traditional "allies" and "adversaries" – these can be extremely important to the actual negotiations that follow.

The success of simulations in highlighting these lessons can further the cause of dispute resolution by encouraging the participants to use their new, consensus-building skills in real life controversies. Indeed, the success that PDP and other groups have had challenges the conventional wisdom regarding resistance to simulations expressed by Goldberg and Van Opstal (1988):

> The notion of taking precious hours from day-to-day management for abstract excursions [e.g., simulations] is often seen as frivolous. But behind this argument lie deeper biases and fears. Studies have shown that officials think of themselves as better managers than they actually are. This belief, added to the view expressed by many executives that every crisis is unique and, therefore, no scenario can capture the essence of a real event, makes gaming seem a waste of time. Given this and the fact that simulations are designed to point up shortcomings in crisis response, many decision-makers prefer to avoid the ordeal altogether. (pp. 35-36)

The success of the American Energy Assurance Council's National Energy Policy Simulation offers still further reason to question the conventional wisdom.

The National Energy Policy Simulation

For several decades, the United States has not had a comprehensive national energy strategy and, as a result, it remains vulnerable to fluctuations in the price and availability of foreign oil and gas (see Cavanagh, Calwell, Goldstein, & Watson, 1989; United States Department of Energy, 1989; Kondracke, 1989). This vulnerability and the continued inattention to long-term energy needs threatens America's security, its economic competitiveness, the social welfare of its citizens, and the global environment. Many analysts and politicians agreed – even before the 1990 Gulf conflict – on the dangers of letting this state of affairs continue, but all efforts to forge a national energy policy had failed (see Cavanagh et al., 1989; Crawford, 1987; Gettinger, 1985; Heede & Lovins, 1985; Lovins & Lovins, 1983, 1987; Mathews, 1989; United States Energy Association, 1988). The main reason for these failures continues to be the difficulty of getting the various interest groups, each of which believes that its approach to solving the energy problem is best, to work together. The differences among these groups are

substantial. For example, the nuclear industry advocates building more reactors, while most environmentalists are generally against nuclear power and in favor of energy conservation and the use of alternative, relatively clean, energy sources. Oil, gas, and coal interests, understandably, have still other ideas about which energy sources should be supported by the federal government.

In 1987, several governors of western, energy-producing states helped to create the American Energy Assurance Council (AEAC) to stimulate national debate on energy policies sensitive to issues of international trade and competitiveness, environmental quality, and which would assure national security and provide producers and consumers with greater economic and social stability (see American Energy Assurance Council, 1987).

Although the AEAC Board of Directors was initially made up of energy company CEOs and Governors of the western states, it later expanded to include environmental and consumer organizations, members of Congress, as well as representatives of other interest groups with a stake in energy policy. Since its inception, AEAC has defined its role as an "honest broker," seeking to build an informal consensus on national energy strategy. AEAC has no interest in dictating the terms of American policy or usurping the responsibilities of other public or private bodies. Instead, it wants to fill a void by ensuring that (a) face-to-face dialogue among leaders of all key energy policy constituencies occurs regularly; (b) the agenda of energy policy questions and options is shaped quickly, in the wisest possible way, with sensitivity to the full range of interests involved; and (c) that an informed consensus leads to sustained action and not just short-term political compromises soon sabotaged by groups who feel that their interests have not been adequately served.

In trying to achieve its goals, the AEAC faced a familiar problem—how to get the parties to work together before the next crisis. The AEAC asked the MIT-Harvard Public Disputes Program to prepare a simulation to demonstrate that it will be too late, when the next energy shock hits, to reach agreement on the best ways of reducing our country's vulnerability to the external forces that dictate the supply and demand for energy and affect our national security, our economic well-being, and the quality of the global environment. If the truth of this proposition could be demonstrated, the various parties to the energy debate might be more willing to come together to avoid the next crisis. The National Energy Policy Simulation (NEPS) was created during the Summer and Fall of 1988, and ran on November 18th and 19th at the Xerox International Center for Training and Management Development in Leesburg, Virginia.[2]

On those two days in November, an "improbable coalition" of more than 60 high-level representatives of almost all the key interest groups in the energy policy debate played out an energy crisis scenario (see Egan, 1988; Reifenberg, 1988). The 1993 scenario assumed, among other things, (a) a series of oil price shocks caused by hostilities in the Middle East, (b) international restrictions on the burning of fossil fuels to reduce global warming, (c) nuclear power plant shutdowns in Japan necessitated by earthquake damage, and (d) the deterioration of America's independent oil and gas production capabilities. The opening paragraphs of the scenario (presented as a news broadcast by well-known TV correspondents) specified the scope and complexity of the problem:

> It is February 1993. The United States has just experienced a serious energy emergency. There were rolling brownouts and recurring blackouts in parts of the Northeast. A cold spell halted most of the barge traffic on the Ohio River from Pittsburgh to Cairo, Illinois. It was not possible to meet the entire demand for coal, home heating oil, or electric power. High oil prices and cutbacks in international supplies of oil and gas forced the president to tap America's Strategic Petroleum Reserves. The inflation rate jumped sharply and is now at 9%. The national deficit is once again increasing, instead of decreasing, and the balance of trade is seriously out of balance.
>
> It is now apparent that American and European refiners misperceived the consequences of limiting supplies and reducing raw product inventories—as they did when assets were sold to foreign governments and joint ventures with foreign partners were initiated in the 1980s. They underestimated the availability of and the time required to obtain replacement supplies from other foreign sources. In addition, they faced unexpected delays in securing supplies from the Strategic Petroleum Reserve. The political reality of nationalistic pressure to preserve available stockpiles led to a total breakdown of the OECD sharing arrangements envisioned in International Energy Agency agreements crafted in the 1980s.

The scenario went on to say that despite the seriousness of the problem, the crisis management staff at the White House pulled the country through the worst of the winter without resorting to rationing or other drastic measures. The public was, however, confused and angry. Polls showed that the energy issue was once again at the top of the list of public concerns and there was a clear mandate for action.

In the face of such pressures, the president joined with other world leaders to call for concerted international action, but there was no consensus on what that action should be. Indeed, even in the United States there were major disagreements about how to reduce America's energy vulnerability. It was in this context that the president convened a broadly based, bipartisan Commis-

sion on America's Energy Future. The president asked the 16-member commission to develop detailed proposals for reducing America's vulnerability to the kinds of pressures and events that caused the recent emergency. The commission was given 6 months and was urged by the president to strive for consensus so that further political conflict could be avoided and the country could speak with a unified voice about long-term remedial action in a time of great international tension.

The president appointed the following commission members:

- Two members of the House of Representatives (the Democratic chair of the House Energy and Commerce Committee and the ranking Republican member of the House Interior and Insular Affairs Committee).
- Two members of the Senate (the ranking Republican member of the Committee on Energy and Natural Resources and the Democratic Chair of the Committee on Environment and Public Works).
- Two governors (one from a western energy-producing state, and one from an eastern energy-consuming state).
- A member of the National Security Council.
- A retired CEO of a major oil company.
- The CEO of a major investor-owned electric utility.
- Head of a national labor union.
- Director of a major national consumer federation.
- President of the Board of Directors of a national environmental organization.
- A Nobel Prize-winning scientist now heading one of America's foremost technical universities.
- A leading investment banker.
- Director of The National Caucus of People of Color.
- The Secretary of Energy who was asked by the president to chair the commission and serve as the former's personal liaison to the commission.

Nine lobby groups were given opportunities to influence the members of the commission. These groups were the large energy consumers lobby, the national environmental coalition, the nuclear lobby, the oil and gas lobby, the coal lobby, the alternative energy association, the farm lobby, the national consumers coalition, and the automakers lobby.

At three points during the simulation, reports were broadcast to all participants by media commentators. These summarized the public's view of the commission's deliberations and highlighted national and international events that had taken place while the commission was meeting (the game manager worked with the commentators to develop these in response to the way the simulation evolved). Commentaries were presented via closed-circuit TV by participants who played the parts of reporters for news organizations including *The New York Times* and *The Wall Street Journal.*

The Two Days in November

On Friday night, the 18th of November, after getting acquainted at the AEAC-sponsored social hour and dinner, the NEPS participants were formally welcomed by Governor George Sinner (D-ND), Chairman of the AEAC. He described the history of the AEAC and acknowledged those who had supported the effort. The governor then articulated the nature of the problem that brought them together:

> Conventional ways of handling energy policy disputes no longer seem to be working. Each of us, whether our principle concern is national security, economic vitality, environmental quality, consumer welfare, regional equity or half a dozen other issues, tends to insist that the question of energy policy should focus on our own problem and not the other guy's. Yet each of us sees great harm to our concept of the national interest in the absence of a clearer national energy strategy. The point is that while each of us believes he or she can craft a more responsive national energy strategy, our responses all differ sharply; and not one of us is politically powerful enough to impose our will unilaterally. As a result, no interest is served, most of all not the national interest.

Then, the simulation started (see Figure 1 for a flow-chart of the NEPS process). It was no longer 1988, but 1993. For the next 23 hours the participants were expected to accept the events described in the scenario as real. They were asked to play the roles of specific commission or lobby group members. The game manager made it clear that the purpose of the simulation was to bring the various interest groups into a candid and realistic conversation about the nation's energy strategy. He noted that nothing said by any of the participants would be attributed to them—if the participants wanted to speak on the record to the press they could do so after the simulation ended.

The participants picked up briefing books containing detailed confidential instructions along with meeting schedules and a list of role assignments. The game manager requested that participants review their instructions that night to prepare for the next day's events. To ensure that the discussion of both the commission and the lobbyists remained focused and realistic, each set of confidential instructions contained a summary of that player's positions on key policy questions. For each policy the person playing the role was told, on a scale of 1 to 5, whether they strongly opposed or strongly favored it, and why.

The Saturday session began at 7:30 a.m. with an hour-long working breakfast at which commission members, who had received invitations the night before, joined the lobby group(s) of their choice to discuss energy

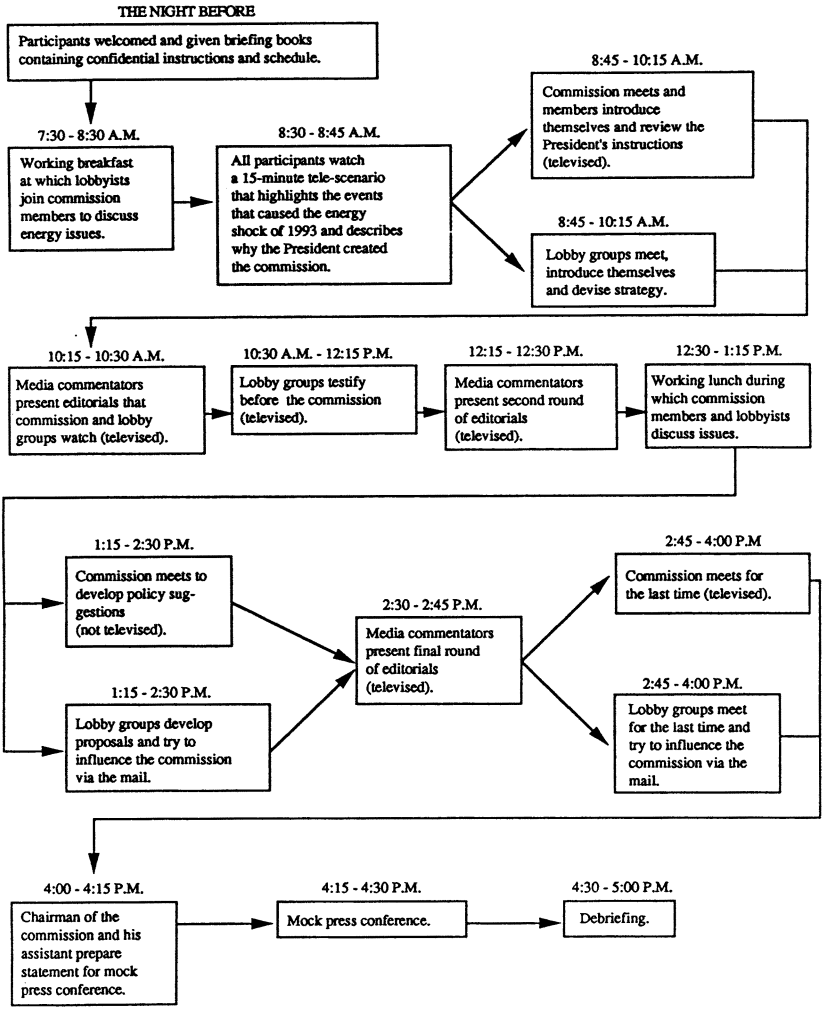

Figure 1: The NEPS Process

policy. After breakfast, the commission assembled in one room and the lobbyists assembled in another.

Once the participants reached their respective rooms at the conference center the 15-minute "tele-scenario" was shown on closed-circuit T.V. The

tele-scenario made it clear with dramatic film footage that the year was 1993. It also ensured that all the participants were briefed on all the events that caused the "energy shock."

Following the tele-scenario, the chairman of the commission welcomed the commission members and reviewed the mandate given to them by the president. During the next hour and a half (8:45-10:15 a.m.) commission members introduced themselves and enumerated the three to four policy positions about which they felt most strongly. At the same time, the nine lobby groups, some with more than 10 members, watched the commission meeting on closed-circuit T.V. and prepared testimony to be presented at the commission's second meeting.

From 10:15 to 10:30, the media commentators presented 3-minute editorials on closed-circuit T.V. They summarized the public's view of the commission's deliberations and highlighted national and international events that took place during the month since the commission convened. (N.B. The simulation condenses 6 months of commission deliberations into a single day.) The commission and the lobby groups took a break to listen to these broadcasts.

At 10:30, the commission reconvened to hear testimony from, and ask questions of, the representatives of each of the lobby groups. This continued until 12:15 and gave the lobby groups a chance to influence commission deliberations directly. At 12:15 the media commentators presented the second round of editorials in which they reflected on the second and third months of the commission's deliberations.

Lunch began at 12:30. Commission members were once again invited to join specific lobby groups. After lunch, at 1:15, the commission reassembled for its third working session to begin developing specific policy suggestions for the president. To encourage more candid discussion among commission members, this session was not televised. Although substantive issues were discussed, much of the session was spent attempting to hammer out procedural matters, such as how best to consider the issues before them.

While the commission was meeting behind closed doors, the lobby groups worked to develop proposals of their own. In contrast to the commission, they had little difficulty with procedural questions, moving quickly to frame packages of specific proposals. Then, instead of coming up with separate sets of proposals, the lobby groups sought to build broader coalitions. Ultimately two coalitions formed, and by the end of the commission's third session these coalitions had already found common ground on a surprising number of issues. In addition to working on their own proposals, the lobbyists also tried

to influence the commission by sending mail to commission members every hour.

At 2:30, the participants all watched the last of the news broadcasts. The commentaries focused on the results of the commission's third meeting and urged the commission to press forward in its efforts to develop proposals for the president. With time running out, the commission convened its last working session at 2:45 p.m.

During its last session, the commission snagged on procedural problems, but it did, nonetheless, manage to reach agreement on five proposals for the president. The two lobby group coalitions were considerably more successful. Instead of simply watching the commission's final deliberations on closed-circuit T.V., the coalitions continued to work toward a policy consensus of their own. Indeed, the two coalitions came close to achieving unanimity on a series of policies and about a half hour before the last session ended, at 3:30, they were able to mail a relatively detailed list of proposals to the commission for its consideration.

From 4:00 to 4:15 the chairman of the commission and his assistant prepared a press release that was then delivered at a mock press conference between 4:15 and 4:30. After this, there was a half-hour debriefing. Although relatively short, due to the departure schedules of the participants, the debriefing was an important part of the simulation. By facilitating a lively group discussion of what had transpired, the game manager not only highlighted the lessons of the simulation, but he also got the participants thinking about what, if anything, the AEAC might do to follow-up the events at Leesburg. In addition, the participants completed a one-page questionnaire that included questions concerning the value of the simulation and their desire to be involved in follow-up activities.

Surprising Results

In the course of the simulation, the commission spent a great deal of time haggling over procedural issues such as how best and in what order to consider the issues before them. This haggling meant that there was less time to devote to actually discussing the substantive issues and coming up with concrete proposals for the president. And, when the commission did take up substantive issues it often did so in a counterproductive, "zero-sum" fashion. Each commission member had a lot on the line and wanted to make sure that the issue of greatest importance to him or her was addressed first. This led the commission to consider issues sequentially, instead of as part of a larger

package. Thus, when issue X was up for discussion, those members opposed to or in favor of X rallied their forces which, more often than not, contributed to deadlock. The others sat by impassively. Another difficulty facing the commission was the tension surrounding its deliberations. Not only had the commission members received their instructions from the president, but they also met under hot lights in front of T.V. cameras that fed to the room where the lobby groups were meeting.

Given this context, it is not surprising that the commission was unable to reach a comprehensive agreement. Instead, the commission presented five very general policy recommendations, including a proposed 3% annual reduction in oil imports, a 3% increase in energy efficiency (as a percentage of gross national product), and dramatic increases in the budgets of the National Science Foundation and the DOE for energy-related research. Commenting on the commission's efforts, the chairman stated, "I do not believe we have succeeded in arriving at an integrated policy that will advise the president. We tried mightily . . . but what we have recommended is too general to be called a success."

The lobby groups were much more successful in hammering out a set of specific proposals. They quickly abandoned their individual efforts to influence the commission and formed two broad coalitions. In forming these coalitions, the lobby groups believed that by combining forces they would be able to not only better protect the interests of their constituencies by avoiding zero-sum battles among themselves, but also have more power to influence the commission and, therefore, national policy making. Understandably, in forming the coalitions, lobby groups sought alliances with those who held similar views. One coalition (A) was composed of environmentalists, the alternative energy lobby, and consumer groups, and the other (B) consisted of those representing farming, coal, nuclear, oil and gas, automakers, and large energy consumers.

Coalition A produced 15 policy recommendations, including the removal of all energy subsidies, a gas-guzzler tax and gas-sipper rebate, dramatic improvements in low-income citizens' home weatherization and interim fuel-assistance programs, and support for basic research aimed at lowering the costs of renewable energy sources and efficiency technologies. Coalition B, also had no trouble coming up with a 15-part proposal urging the commission to, among other things: support a floor price on oil sufficient to stimulate exploration and production of primary domestic oil supplies; oppose an increase in gasoline taxes; open more public lands for oil, gas, and coal exploration, consistent with multiple use policies; and encourage nuclear energy by standardizing reactor design, supporting smaller plants,

reducing licensing and construction time to 5 years or less, and establishing a federal repository for radioactive waste. "Without these steps . . . [Coalition B leaders stated], America will continue to grow more reliant on foreign sources [of energy] and will never develop sound alternatives based on domestic resources." Although the coalitions presented their packages separately, some of the participants were optimistic that, given more time, the two groups could have come to a consensus on many of the elements of a single, joint proposal. Indeed, looking at Coalition A's proposal, the oil and gas lobby (part of Coalition B) said they could agree with all but three of its recommendations.

It is not surprising that the lobby groups were more successful than the commission. They met informally. They were not under the same pressure as the commission to come up with definitive proposals. It was this relative lack of pressure, ironically, that enabled the lobby groups to succeed in devising them. The groups caucused freely and were more comfortable exploring each others interests, reaching out to those with whom they disagreed, and creating packages of proposals that could be discussed and revised. In other words, the lobby groups were involved in integrative, as opposed to distributive (or zero-sum) bargaining (see Raiffa, 1982; Susskind & Cruikshank, 1987).

The lobby groups had little or no effect on the commission. The lobby groups did discuss issues with commission members over lunch, and they did send mail to the commission urging support for particular positions. Despite these efforts, however, the commission took little notice, primarily because of time constraints—the commission spent so long haggling over procedural issues that it had little time to devise and discuss its own proposals much less discuss those submitted by the lobby groups.

How Simulations Can Help

Did the simulation achieve its stated goals? Based on what transpired, the answer is yes. Indeed, the simulation helped the AEAC in a number of ways and triggered a variety of follow-up activities on the national level that make a strong case for the increased use of public policy simulations. The failure of the commission convinced the participants that it will be too late, when the next energy shock hits, to reach a national consensus on energy policy (the Persian Gulf crisis of 1990 certainly confirms this). This realization, in turn, increased the desire of the NEPS participants, and the groups they represent, to support a national consensus-building effort. Participants at

Leesburg brought a wealth of experience and political savvy to the table. What they discovered was that the process of building an informed consensus requires sustained, face-to-face dialogue, under noncrisis conditions, among interest groups that rarely talk to one another. Indeed, the partial successes of the lobby groups in reaching consensus is strong testimony to the value of low pressure, face-to-face dialogue in which the parties seek to maximize joint gains by inventing packages of proposals rather than by dealing with contentious issues one at a time.

The simulation also helped the participants clarify their best possible alternative to a negotiated agreement (see Fisher & Ury, 1981; Raiffa, 1982). In this case the best alternative was not the commission's failure, but the participants informal consensus-building efforts that took place outside the formal commission meeting.

The simulation gave each participant an opportunity to get better acquainted with traditional "adversaries" and many took advantage of the opportunity. As indicated by follow-up interview results, such contact was extremely beneficial. Indeed, heightened mutual respect led to several unlikely collaborations in the weeks immediately following the Leesburg meeting. One participant who was pleasantly surprised by the presentation of one of her long-time "adversaries" announced at the debriefing that she and this person planned to get together for lunch to "see if there might be more uniting than dividing them." It was, she said, the first time representatives from these two groups had agreed to discuss policy in a nonadversarial way.

Further, as a result of the simulation, all of the participants urged the AEAC, via responses on the debriefing questionnaires and post-NEPS written communication, to continue its consensus-building efforts. With this strong endorsement and the lessons of Leesburg in mind, the AEAC formulated its work plan for the following year.

Three key objectives, each reinforced by the success of the simulation, shaped the AEAC's agenda:

1. Provide a "safe" environment in which energy policy leaders could continue to explore points of agreement and disagreement. A safe environment is one in which meetings and communications are conducted in a way that allows the participants to set forth their overarching concerns, to learn the requirements of other groups, and explore tradeoffs that might meet the interests of all sides. The AEAC concluded that such interactions should probably be facilitated by a neutral party (acceptable to all) and aimed at producing a package of policy options that all groups could continue to refine.

2. Help opposing groups arrive at a common base of technical assumptions and forecasts. This might best be done by bringing together organizations whose analyses are in conflict. This does not necessarily imply new research. It did require, however, a disciplined attempt to get at the source of disagreement over scientific and technical conclusions, and where possible, to reconcile them, rather than remain trapped in a cycle of "adversarial science."
3. Work with the president and Congress to formulate a national energy strategy consistent with the understandings and conclusions that emerge from the consensus-building efforts previously described in (1) and (2).

In the winter of 1990, the AEAC prepared a comprehensive survey on energy issues titled Options for a National Energy Strategy. The survey was based on the responses of over 200 senior-level stakeholders in the energy policy debate. It clarified the issues of greatest importance to 12 key constituency groups, including the oil and gas industry, environmentalists, utility industry, and energy consumers. To further explicate the results of the survey, the AEAC sponsored a series of focus groups for members of each of the 12 constituencies. The survey and focus group results, in turn, provided the necessary background material for the AEAC's next major effort—the National Energy Consensus Experiment (NECE), held in Princeton, New Jersey in May 1990.

The NECE, which was supported financially by the DOE, the Environmental Protection Agency, and several other federal agencies, and had the blessings of numerous members of congress, brought together 150 senior-level executives from the 12 energy stakeholding groups for an intensive negotiating session. Unlike the NEPS, the NECE did not involve a simulation. The participants met in "stakeholder caucuses" and were then distributed over eight negotiating tables, each of which contained at least one representative from each of the stakeholding groups. With the help of a professional facilitator, each table worked to formulate a package of national energy policies that would meet the outstanding interests of all the stakeholders. The tables used a variety of negotiating strategies. At the close of the event, all the participants gathered together in a plenary session to examine the results.

The NECE, like the NEPS, was not an end in itself. Instead, it was an interim step to bring the stakeholder groups closer to creating an implementable national energy strategy. The verbatim reports from each negotiating table, the final plenary session discussion, and numerous follow-up letters confirm that the NECE achieved its goal (see Broder, 1990). Although the agreements reached at the tables tended to be somewhat general, the fact that

agreements were reached at all was heartening. This, coupled with the benefits of face-to-face negotiations led to widespread support for AEAC's continuing efforts. Indeed, shortly after the NECE, the DOE asked the AEAC to assist the administration in developing a consensus-based, national energy strategy. The AEAC, in turn, proposed that the DOE sponsor a 3-month negotiation with fewer participants than the NECE, all with senior-level roles in their respective organizations. The goal of these negotiations would have been to identify possible agreements, or packages of trade-offs, acceptable to all the stakeholders. These agreements would have then been submitted to the DOE to aid in drafting a national energy strategy.

Initially, the AEAC's proposal received a positive response from the DOE. But with the invasion of Kuwait in August 1990, the administration's focus shifted and the AEAC's proposal was taken no further. Although, the administration finally did announce a national energy strategy in February 1991, it was not thought to meet the interests of all the stakeholding groups. Indeed, the strategy was roundly criticized by most of the key groups involved and no action has been taken by Congress to pass the legislation necessary to implement it.

Another indication of the success of the AEAC's efforts, specifically the NEPS, is the response to the educational materials those efforts have generated. The NEPS was the subject of two half-hour Public Broadcasting Service television specials. One, titled "Search for Common Ground on Energy," was aired by more than 110 stations, including ones in New York, Denver, San Francisco, Washington DC, and Boston, and videotapes of the show have been sold through the Program On Negotiation at Harvard Law School. The other special, part of the Kwitney Report series, was seen in many of the same markets. In addition, several large organizations have ordered the 25-party, seven hour, NEPS game that is distributed by the Clearinghouse at the Program on Negotiation.

Making Simulations Work

There are many reasons why the NEPS was successful. They have to do with the nature of the energy policy debate, the stature of the AEAC and its commitment to involving influential people, and the design of the simulation itself. The energy policy debate is characterized by significant differences of opinion. The energy policy impasse of the past 2 decades is solid evidence that traditional methods of dealing with differences are not working. Because the stakeholding groups have been fighting each other for so long, their

positions have hardened and their ability to see past the conflict is reduced to the point where few of them even consider the possibility. The dynamics of the energy policy debate created a window of opportunity for the AEAC. A new president and a new Secretary of Energy indicated a desire to work out some sort of consensus on national energy policy and the AEAC offered a process aimed at achieving that goal.

The main reason that the AEAC was able to secure the involvement of the most senior people had to do with the stature and commitment of the AEAC Board of Directors. Each person on the board, which includes governors, state agency representatives, and leaders in the environmental and consumer movements, is well respected and highly influential. Further, each is committed to the AEAC philosophy and the process it has created to encourage the development of a national-energy strategy. Using their stature and commitment the board members worked for many months convincing other leaders in the energy policy debate to come to Leesburg. Their efforts paid off. High-level representatives of nearly all the key interest groups attended. And those few groups who were not represented, for example the automakers and organized labor, have been pressed subsequently by AEAC to join.

Merely having the "right" people attend the simulation did not ensure its success. In devising the simulation, many important design decisions had to be made. The first involved setting the agenda for the policy debate. During the preparation of the simulation, the game designers interviewed, by phone, many of the leading energy policy analysts in the United States, and also conducted a literature search. The game designers were aided by employees of a number of companies and public agencies that helped to gather information in response to requests by high-ranking AEAC Board members.

The interview and literature search process uncovered little agreement on basic issues relating to the present and future energy situation in America and worldwide. For example, there was sharp disagreement over the price that a barrel of oil would have to reach before the domestic economy would begin to feel the effect. Indeed, the estimates provided by some respected professionals in the field were more than twice those provided by others. During the simulation the data debate continued, causing many of the participants to urge the AEAC to sponsor joint fact-finding efforts so that in future discussions the various interest groups could understand why, and whether, they were really disagreeing.

A second design decision had to do with the preparation of the confidential instructions. Although some of the participants played their real life roles, others did not. It was, therefore, necessary to have fairly detailed sets of confidential instructions to insure consistency across players and to give

some players the extra information they needed to frame their arguments. To create the confidential instructions the simulation designers relied on lengthy phone interviews and careful reviews of stakeholders' position papers and public statements.

The simulation designers had to make sure that the participants viewed the scenario as plausible. Plausibility, face validity, or verisimilitude, as it is often called, is essential because without it the participants will view the simulation as frivolous and not participate seriously (see Cunningham, 1984; Greenblat, 1975; Ruben & Lederman, 1982; Schofield, 1988). The fact that the simulation was set quite a few years in the future helped as much as it hindered the effort to insure verisimilitude. The four plus years between the run of the simulation and the events it described offered time to create the significantly "new" or "transformed" world necessary to precipitate the crisis, but it also strained the designers' ability to insure that the evolution from November 1988 through February 1993 was seen as a plausible outgrowth of national and international events. In fact, three versions of the scenario were sent to a handful of well-known and respected energy experts for review. Between mailings, the scenario was edited by the game designers to reflect the comments of these experts.

The scenario not only had to be plausible, it also had to cause a similar level of discomfort for each of the interest groups involved in the simulation. In other words, each party had to have a reason to come to the table. If, for example, the scenario hurt all the energy producers except the natural gas industry the latter would have little motivation to work toward consensus. Creating equal levels of discomfort was achieved by pressing the outside reviewers to not only consider the plausibility of the scenario but also to make sure that each interest group would find something to worry about.

The game designers were confident that they could create a plausible and equally worrisome scenario that would generate a shared sense of crisis. A "sense" of crisis, however, was not the only thing they wanted. To make the simulation work the participants had to be in the right mood. That is why the simulation began with the 15-minute tele-scenario that showed well-known news reporters describing, with graphic footage, the events leading up to the crisis. This dose of realism, according to the participants, was quite effective.

Even with all of this preparation there was still the possibility that the simulation would not work as planned. One of the best ways to guard against such failure is to conduct a test-run. This presented some serious problems, not the least of which was the intended duration of play (roughly 23 hours). Rather than abandon the notion of a test-run, the game designers conducted

an abbreviated trial. To this end, 30 people, most of whom had a great deal of experience in energy policy, were invited to attend a three hour version of the simulation, roughly three weeks before the scheduled event in Leesburg. The game designers, through direct observation and participation feedback, gathered valuable information from the test-run that was used to clarify the instructions and revise the logistics for Leesburg.

The entire process of developing the simulation and ensuring that top people participated took 6 months and the combined efforts of numerous people, including the full-time efforts of three employees at the AEAC and a three person research team at the PDP.

Conclusion

For a simulation to have the positive effect that the NEPS had, interest group involvement must be well-defined and well-organized. This typically means that the dispute must be relatively mature. Unless these prerequisites are met it is hard to decide which groups to include and how to model their interactions. This kind of modeling requires data on the interests and public positions of each group. Such data can be gotten from interviews or from published statements.

Once a dispute is selected, the simulation designers need to gather a core group of influential people, drawn from the various interest groups, who believe that using simulations is an effective way to "jump-start" a real consensus-building process. This core group is essential for two reasons; first, to garner the financial and other assistance necessary to create and run a simulation and second, to attract other influential representatives of the various interest groups to participate. This last point is especially important, for without high-level people at the simulation it is extremely difficult, if not impossible, to get those people involved in postsimulation consensus-building activities. And without such involvement any consensus reached will have little chance of being taken seriously by those with the power to make policy.

The scenario, around which the simulation is centered, should be based on interest group interviews. The best way to guarantee a scenario's plausibility it to check it with experts in the field. It is also essential that the scenario create similar levels of discomfort for all the participating interest groups.

Closely tied to the scenario are the confidential instructions that give the participants the information they need to argue for positions they are sup-

posed to support in the context of their assigned roles. To focus the debate among the participants, it is helpful to indicate in the confidential instructions which issues are most or least important to each role player and why. This should be done through text and matrices that rank issues. To ensure accuracy, confidential instructions should be sent to experts in the field for review.

It is essential for simulation designers to conduct at least one test-run of any simulation. It is helpful to invite people familiar with the policy debate who also have experience in simulation design. During the test-run, simulation designers can stop the proceedings whenever the participants become confused and inquire as to the cause and possible remedies. At the end of the test-run, a debriefing at which the participants and the game designers can discuss reactions to the game and suggestions for improvement can be quite valuable. Finally, the participants should fill out a detailed questionnaire, noting their reactions to each part of the simulation.

At the simulation itself, it is important to generate an atmosphere of realism. Although a well-crafted and significantly disturbing scenario alone can achieve this goal, it is possible to intensify the crisis atmosphere through the use of a video re-creation of the events leading up to the moment of the game. The more intense the emotions the greater the simulations' verisimilitude.

The debriefing of the simulation, although the last step in the process, is one of the most important. With the events of the day still fresh in the participants' minds, that is the time when the game manager can help define what was learned and what follow-up actions might be appropriate. It is best if the game manager facilitates, rather than directs, the discussion, allowing the participants to reflect on their experiences in answering questions that both they and the game manager pose.

To gather additional data on the success or failure of a simulation, it is a good idea to distribute and collect evaluation forms at the end of the debriefing. These forms not only aid in preparing postevent documentation, they also can be used as a polling device to find out the ways in which participants might be willing to move ahead with actual negotiations implied by the simulation.

Finally, expect surprises (see Fraser, 1969, p. 81). Much of what happened in Leesburg was predicted by the game designers, especially the commission's inability to come up with a comprehensive set of proposals. However, there also were some surprises; for example, the coalitions formed by the lobby groups and their decision to work toward consensus on their own, paying little attention to the commission's deliberations. Not only was this surprising, but it also helped to get across the advantages of informal,

integrative bargaining. This was a perfect note on which to end the simulation, for it got the participants excited about the next stage of AEAC's planned activities.

Following these steps offers no guarantee that a simulation will be successful or lead to "real" consensus-building negotiations among the disputing parties. Indeed, some observers have argued that simulations like NEPS not only will not work but are potentially dangerous. The thrust of this argument is two-fold. First, there is the concern that simulations might provoke or even increase tensions among stakeholders if they are unable to come to any satisfactory agreements or if they get involved in interpersonal squabbling. The second concern is that the participants might use a simulation as an opportunity for grandstanding or gaining strategic advantage, especially if the proceedings are open to the press or the public.

On the first point, the main purpose of the NEPS was to convince the participants that waiting for a crisis would not be an effective way to provoke action that all the stakeholders could agree on. As for the possibility of heightening tensions or souring relationships, that did not turn out to be a problem. Tensions among the various groups in the energy policy debate were already high as a result of 2 decades of policy gridlock. The simulated environment at the NEPS and the fact that the participants were playing roles, not themselves, could not have made matters worse. In addition, the agreement that statements made during the simulation would remain unattributed, virtually eliminated opportunities for participants to grandstand or gain strategic advantage.

Some simulation experts have also suggested that it might be better for participants to engage in a simulation only with others of their own "persuasion." Although this would no doubt improve the understanding that each constituency has of the issues it faces, it would most likely fail to create any additional cross-group understanding. Also, having all of the interests meet in a simulated setting initially makes it much easier to bring them together again for actual negotiations. In our experience, familiarity builds a foundation for more effective future interactions.

Overcoming the real and often deeply ingrained differences among parties in public policy disputes is an extremely difficult proposition, as is evidenced by the high failure rate of traditional methods of solving contentious public policy disputes. Nevertheless, simulations have proven successful in bringing disputing parties together and helping to resolve their differences. As a result, it is likely that the use of simulations for this purpose will increase in the future.

Notes

1. Many of these simulations, including the NEPS, are available from the Clearinghouse at the Program On Negotiation at Harvard Law School. Materials include teaching notes, background instructions, confidential instructions for each of the role players, and additional handouts necessary to run the simulations. For more information contact the Clearinghouse, 500 Pound Hall, Harvard Law School, Cambridge, MA 02138, or call (617)495-1684.

2. The "Search for Common Ground on Energy" is part of a larger series produced by SEARCH FOR COMMON GROUND. Video tapes of the half-hour show are available by contacting SEARCH FOR COMMON GROUND at (202)265-4300, or writing to them at 2005 Massachusetts Avenue, N.W., Washington, DC 20036. The video may be rented for $25, or purchased for $40.

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